October 1970 / 60c

AIR FORCE

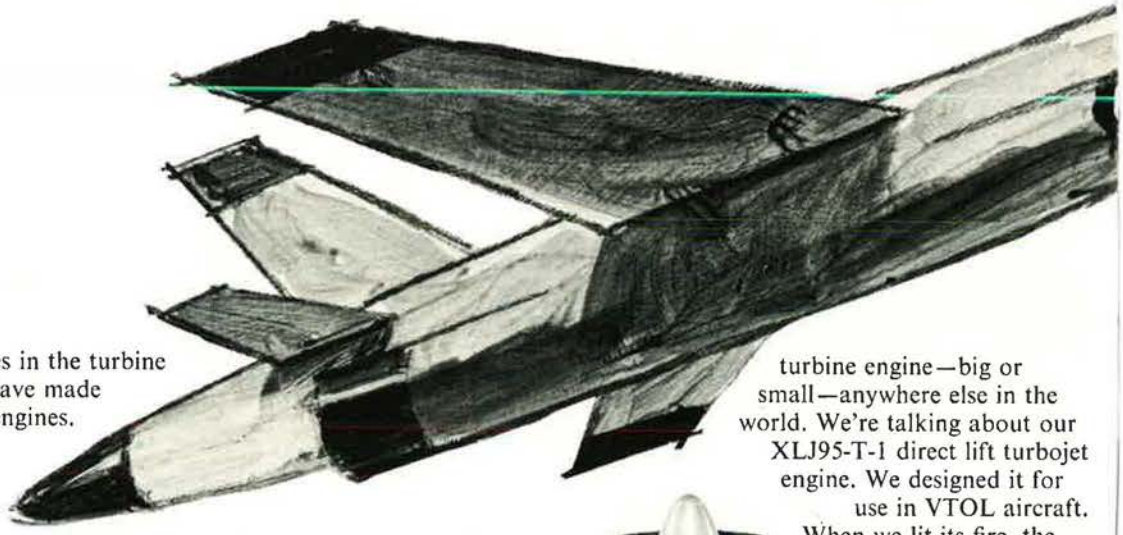
and SPACE DIGEST

The Magazine of Aerospace Power / Published by the Air Force Association

REMOTELY PILOTED VEHICLES

An exclusive report on a new development that will allow pilots on the ground or in a mother ship to actually fly unmanned aircraft in combat

We've in a



There are companies in the turbine engine business that have made it big by making big engines.

Then there's us. Teledyne CAE.

We've made it big by making small turbine engines.

Like our engines for target drones. We happen to be the world's leading manufacturer of turbojet drone engines. So far, Teledyne CAE engines in the BQM drone series alone have been successfully launched over 20,000 times. And nearly 10,000 of these launches have been in the air. Way up in the air.

Just recently our 1920-pound thrust YJ69-T-406 engine completed its flight test program in the Navy BQM-34E drone. It reached Mach 1.1 at sea level and Mach 1.5 at 60,000 feet. This same engine is programmed for the Air Force BQM-34F, incidentally.

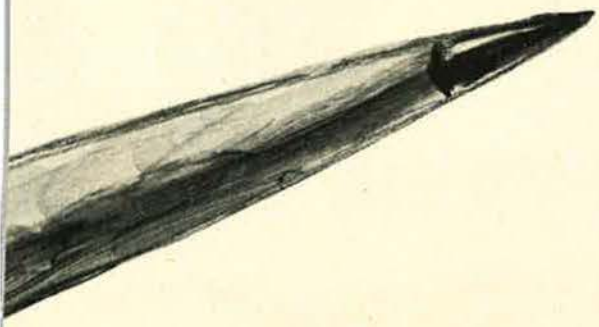
Another one of our drone engines, the Tri-Service J69-T-29 is famous, too. But for a slightly different reason. On a per pound of thrust basis, it's the lowest cost engine in the world today.

And, as you know, thrust per dollar is the name of the game.

We own another record that also hasn't been duplicated in another turbine engine—big or small—anywhere else in the world. We're talking about our XLJ95-T-1 direct lift turbojet engine. We designed it for use in VTOL aircraft. When we lit its fire, the XLJ95-T-1 demonstrated a thrust-to-weight ratio in excess of 20:1.

You don't get that kind of a thrust-to-weight ratio unless you know all about the most advanced

made it big small way.

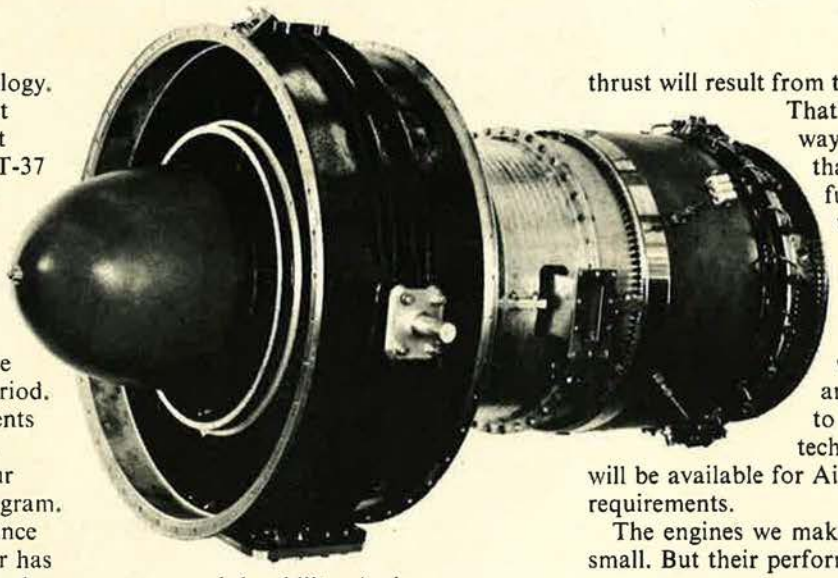


concepts in gas turbine technology.

We also build an engine that has been powering the T-37 jet trainer ever since there was a T-37 jet trainer. From the beginning of the program until now, the 3,900 engines we've supplied have logged over 7,000,000 flight hours.

It also has the lowest maintenance cost of any engine in the Air Force inventory. Period.

One of our latest developments isn't in the military inventory. Not yet, that is. It's part of our ATEGG or "core" engine program. For some time now, our Advance Turbine Engine Gas Generator has been demonstrating extremely high levels of performance and durability. And we expect that turbofan engines with a thrust to weight ratio of 10:1 and specific fuel consumption of less than 0.4 lbs/hour/lb. of thrust will result from this technology.



That's a technical way of saying that, in the future, small turbofan engines in the 2,000-5,000 lb. thrust range with performance equivalent to large advance technology engines will be available for Air Force requirements.

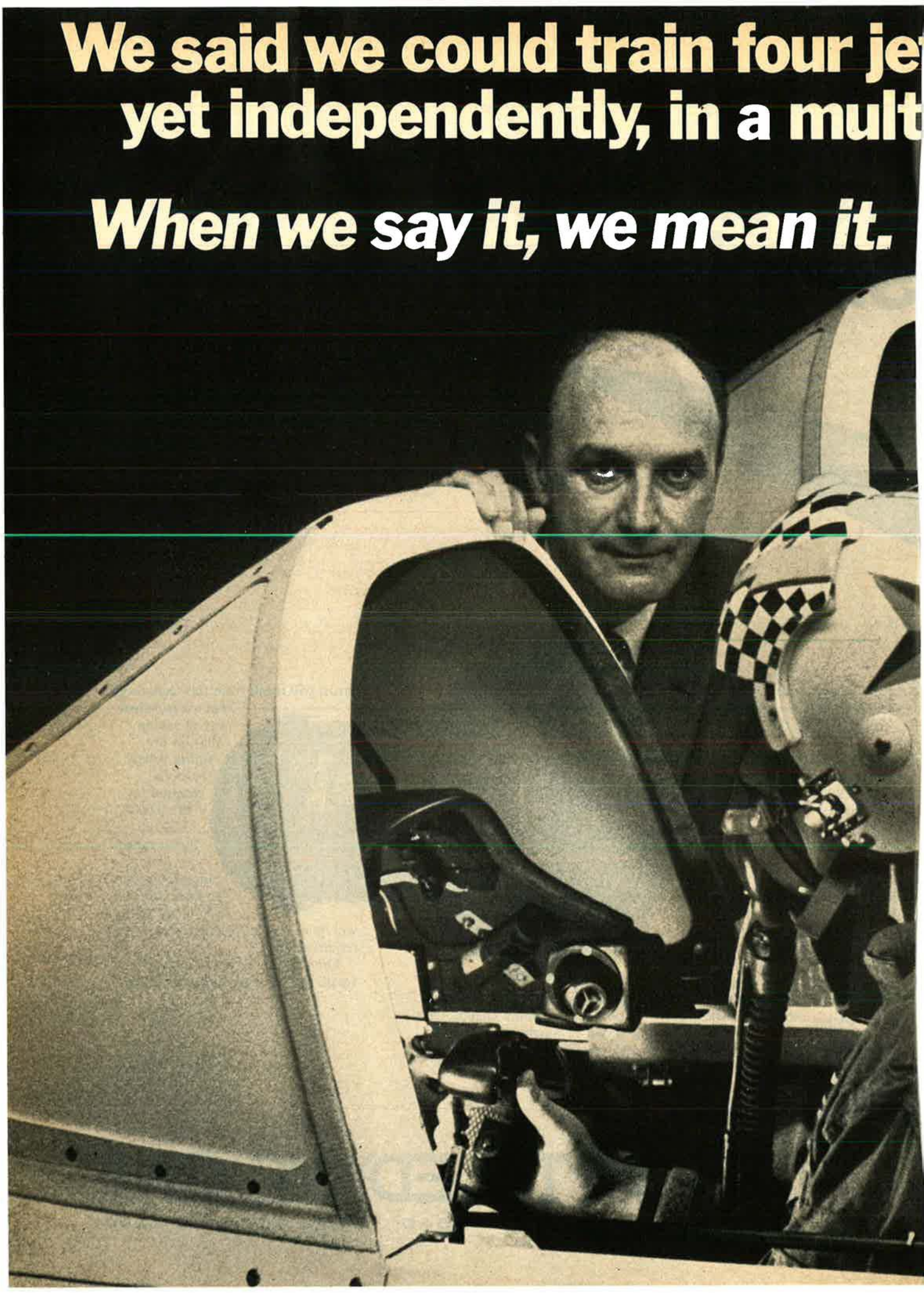
The engines we make may be small. But their performance is big.

TELEDYNE CAE

1330 LASKEY ROAD · TOLEDO, OHIO 43601

We said we could train four je
yet independently, in a mult

When we say it, we mean it.



pilots simultaneously, cockpit simulator.

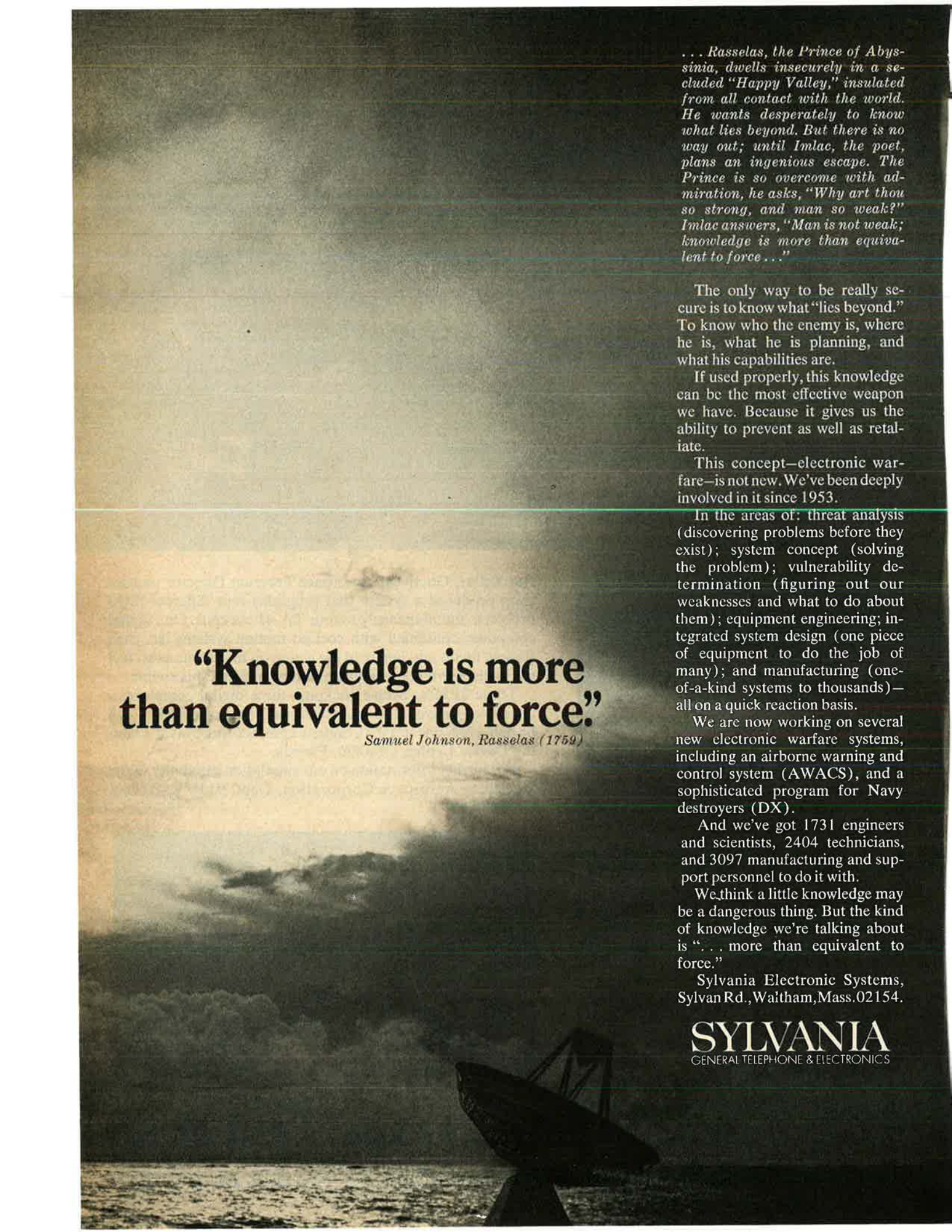
Jim Kelley, Goodyear Aerospace Program Director and his team produced a system that programs four different flight problems simultaneously to four TA-4J cockpits. One digital computer, combined with cockpit motion systems lets each student fly his mission, read the action on his instruments, feel the loads on his controls and anatomy and hear his engine.

Three 2F90's—twelve cockpits—three digital complexes—have been delivered to specifications. Five more 2F90's will be delivered, one in 1970, under a contract with Naval Training Device Center, Orlando, Florida.

For further information on our simulation capability, write Goodyear Aerospace Corporation, Dept. 911VV, Akron, Ohio 44315.

General arrangement of Device 2F90, now training jet pilots at Naval Air Station, Kingsville, Texas.

GOODYEAR AEROSPACE



"Knowledge is more than equivalent to force."

Samuel Johnson, Rasselas (1759)

. . . Rasselas, the Prince of Abyssinia, dwells insecurely in a secluded "Happy Valley," insulated from all contact with the world. He wants desperately to know what lies beyond. But there is no way out; until Imlac, the poet, plans an ingenious escape. The Prince is so overcome with admiration, he asks, "Why art thou so strong, and man so weak?" Imlac answers, "Man is not weak; knowledge is more than equivalent to force . . ."

The only way to be really secure is to know what "lies beyond." To know who the enemy is, where he is, what he is planning, and what his capabilities are.

If used properly, this knowledge can be the most effective weapon we have. Because it gives us the ability to prevent as well as retaliate.

This concept—electronic warfare—is not new. We've been deeply involved in it since 1953.

In the areas of: threat analysis (discovering problems before they exist); system concept (solving the problem); vulnerability determination (figuring out our weaknesses and what to do about them); equipment engineering; integrated system design (one piece of equipment to do the job of many); and manufacturing (one-of-a-kind systems to thousands)—all on a quick reaction basis.

We are now working on several new electronic warfare systems, including an airborne warning and control system (AWACS), and a sophisticated program for Navy destroyers (DX).

And we've got 1731 engineers and scientists, 2404 technicians, and 3097 manufacturing and support personnel to do it with.

We think a little knowledge may be a dangerous thing. But the kind of knowledge we're talking about is ". . . more than equivalent to force."

Sylvania Electronic Systems, Sylvan Rd., Waltham, Mass. 02154.

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An Editorial

THE PRICE OF PARITY

By John L. Frisbee

SENIOR EDITOR, PLANS AND POLICY

A KNOWLEDGEABLE friend tells us that his big worry, so far as defense affairs go, is the SALT talks. He's worried first, that they will not succeed; and second, that they will. Either outcome, he figures, will neutralize strategic nuclear forces on both sides. Without a SALT agreement, the relatively equal technology of the US and the USSR, together with economic factors, will probably lead to rough parity, with the US likely to be on the low side. If the SALT talks succeed, neutralization will still result, but at a lower, hence less-expensive, level.

Our friend isn't exactly turned on by either prospect, nor does he believe that parity, negotiated or *de facto*, will result in any significant savings in defense costs. He feels that nuclear parity is quite likely to create unlimited requirements for limited-war forces.

If the US wants to remain a world power and to retain tacit leadership of the non-Communist, nonneutralist world, then we're inclined to agree. Our reasons for thinking that strategic nuclear parity will be around for a long time are based on two apparently contradictory documents. The first is the President's February 18th "State of the World" message to Congress. It seems to support strategic nuclear forces, sized and made up to deter attack on this country *and* on our allies—in other words, a strategy of "extended deterrence."

There must be no doubt in anyone's mind about the operational capabilities needed to make extended deterrence credible to an opponent. Extended deterrence can work only if the Soviets and Chinese believe we can, and will, knock them out with a first strike if they trespass too far on US or allied interests.

The second document referred to is one with a lot of clout—the defense budget. There's little evidence in this year's bare-bones budget that the US is heading for an extended deterrent posture, despite the President's apparent endorsement of that strategy. It's almost certain that next year's defense budget will be several billion dollars lower than the current one. At the same time, we refuse to believe the Administration will allow the US strategic posture to deteriorate to the extent that this country would be exposed to a fatal Soviet first strike. So that pretty well levels things out at a position of nuclear parity.

With mixed emotions, we conclude that strategic nuclear parity is here to stay. If it moves the world away from the threat of large-scale nuclear war, it will be a blessing, but scarcely unmitigated. One of the bad things about nuclear parity is becoming painfully obvious. As the Soviets have built their strategic forces to a position of operational parity (not necessarily the same as numerical parity), they have become more venturesome. The Soviet drive into the Mediterranean and Middle East is purposeful and aggressive. Its implications for the future are bleak, as is pointed out on page 58 of this issue.

As strategic nuclear parity solidifies, we must expect that the USSR, and eventually China, will attempt to project Communist influence into any and every political vacuum and trouble spot they can reach. The Soviet reach is increasing steadily, too, with expanded seapower and more mobile land and air forces.

It doesn't necessarily follow that all challenges will have to be met by US military force. Nor will direct confrontation with the Soviets or China be inevitable in the near future, though current Soviet actions in the Middle East clearly indicate that they are far more willing to confront us directly than they have been at any time since World War II.

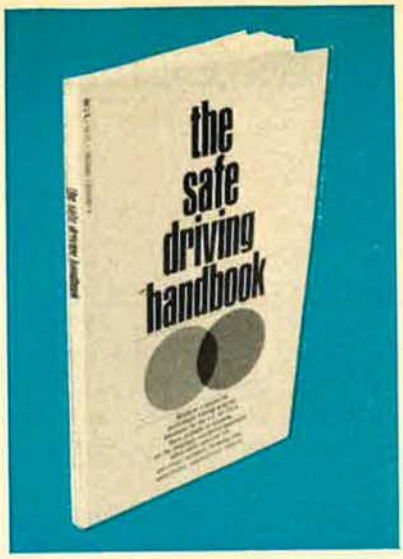
It does follow that, as a deterrent to aggression by bellicose diplomacy, proxy war, or direct Soviet/US confrontation, the US must have a credible ability to come to the aid of threatened nations when it is in our interest to do so. This kind of credibility doesn't come cheap, especially since some allies simply will no longer risk going along with us once they lose the immunity to Soviet or Chinese reprisal that US extended deterrence has provided. It's not going to be easy, either. Public support for US involvement beyond our borders has withered under the corrosive frustrations of Vietnam. But what is the alternative, short of a gradual decline of US influence and an inevitable absorption of smaller nations into the Communist spheres?

If all of this proves out, it will bring about some shifting of emphasis within the Air Force. Strategic deterrence will remain a top priority, but it will be a somewhat more limited mission than it has been—more limited than we think it should be. If public support for a significant Air Force role in limited war is to be forthcoming, tactics, hardware, and concepts must be refined to a point where conventional war is as aseptic as it can be made—where extensive destruction of civilian property and lives can no longer happen, even inadvertently.

A successful national strategy of unsought but protracted conventional conflict also depends on strong, articulate, and forthright national leadership. It is a long, expensive course, probably requiring larger forces and perhaps budgets than would a strategy of extended deterrence, based on nuclear superiority.

It cannot be represented as a safe and easy road. To so represent it would be self-delusion, and no peacefully inclined democracy can afford that luxury in a world not wholly peopled with good guys.—END

SAFE DRIVING— THE AIR FORCE WAY



THIS is to tell you about a current and important program of AFA's Aerospace Education Foundation. We have published, in cooperation with Grosset & Dunlap, Inc., a New York publishing firm, an excellent book called THE SAFE DRIVING HANDBOOK.

The book is based on the highly successful safe driving program of the Air Force, which accounts for our interest. It is an unusual example of how research and techniques paid for and developed by the Air Force can be converted into useful material for the civilian population at large. Perhaps the best way to describe the book is to print herewith an excerpt from the Foreword:

". . . The Air Force concluded that the principal factors in vehicle accidents, aside from mechanical failure, were operator errors and violations resulting from personal driving attitudes. Education in the basic facts of safe driving and the development of a good attitude were the keys to the Air Force approach.

"The medium of instruction was then chosen. A significant feature of the Air Force attack on the problem of driving safety is a multimedia program designed, under contract to a civilian firm, to convey the latest knowledge of driving safety techniques in the most effective manner. Since the accidents were occurring almost entirely in civilian settings—on ordinary roads and streets—while the Airmen were off duty or on leave, the latest civilian and Air Force studies were merged to develop the message of this program.

"We of the Aerospace Education Foundation feel that a public service will be performed by making the substance of the Air Force study program available to the general public.

"We believe the public will be interested in these techniques. The careful manner in which they have been researched and their proven reduction in driver fatalities are our reasons. The multimedia program has now reached 860,000 Airmen. That program, together with other continued motivational and educational efforts of the Air Force, has contributed to a significant drop in traffic fatalities among Airmen—from 443 dead in 1966 to an all-time low of 309 in 1969. . . .

"This handbook is about driving factory model cars on 'ordinary American highways and streets.' The techniques are the latest findings of civilian and Air Force safety engineers studying thousands of cars and thousands of drivers. We believe there are three main reasons why this course material has been so well received by U.S. Air Force Airmen.

"1. DRIVING IS COMPLICATED, BUT THE UNITS IN THIS TECHNIQUE ARE BROKEN DOWN INTO SIMPLE ITEMS. After scientists and engineers had analyzed the basic factors in this man-machine system what they had learned was broken down into the clearest possible teaching units, just as with other Air Force material. . . .

"2. THIS TECHNIQUE DOESN'T PREACH OR USE SLOGANS. . . . The whole thing is *designed to help a man teach himself while driving.* The Air Force driving course doesn't try to scare young pilots into driving as if they were 50 years old; it just gives them an idea of which bad driving habits may keep them from ever reaching 50. So this book won't preach to you. It will merely give you a world of information about driving.

"3. SAFE DRIVERS ARE THOSE WHO NOT ONLY WANT TO BE GOOD CITIZENS, BUT KNOW HOW. You drive with your head and your personality and your character. When the man-machine analysis was done two basic principles emerged.

"A. Your experience and your attitudes toward life determine your automobile safety habits.

"B. Your attitude is all your own, but *driving is a social activity.*

"So this book contains quite a bit about cars and highways and brakes and driving in the rain and alcohol and driving in cities or on freeways, in sunshine or in snowstorms.

"But the main topic is you and your behavior in the social system we call traffic."

The cost is nominal, as low as we could possibly make it. You can get your own copy, direct from the Air Force Association, for only $1, postpaid.

Fill in the coupon and mail today.

10/70

THE SAFE DRIVING HANDBOOK
Air Force Association
1750 Pennsylvania Avenue, N.W.
Washington, D.C. 20006

Please send _____ copies, postpaid, of THE SAFE DRIVING HANDBOOK at $1 per copy. My check or money order is enclosed.

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SCIENCE/SCOPE

An advanced surveillance radar developed by Hughes will be flight tested during the first phase of the U.S. Air Force's AWACS (Airborne Warning and Control System) program. It will be housed in a 30-foot-wide, mushroom-shaped radome installed on a 707-type aircraft by Boeing, the prime contractor. In AWACS' air defense role, the radar would be able to detect and track even low-flying aircraft. In its tactical role, the radar would be vital in the command and control of deployed tactical air forces.

A lightweight 1500-watt oriented solar array, built by Hughes for the U.S. Air Force's Aero Propulsion Laboratory, Wright-Patterson AFB, will be the primary experiment aboard a Space Experiment Support Program satellite scheduled for launch in September 1971. The FRUSA (Flexible Rolled-Up Solar Array) power system consists of two 16 x 5.5-foot panels that are contained in a 10-inch-diameter cylinder at launch.

The solar panels will be unrolled in orbit to their 32-foot length, oriented toward the sun, and held rigidly by parallel extension arms. The arms will be formed from metal ribbons unreeled through dies that turn them into stiff tubes (then flatten them into ribbons again when the array is retracted). Ten deploy-retract cycles will be attempted during the 180-day flight.

31 tactical air-control operations centers and two training systems, now in production at Hughes, will enable the U.S. Air Force to respond to fast-changing battlefield situations. The centers -- consisting of computer, displays, communications equipment, and air-supported inflatable shelters -- are packaged in 13-foot-long rectangular modules which can be moved by cargo plane, helicopter, or truck. The Hughes HM 4118 high-speed digital computer can operate in almost any military environment.

The longer, sharper noses of modern missiles and high-speed aircraft make mechanically scanned antenna systems more and more difficult to use. The elongated radomes increase boresight errors; the space between nose tips and antennas cannot be used for other equipment. An approach to the problem is a conformal-array antenna system that Hughes is investigating in a research program for the U.S. Navy.

Because it has no moving parts, this electronically scanned system eliminates the conventional radome. Its radiating elements are set flush in the surface of the nose cone. Rapid-beam scanning over a wide field of view, including the direction of the missile's axis, is under investigation.

An advanced modular computer designed to meet military command-and-control requirements has been developed by Hughes. Designated H4400, it can be expanded to include up to eight processor and 16 memory modules per computer. Such a system can perform more than 4 million operations per second and store more than 8.5 million bits of information. Advanced features include automatic fault isolation, automatic reassignment of a malfunctioning module's tasks, and extensive use of medium- and large-scale integrated circuits. Each module weighs 40 pounds and is housed in a standard package whose volume is 0.9 cubic foot. A comprehensive software package has been developed.

AIRMAIL

GIBs on the Ho Chi Minh Trail

Gentlemen: As a SEA veteran and a former pilot with the 25th Tactical Fighter Squadron and the 433d TFS at Ubon AB, Thailand, I can appreciate Major Berent's article "Night Mission on the Ho Chi Minh Trail" (August issue) on his hairy night mission. But, as a former F-4 GIB, I was both surprised and amazed, especially since he was a 497th TFS Nite Owl, that he omitted any mention of the GIB and his part that night.

Major Berent appears to be the only man to have accomplished a combat mission solo in the two-man Phantom. Major Berent could not have occupied both cockpits simultaneously. However, he states: "I start the engines, check the myriad of systems — electronic, radar, engine, fire control, navigation—all systems; . . ." That is quite a feat, especially since the radar system controls and the navigation system controls are in the rear cockpit. To claim any credit for the GIB's work, no matter how small, is an injustice.

It is well known that night missions can be very hairy, and it is also well known that there were a lot of Phantoms that would have been lost to the karst had it not been for the fact that some GIBs were able to recognize unsafe and dangerous situations.

GIBs may have been a luxury item, as Lt. Col. William E. Haynes states in his letter (also in the August issue), but GIB POWER was there and we fought the war too.

CAPT. A. FRONZAGLIA
Hamilton AFB, Calif.

Gentlemen: Colonel Haynes wasn't quite fair in his letter attacking the F-4 GIBs' role in Southeast Asia as only "their half of a one-man job" (August 1970 "Airmail"). Having flown more than a few night runs and certain rather involved day missions as a back-seater in both the F-105F and F-4D, I became convinced that multimission combat aircraft such as the F-4 and the (E)A-6 achieve versatility primarily because of the second man running all that extra gear in the cockpit.

In other words, perhaps the need for the man depends on the needs of the mission. Sure, the normal daytime out-and-back trip offers direct bombing parameters obviously right up the alley for the 100, the A-7, and the venerable Thud. But the much more demanding and complicated requirements of special night FACing, all-weather bombing, SAM-suppression, and grueling night escort sorties all create a crying need for a second jock doing an honest job.

And, tied with this, I noted an unfortunate irony in the same issue in Maj. Mark Berent's article, in which his GIB simply became an unperson during the description of a "typical F-4 night mission." Why the back-seater got lost in all that purple prose is mystifying. . . .

In any case, I have heard more than one former Hun driver (in their cups, to be sure) assert that flying in combat had convinced them the F-4 and its GIB-of-all-trades "are worth their weight in gold."

Some even more expert opinion backs up that contention: Professor Willy Messerschmitt (who has achieved a certain reputation in the trade) was asked recently to choose the best fighter aircraft today. "The McDonnell Phantom, it does everything," he replied.

GAR PILL
San Francisco *Chronicle*
San Francisco, Calif.

• *For another side of the GIB story, we refer our readers to "Navigator's Log: Jack Armstrong to the Age of Aquarius and Beyond," by Maj. Joseph F. Tuso* (AF/SD, *June '70). The favorable comments on that article, and the several requests we've had to reprint it, show that there are a lot of GIB-supporters around these days.*—THE EDITORS

Anybody's Friend Would Do

Gentlemen: I read with a great deal of interest "An Airman Returns to Romania," by Kenneth D. Barney [August '70]. I remember him and his pilot and copilot quite well. I was shot down over Ploesti during June of 1944 and ended up in the same prison.

My most unforgettable experience occurred one night when we were in the basement of our prison sweating out an air raid by British bombers. Neither the Americans nor the British knew the site of our prison, which was located fairly close to several military targets. After we had been sitting on the floor of the cellar listening to the scream of British bombers for hours . . . the all-clear siren sounded, and we started upstairs to our rooms.We were part way up the stairs when we heard a plane overhead. We began a hasty retreat to the cellar when one of our group, who happened to be close to a window, looked out and seeing that the plane was a German Messerschmitt, said: "It's all right boys, it's one of ours."

WILLIAM D. HATHAWAY
U.S. Congressman (D-Me.)
Washington, D.C.

A Lesson in Stability

Gentlemen: "The Designers of Dassault," August 1970 issue [by Edgar E. Ulsamer], is one of the most timely and fascinating articles I have read in a long time.

It should be required reading for top management of the aerospace industry as well as top Pentagon officials. Have we lost sight of the fact that the object is to design and build airplanes and not to create vast empires dominated by reams of paper and computer runs?

It is no longer a joke that the paper generated alongside any American prototype airplane often exceeds the weight of the airplanes, be it a light observation helicopter or the SST.

Dassault's approach to maintaining steady employment is also worth considering. Has anyone thought that the American aerospace industry, with its enormous fluctuations, might find an increased measure of stability and security for its employees by adopting Dassault's techniques of management?

Recent cutbacks and layoffs have prompted thousands of aerospace engineers to seriously consider the wisdom of remaining in an industry so permeated with instability. Many have been through more than one layoff and are, very simply, sick and tired of it. The US cannot afford this!

In many circles it is fashionable to belittle the French aerospace industry, but with the condition the American aerospace industry is in, it might pay to have another look at Dassault's sound venture.

AEROSPACE COMPANY EMPLOYEE

Letter to the Author

Dear Major Tuso: I read with great interest your article in AIR FORCE/SPACE DIGEST, June issue, about navigators in the rear seat of the F-4 while with the 8th Tactical Fighter

(Continued on page 11)

Those Illegal Shark Teeth

The cover of AF/SD's May 1970 issue featured Keith Ferris' painting of shark-toothed F-4s, bound for Southeast Asia. The painting, part of the Air Force Art Collection, is reproduced here in black and white. Our May cover evoked queries as to the painting's accuracy (including a letter from Paul Runey that appeared in our August "Airmail"), since distinctive markings are not now authorized in SEA. Here is the story behind the Ferris painting, written by a pilot who was there.—THE EDITORS

The F-4Es in the painting were the first F-4Es in combat. They deployed from the 33d Tactical Fighter Wing at Eglin AFB, Fla., on November 13, 1968, as the 40th Tactical Fighter Squadron. Upon arrival in SEA it became the 469th TFS at Korat, Thailand.

The Squadron Commander, Lt. Col. (now Col.) Edward Hillding, with surreptitious aid and abettance from sources probably (?) unknown to the Wing Vice Commander, Col. (now Brig. Gen.) Daniel "Chappie" James, decided to "test paint" a few aircraft shortly before deployment. There was an instantaneous boost in squadron morale and pride. There was no doubt as to which squadron the shark-toothed F-4Es belonged.

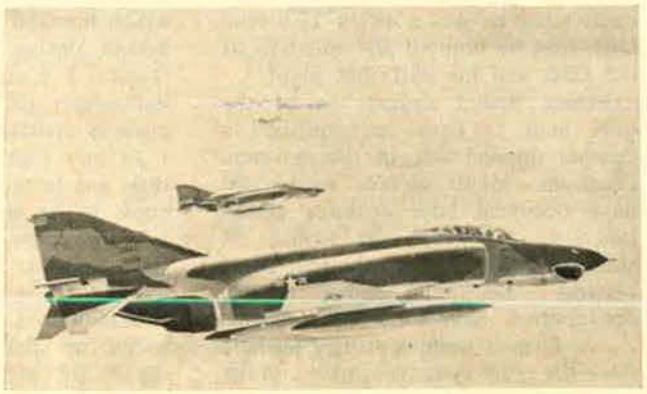
Quite naturally, the word was passed to remove the teeth because they were not authorized. Generals who inspected the squadron before deployment pointed out the transgression, with a twinkle in their eyes.

Unfortunately, however, there was no paint remover immediately available and the moment for deployment was at hand. Besides, removing the teeth might also have taken some of the camouflage paint with it and there was no more camouflage paint handy. Obviously, there was only one course of action remaining—paint 'em all, including spares! Although the Maintenance Superintendent, CMSgt. Buford A. Beane, and the dental designer, Lt. (now Capt.) Steve Stephen, may deny any knowledge of the event, the last aircraft was painted the night before the deployment.

Keith Ferris and Marbury Brown, another highly respected contributor to the Air Force Art Collection, joined the squadron at Hickam AFB, Hawaii, and continued to Korat. Marbury went with the maintenance men and equipment in C-141s while Keith received permission to fly in the back seat of an F-4E. Keith proved to be as effective as a GIB as he was with a paintbrush. He operated the inertial navigation system, radar, radios, and navigation aids flawlessly. He even spelled the aircraft commander at the controls on the seven-hour-plus legs of the journey. Rumor has it that he is not a bad refueler.

The May '70 cover painting, "Bad News for Uncle Ho," had its genesis at 29,000 feet between Hickam and Guam on November 16, 1968. It was put together from in-flight sketches, paintings, and countless photographs that Keith made that day and the next. It was a mystery where he found room to stow all that painting and photographic equipment, along with his lunch container, "piddle pack," and vacuum bottle.

On landing at Korat on November 17 (see the Westinghouse double-page spread in the June and August issues), the 469th TFS F-4Es closed out a revered chapter of Thud (F-105) history at Korat and began one of their own. For six glorious months they enjoyed the distinction of being the only F-4Es in combat and set continuous records for combat hours flown, ordnance dropped, accuracy, and just plain getting the job done. Pride on the part of both the ground crews and aircrews had a lot to do with it. You would tingle all over to hear the FAC say, "Are you the guys with shark teeth and the magic pipper?" (referring to the dive-bombing system of the F-4E). Most 469th aircrews couldn't recount the number of times they were asked to "pose" on the boom or on the wing of a tanker while the crew took pictures of a flight of four with those beautiful snarling snouts.



This is the AF/SD May 1970 cover that elicited all the comment—which increases our faith in our readership.

I don't intend to get into the great decalcomania debacle. The decision has been made and that's that. I have no way of knowing how much shark teeth or similar designs interfere with camouflage effectiveness. Similarly, "there ain't no way" to measure the effect that morale, pride, and *esprit* can have on a unit's combat mission. Unless you discover, as the 40th TFS did the night before deployment, "There is a way!"

My credentials? Maintenance Officer of the former 40th TFS and later Operations Officer of the 469th. I was also the GIF (guy in front) of F-4E number 268, on your May cover, who flew Keith Ferris across the Pacific.

LT. COL. PAUL J. LEMING, JR.
APO New York

Wing at Ubon ["Navigator's Log: Jack Armstrong to the Age of Aquarius and Beyond"]. I have been in the F-4 for six years and have felt from the outset that TAC made a grave error in putting pilots in the rear seat, but that is not why I am writing you.

In one paragraph you mentioned ". . . to the very first lieutenant to command an F-4 at Ubon." If this is the case, I must take issue with you.

If I may, I would like to quote you a few names and squadrons and their achievements. Some of us made it home, and I will mention those, too. Please keep in mind that these will not be all, by any means, but it will give you some idea, I hope, of the responsibility that lieutenants had in the 8th TFW, especially in late 1966.

The following are examples: Barry B. Bridger and Robert Gilchrist of the 497th, and John "Spike" Nasmyth of the 555th, all MIAs; Ed Collins, killed at Seymour Johnson AFB in 1969; Larry Glynn (MIG), Don Goza, and Ken Pastore of the 433d; Bill Van Petten, Dave Francis, Rod McGonagle, Ron Matei, and John Lewicki of the 497th; Jerry Jameison (MIA), Ralph Wetterhahn (MIG), Joe Hicks, John Deluca, Kenneth Eldrup, Peter Moeller, Tom Boyd, Frank Sabo, and myself, all of the 555th.

It was not at all unusual to have eight lieutenants in one flight of four and this was when we were going into Route Package VI [Hanoi-Haiphong area] every day. We were all flight leaders, we were all wingmen, and we did our job. I am sure, if you ask General Olds about some of these people, he will tell you they were a fine group of young, dedicated officers.

Again, I want to emphasize that this list of names was right off the top of my head as I sat at the typewriter. There were more. If for some reason I misinterpreted that paragraph of your fine article, please accept my apologies and my waste of your time.

CAPT. LOWELL A. GILBERT
APO New York

The author replies:

Captain Gilbert is absolutely right. The "very first lieutenant" I had in mind was Lt. Dick White, who was the *first officer of that rank to come directly from a replacement training unit* to Ubon to command the F-4. He was the first lieutenant to do so during my tour, and never had I heard that one had done so before, hence my error. I thought he was Ubon's first lieutenant AC *ever*.

Captain Gilbert's statement about eight lieutenants setting off for Hanoi in four F-4Ds is most enlightening. The bulk of the articles about the Vietnam Air War have stressed the relative maturity of the flyers involved.

MAJ. JOSEPH F. TUSO

For Enemies Only

Gentlemen: I feel an answer to Mr. Fain's letter in the August issue is urgently needed before this symbol business gets out of hand. I'm just as upset as he is about preemption of Churchill's "V for Victory" symbol and its currently reversed meaning, but I don't think he has the answer he thought he had. The original "V" came from England; so did I; and so — interestingly enough — does Mr. Fain's suggestion. It is, in fact, the traditional British equivalent of the American's raised middle finger!

Now perhaps this real meaning is what Mr. Fain has in mind when countering hippie slogans, but it would not be a suitable greeting for his friends or the general public!

MAJ. JONATHAN MYER
Tyndall AFB, Fla.

332d History

Gentlemen: I am searching for information pertaining to the 332d Fighter Group (62d Fighter Wing, Fifteenth Air Force), an all-Negro fighter unit stationed in Italy during World War II, for use in a future history.

I would appreciate help on the part of readers, and invite them to send any information and photographs to

BUSTER C. ST. JOHN
1219 Lincoln, Apt. 113
Alameda, Calif. 94501

• *Back in June 1968, we ran a letter from Donald W. Thorpe, 22301 Paraguay Dr., Saugus, Calif. 91350, also requesting material for a book on the 332d and Lt. Gen. Benjamin O. Davis, Jr. We do not know how Mr. Thorpe's venture turned out but he probably would be a good source of information.*—THE EDITORS

Earlier Version B-52

Gentlemen: I enjoy your magazine very much and was particularly interested in the article "Incident at Wurtsmith," by Maj. Robert M. Winn, in the August issue. Being employed at Tinker AFB in the B-52 Division of the Directorate of Materiel Management, we became aware of the plight of this particular aircraft and were investigating our support capability for the required repair parts even before it made its landing.

However, the aircraft involved was a B-52H model and the artist's illustration depicts an earlier, B- through F-type, configuration. The H differs visibly from these earlier configurations, having a shorter vertical fin, a one-piece nose radome, turbofan engines, and does not have the external drop tanks pictured.

I know this is nitpicking, and I don't think this small inaccuracy detracted from anyone's appreciation of the article and of Major Winn's skill. By the way, wasn't he awarded the DFC for this episode?

WAYNE J. HAILE
Norman, Okla.

• *Reader Haile is correct. As the story did not indicate the plane model, we simply used an illustration of "a B-52." For his extraordinary effort in saving the plane, Major Winn received the DFC, presented by Gen. Bruce K. Holloway, Commander in Chief, SAC. The other crewmen received the Air Medal.*—THE EDITORS

UNIT REUNIONS

Confederate Air Force

The Flying Museum of the Confederate Air Force will hold an air show on October 25, 1970, at Rebel Field, Harlingen, Tex. The CAF is a nonprofit organization dedicated to the preservation of World War II combat aircraft in flying condition. For further information contact

Headquarters, CAF
Rebel Field
Harlingen, Tex. 78550
Phone: (512) 425-1057

3d TAC Fighter Wing

The annual reunion of the 3d TFW and attached units will be held at the Hilton Hotel, Denver, Colo., on October 9, 10, and 11. Events for the reunion include tours of the USAF Academy and the AF-Tulane football game. Please include $10 with your reservation to cover expenses. Those interested should contact

Maj. Stan Schneider
Quarters 4413 A
or
Maj. Fred Wells
Quarters 4311 E
USAF Academy
Colorado 80840

20th Special Operations Sqdn.

The date's been changed! Originally scheduled for Oct. 23–24, the "Pony Express" helicopter pilots' reunion will be held October 31 in Washington, D.C. Contact

Maj. Bill McGuth
1st Helicopter Sqdn.
Andrews AFB, Md. 20331
Phone: (202) 981-5131
Autovon 858-5131

AIRPOWER IN THE NEWS

By Claude Witze
SENIOR EDITOR, AIR FORCE MAGAZINE

Who Said the Cold War Is Over?

WASHINGTON, D.C., SEPTEMBER 8

At the moment, the White House, the State Department, and Senator J. W. Fulbright of Arkansas are observing an unusual period of silence. President Nixon, acting, it is said, on the advice of his State Department, thought he had achieved a ninety-day cease-fire in the Middle East. It has collapsed because the Egyptians, acting under the aegis of the Russians, have violated another pact. Mr. Fulbright clearly is red-faced. Only about a week before the new crisis, and well after the real breach of the truce, the Senator declaimed that "the attitude of the Russians has altered in the last several months." And, that we have "become almost obsessed with the threat of the Russians, or what used to be called, and still is by some people, 'the international Communist conspiracy.'" Also, that there is doubt whether or not the Soviets have conspired to violate the truce terms in the Middle East. Mr. Fulbright said further that he trusts the Russians, who "sooner or later will recognize where their own interests lie."

The Chairman of the Senate Committee on Foreign Relations, who has been screaming for a long time about our increased foreign commitments, made these remarks in connection with a proposal of his own that the United States give a unilateral guarantee, spelled out in a defense treaty, to ensure Israel against future attack. This treaty, under the Fulbright plan, would be a sort of backstop to an earlier guarantee from the United Nations, which would keep "sizable military forces" at critical points on the Israeli border. His expressions of high confidence in Russian amiability were required, of course, when it was pointed out to him that the Russians would have to agree to such UN intervention. And that UN observers have been in the Middle East before, and were withdrawn at once when Egypt, prompted by Russia, demanded that they go.

All parties seem mystified because the Nixon truce plan came unglued in less than a third of its ninety-day planned life. Yet, as it was falling apart, The Institute of Strategic Studies in London announced that Soviet aid in the Middle East in the last year has raised Arab military strength to new highs. Israel, clearly, is facing a new military threat and one that would make another six-day victory, like that in 1967, impossible. Russia, the Institute report says, has built up its nuclear missile power almost to parity with the United States—a fact that Mr. Fulbright does not consider critical—and there are "marked imbalances" favoring the Communists in the size of forces deployed in Europe. The London study says Soviet military advisers in Egypt have increased from 4,000 to 10,000 in a year. Mr. Fulbright says "10,000 men is a relatively small number."

The impact of the Fulbright speech probably suffered from the fact that he delivered it in the midst of the Senate's long debate over the Fiscal 1971 Defense Authorization Bill. He made a good effort to put it across. The speech was written for delivery on the floor Monday, August 24. It was distributed to the press at a Fulbright press conference on Friday the 21st, for release in Sunday papers of August 23. That same day, the Senator arranged to appear on "Meet the Press" to display his idea and his erudition.

Senator Fulbright, long critical of executive branch actions in the field of foreign policy, has proposed a new defense agreement with Israel. He is convinced we have been too skeptical of Russian intentions.

So far as the Authorization Bill arguments are concerned, and they ran from July 23 to September 1, Administration foes put up a stiff front but did not score. The bill was passed, 84 to 5. In the long weeks of debate, the critics offered forty-eight amendments, most of them designed to cut the budget or force the Nixon Administration to take a new path to its established goals in Vietnam. Of the forty-eight amendments, only twenty-nine survived to face a vote. Of these twenty-nine, fifteen were defeated and fourteen were passed. *Not a dollar was cut from the Defense Authorization Bill.* The loudest critic and the wordiest one was Senator William Proxmire of Wisconsin, whose own cost-effectiveness can be questioned on the basis of his record. He offered seven amendments to the bill. Five were considered important enough to warrant a vote. All five were defeated. The Proxmire proposals took up countless pages in the *Congressional Record*, which means an equally countless number of Senatorial working hours. It is not evident that he accomplished anything. As a matter of fact, Mr. Fulbright did better. Four of his proposed amendments came to a vote and three of them were passed. Strangely, the one that lost, 87 to 7, sought to retain control in his Foreign Relations Committee over sales of military equipment to Israel. The Armed Services Committee, in reporting the bill, had added an unlimited authorization for such sales.

The three Fulbright amendments that were accepted are particularly interesting in view of the Chairman's Middle East proposal and his long insistence that the executive branch has too much leeway in setting foreign policy. One of them prohibits the payment of special combat or overseas pay to US allies in Southeast Asia which is higher than that received by US servicemen. A second prohibits financing of military operations by South Vietnamese or other allied nations' troops in support of the Cambodian or Laotian governments. The third authorizes the House and Senate Armed Services Committees and the Senate Foreign Relations Committee and the House Foreign Affairs Committee to have access to all private reports, studies, or investigations financed by federal funds except when the President exercises the right of executive privilege and forbids such access. If the last amendment survives, and it

could be eliminated in conference, it is almost sure to lead to future conflicts with the executive branch, as well as more differences between the Armed Services and Foreign Relations Committees.

During the entire debate, anti-Administration forces had help from the outside in their effort to mobilize votes. One source was the Military Spending Committee of Members of Congress for Peace Through Law (MCPL). Another is the Federation of American Scientists. According to *Newsweek*, some of these unilateral disarmament advocates are under investigation by the Attorney General. Regardless of their legal liabilities, their method of operating on Capitol Hill has not been impressive, as the final votes indicate.

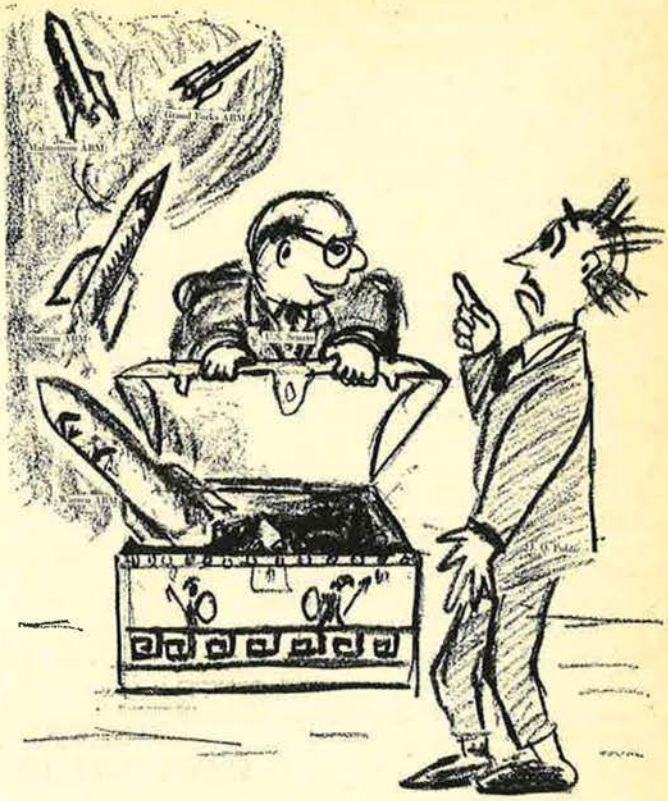
The Federation of American Scientists is headed by Dr. Herbert York, the first Director of Research and Engineering in the Department of Defense. His associates in FAS include Dr. Jerome Wiesner, Dr. George B. Kistiakowsky, and other scientists who served in government posts under other administrations. FAS now has an executive office in Washington, headed by Jeremy J. Stone, an advocate of arms control and author of *Containing the Arms Race*, a book advocating an end to the antiballistic missile program. The FAS effort is to achieve unilateral disarmament, first by stopping the ABM program. To do this, they have circulated in the Senate a series of handbills that appear to have been drawn by comic-book artists and aimed at the comic-book mentality. One example is reproduced on this page. To make sure they will not be overlooked, they were printed in the size of wall posters. If any senator took offense, he has held his tongue and voted for the ABM. At least one Senate aide, who did take offense, said, "They must think, because they are bigger, they are better." Votes were taken on three amendments designed to curb ABM. They lost, 33-62, 47-52 and 45-53. The opponents did better last year, without the FAS campaign. The 1969 vote was 49-51.

The Military Spending Committee, of which Senator Mark O. Hatfield of Oregon is chairman, faced a formidable foe in Arizona's Barry Goldwater, who analyzed their weighty report on the floor and took serious issue with their expertise. The committee had gone through our military requirements, system by system, and concluded it is possible to cut from $4.4 billion to $5.4 billion out of procurement and research spending. Senator Goldwater took on the report, item by item. He accused the ABM opponents of making a prophesy that would fulfill itself. They argued that since the US land-based deterrent missile force is vulnerable, it should not be defended.

The Military Spending Committee lists eleven Senate members. None of them is on the Armed Services Committee. It claims sixteen House members. Two of them are on Armed Services. Lacking official existence that grows out of legislation, MCPL operates from an office two blocks from the Capitol, where it has a professional staff. These people, it is reported, work as assistants, or consultants, to nine MCPL committees and meet frequently with congressional aides. The actual work appears to be done in the offices of Senators and Congressmen, by employees on the public payroll. The results are then put together by the MCPL staff and circulated. According to *Congressional Quarterly*, the 1971 MCPL budget is estimated at $250,000, met with a charge of $10 for dues and the bulk of the revenue from "private contributors." The *Quarterly* says MCPL has not published a formal membership list and that some members do not want it known they participate; "it might involve too much time explaining that MCPL is not some kind of radical or slightly questionable peace group."

There were some issues, such as those bearing on the war in Vietnam and Pentagon operations, where the critics

PANDORA'S BOX.



Don't Worry, We'll Call Them Back If We Get a SALT Agreement

This cartoon, printed as a poster, is typical of printed material distributed in the Senate by the Federation of American Scientists in its fight against funds for the ABM.

appeared to endorse what the Administration is doing but insisted they had a better way of doing it. One example came, again, from Senator Proxmire. He had harsh words to say about the Fitzhugh Blue Ribbon Panel Report that recommended many changes in Defense Department procurement and administration. One of the recommendations was that the Total Package Procurement program be abandoned in favor of a "fly before you buy" policy. Before the Fitzhugh report came out in late July, Defense Secretary Melvin Laird and his deputy, David Packard, already had made this change. Then, in the Authorization Bill debate, Mr. Proxmire appeared with an amendment that would require reports from the Pentagon on major weapon systems detailing the degree of compliance with the Fitzhugh recommendations for the abolition of total package procurement. The proposal came to a vote, but lost, 22-43.

In the debate on August 17, Mr. Proxmire pulled out all stops. The Pentagon opposed the amendment and the Senate Armed Forces Committee Chairman, Senator John Stennis, said his committee needs time to study the Fitzhugh program and, possibly, hold hearings on it. The Senator from Wisconsin was skeptical:

"What is really behind the opposition of the Pentagon to this minor amendment—this amendment merely calling for a report? I think I can tell Senators what is behind it.

" 'Fly before you buy' is a public relations gimmick and not a get tough policy.

"Last year it was the new 'milestone' buying policy

(Continued on following page)

which was going to cure overruns and procurement waste. This year they found a new name. Next year it will be another. 'Fly before you buy' is mostly eyewash. Its purpose is to lull us to sleep. It is designed to delay criticism. We are supposed to wait to see how it works out. That is what they said last year about 'milestone.' "

Senator Proxmire wound up this profundity with a rhetorical challenge:

"This refusal by the Pentagon to permit Congress to know whether 'fly before you buy' is in effect and the extent to which it is in effect raises very serious questions whether they really intend to put it into effect. Do they? If so, why not accept the amendment and tell us. Why not?"

Only three days after this outburst, David Packard gave a speech to defense contractors at a West Coast meeting. Part of it appears below.

Mr. Packard's audience, we have been assured, did not consider his message "eyewash," particularly when he told them there has been bad management. And, when he said "it won't help for Congress to legislate detailed and inflexible rules governing procurement."

A second major Proxmire effort to legislate rules was in an amendment requiring the Defense Department to comply with reporting requirements of the National Environmental Policy Act regarding the use of weapon systems and their effect on human environment. It also was defeated, 26 to 59. His proposal that limitations and conditions be fixed for use of a $200-million contingency fund for procurement of the C-5A aircraft lost, 30 to 48. A proposal that the authorized spending for military functions be cut by $5 billion, to $66 billion from $71 billion, was defeated, 31 to 42.

As the authorization bill was sent to conference with the House, where some changes will be made, it provided $19,242,889,000 for procurement, military research, and the Safeguard ABM system. Just before final passage, the Senate debated the issue of withdrawal from Vietnam and rejected, 39-55, an amendment that would have set a deadline of December 31, 1971, for withdrawal of all US troops.

The $19.2 billion approved for Fiscal 1971 is $1.3 billion less than the House had approved. It also is lower than the $20.7 billion authorized by Congress and the $19.3 billion appropriated in 1969.

Air Force procurement is authorized for only 375 planes, the lowest number since 1935, and over half of these are for our allies, not USAF. In the research and development area, the request for funds for the B-1 advanced bomber was cut by the committee from $100 million to $50 million, although there remains a $65 million

STERN TALK FROM THE PENTAGON

One of the hardest-hitting speeches ever delivered to industry by a Pentagon official was delivered in Los Angeles, on August 20. Here are some highlights of what Deputy Defense Secretary David Packard, himself a former industry executive, told the Armed Forces Management Association:

Let's face it—the fact is that there has been bad management of many Defense programs in the past. We spend billions of the taxpayers' dollars; sometimes we spend it badly. Part of this is due to basic uncertainties in the Defense business. Some uncertainties will always exist. However, most of it has been due to bad management, both in the Department of Defense and in the Defense industry. We can and are doing something about that. I am not talking just about cost overruns as so many of our critics do. Overruns are the end product of our mistakes rather than the key issue to be addressed. I am surprised that our critics took so long to discover cost overruns. They have been around for a long time, and many of the cost overruns that receive the most publicity were organized by Defense and industry years ago. We are now paying the price for mistakes in contracting, in development, and in management.

Frankly, in Defense procurement, we have a real mess on our hands, and the question you and I have to face up to is what are we going to do to clean it up.

Let me first mention two things that won't help.

It won't help for Congress to legislate detailed and inflexible rules governing procurement.

Nor will it help to put the General Accounting Office in the process of making management decisions. The GAO deserves the highest marks for auditing, but the talents of a good auditor are not identical with those of a good manager.

The pressures are strong to insert the Congress and its right arm, the GAO, into the details of day-to-day management decisions in the Department of Defense. Until we in the Department and you in Defense industry demonstrate that we can provide capable and efficient management, these pressures will continue. . . .

The most frustrating thing is that we know how we ought to manage, and we refuse to change based on what we know. Every time we want something done in a hurry and want it done right, we have to take the project out of the system. We give a good man direction and authority and let him go—and it works. When we needed sensors in a hurry for Vietnam, we got the best man we could find—General Starbird—gave him all the authority he needed and told him to produce—and he did. And I don't know why anybody would be surprised. His successor, General Lavelle, has had the same authority, has consistently returned money from his budget, has done all the management things that people say you are supposed to do, and meets every requirement—financial, managerial, or operational—that we could want. Industry does the same thing. The "Skunk Works" in Lockheed has had tough, complex, expensive, and demanding programs. Kelly Johnson produces.

On the other hand, when we are not in a hurry to get things done right, we overorganize, overman, overspend, and under accomplish. The most dramatic contrast is within Lockheed. Kelly Johnson and his programs, and the Air Force and Lockheed on the C-5A. I simply cannot understand why we are unable to change the system to avoid the C-5As and get more Skunk Works. We must find a way to do this job right, and you bear as much responsibility as I do.

We need good people—and by that I mean you—who will step up to their responsibilities. That is what decentralization is all about.

In the hope you would do this, on May 28 I issued a memorandum of guidelines for Major Weapons System Acquisition. There is nothing in this memorandum that you don't already know. As a matter of fact, the management principles in my memorandum are so simple that

pot approved last year and not obligated for the project.

In view of what is happening in the Mideast and the blows suffered by the gurus of détente with the movement of Soviet SAM missiles into the Suez in violation of the truce, it is difficult to believe the proponents of unilateral disarmament can maintain the pressure. Statistics from The Institute for Strategic Studies support this view. If we fail to prevail in the Middle East there will be many explanations offered. One of them is that nuclear parity has replaced US superiority and the cold war continues.

Job Description

Recently we came across the following description of the Chairman of the Senate Foreign Relations Committee:

". . . This succession was unfortunate, for [he] lacked finesse, leadership ability, and the capacity for teamwork. He was a provincial orator, a showman, and a shallow thinker with supreme confidence in his own store of superficial answers to complicated problems. An expert at detecting the slightest flaw in an opponent's argument, [he] was singularly incapable of proposing workable plans of his own. In the Senate, as his party's spokesman on foreign policy he often worked at cross purposes with the Administration and, in some respects, even failed to give the uncompromising isolationists proper direction. . . . The Senator insisted on judging each situation in the light of his unique knowledge and insight. He boasted that he had his own sources of information, independent of official channels, but these newspaper and personal contacts were often spotty and inaccurate. . . . To say the least, the State Department found such a man difficult to work with and almost impossible to convince. [His] periodic outbursts of eloquence were especially perturbing. He had the knack of choosing an embarrassing moment in which to make a speech on foreign policy that would be quoted, in and out of context, far beyond the water's edge. . . . He seldom used these speeches to help the Administration implement its policies. As Chairman of the Senate Foreign Relations Committee, he thought of himself as a watchdog to keep tabs on the President and the State Department. In one respect the Senator was always undeviating—he was adamant against any peace plan that involved the use of force. He was utterly impervious to the fact that the wealth, power, and far-flung interests of the United States involved a responsibility for world peace over and above inflated words and good intentions."—(Senator William E. Borah, as described by Selig Adler in *The Isolationist Impulse*, Collier Books, 1961, pp. 160-161.)

—END

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anyone who could not have written the memorandum himself doesn't belong in management. Again and again I have made a big point about getting the right man in the right job and giving him authority. But it is just not that simple. Admiral Rickover is a good example. The Admiral is a man of considerable capability. He has his own style, but he produces. He got a program, had to fight the system tooth and nail to get it, challenges the system every chance he gets, but is still saddled with the system. I had a long talk with him after the May 28 memorandum was published, and it was clear that I hadn't taught him anything about management. He told me that the principles were great but that if we couldn't get to the system that sits on top of the manager, nothing else mattered. He is right.

I know Secretary Laird and I bear the responsibility for the system in the Department of Defense, and I am going to keep working at it. But you in industry bear a similar responsibility, and I expect you to do the same thing.

In my memo I told the Services to select people with the right background and education for management, give them appropriate training, give them recognition, and leave them on the job long enough to get something done.

All four Services have accepted my recommendations—and their letters say that they agree. But on at least two occasions they have taken actions exactly contrary to those suggested. The Air Force and the Navy are both involved. In one case, a small dedicated Air Force team developed the gunships which have been so successful in Vietnam. The Air Force decided to put this program into its formal system. About a month ago I asked when we would be able to get some more gunships. The answer was in two years. That program is now out of the Air Force system, and we will have more gunships in six months.

In the other case the Navy, shortly after agreeing that a good manager should be kept on the job long enough to get it done right, proceeded to promote a key manager at a critical time from an important program to another assignment. The system wins and the cause of good management loses.

In my memo I talked about policies for development of new weapon systems. The lesson that comes through loud and clear here is we should buy *only* what we need—not systems you or anyone else thinks they can develop to do something that doesn't need to be done. The Defense Department has been led down the garden path for years on sophisticated systems that you promised would do all kinds of things for some optimistic cost. Too frequently we have been wrong in listening to you, and more frequently you have been unable to deliver on either of these promises—what it would do or what it would cost. And we in the past have sometimes been guilty of overoptimism on our cost estimates and overdemanding in our requirements. We share the blame together, but the mistakes of the past cannot be repeated if we are to provide for the nation's defenses in today's climate of a critical public and a critical Congress. We are going to buy only things that we need, and we are going to make sure they work before we buy. The same thought carries over into full-scale development and production. We must know what we are going to do and how to do it before we go into production. We are not going to put things into development until we are sure we need them, and we are not going to put things into production until we are sure that they work. . . .

It is you people here tonight and the Department of Defense that must take action to solve these problems. . . . Many times we have done a bad job—we are going to do a better one. We are going to know what we are doing before we do it, and we are going to manage it better. We have a lot of obstacles in front of us and some of them we created ourselves. We have given our critics the opportunity to find us at fault, and we run the danger that their efforts to direct Defense management will just compound the mistakes in the Department. We don't need more supervision and more people in the act. We need fewer people. The system in the Department of Defense is going to change. Secretary Laird and I are going to demand it. I expect you who are here tonight and everyone else who does business with the Department of Defense to do the same. That is all I have to say.

LETTER FROM EUROPE

By Stefan Geisenheyner
AIR FORCE MAGAZINE EDITOR FOR EUROPE

Training the Harrier Pilots

Since May of last year, the Harrier Conversion Unit of the Royal Air Force's Support Command at RAF Wittering has been retraining fighter-bomber pilots to operate the world's first V/STOL ground-attack aircraft, the Hawker-Siddeley Harrier GR.Mk 1. The RAF has been able to introduce this complex and revolutionary aircraft into front-line service with a minimum of problems by using long-established conversion training organizations and procedures. The Harrier is relatively simple to fly under all conditions and learning VTOL procedures does not pose any serious problems to the experienced, service-trained fighter-bomber pilot.

So far, all pilots have previously been flying Hawker-Siddeley Hunter ground-attack aircraft. The characteristics of the Harrier in conventional flight resemble, to a degree, those of the Hunter. It is planned, therefore, to first send pilots slated to fly the Harrier, and who do not have any ground attack or Hunter experience, to the Hunter Operational Conversion Unit. The pilots will also complete a short course in elementary helicopter handling at RAF's Central Flying School, before commencing their V/STOL conversion.

The Harrier course lasts three months, and is divided into two phases: the actual conversion training, and VTOL combat training. In the first phase, pilots learn how to handle the aircraft on the ground and in the air, and familiarize themselves with the new techniques of flying a VTOL combat aircraft. Conversion training follows a set pattern.

After lectures on the aircraft and its systems, future VTOL pilots practice ground-handling procedures. The Harrier is equipped with nosewheel steering and toe brakes. In this respect it differs from any other single-seat aircraft in the RAF inventory. In the next phase of training, the pilots do high-speed taxiing and practice stopping the aircraft by rotating the four lift/thrust nozzles of the Rolls-Royce Pegasus engine to a forward angle of some twenty degrees, thereby reversing the engine's thrust direction.

Takeoffs, conventional flying, and landing comprise the next stage of the conversion phase. It has become standard procedure for the instructor to fly close formation with the student in a Hunter, noting the novice's performance and passing advice and instructions via radio. Since there is no training device or transitional procedure for teaching VTOL flying, the student pilot goes straight from conventional flight to vertical takeoff, hover, and landing maneuvers. The instructor pilot sits in a mobile greenhouse close to the runway, where he can observe the performance of his pupil and give instructions and advice by radio. The students find, generally to their surprise, that the Harrier is more stable in the hover mode than is the average helicopter. The reaction jets, in the wingtips for roll stabilization, in the tail for yaw, and in the nose and tail for pitch stabilization, give very precise control over the aircraft's movements.

The next steps are practicing the transition from hover to conventional flight, the use of the rotating nozzles for braking in the air, and finally the transition from conventional flight to hover and the descent to land. The course continues with short takeoffs and jump starts, formation flying, handling the aircraft at supersonic speeds, and aerobatics. Finally, takeoffs and landings are made on fifty-foot-long aluminum matting in woodland clearings and in the open country. Full proficiency in this type of flying concludes the first part of the course.

The second phase—VTOL combat training—is devoted to mastering the Inertial Navigation and Attack System (INAS). According to RAF sources, INAS is the most complex system of its kind in any single-seat fighter-bomber flying today. It provides the pilot precise navigational information, does his fuel housekeeping, and feeds him information for weapon delivery. On this Ferranti-built system depends the true military value of the Harrier.

The RAF presently has seventy-seven Harriers on order, of which an undisclosed number have already been delivered. In addition, thirteen two-seat trainers are due for delivery in the coming months. The first of the two-seaters joined the conversion training unit in August of this year. Previously, all training had been performed on single-seat Harriers as described above. The arrival of the two-seaters, designated Harrier T.Mk 2, opens up new prospects for more efficient training procedures. It will allow young pilots fresh from the Central Flying School to start their operational flying in Harriers with an instructor pilot on board.

It speaks well for the docility of the Harrier over the whole range of its flight envelope that not a single aircraft was lost in the past year's training and conversion activity due to pilot error. The introduction of the T.Mk

(Continued on page 23)

The program for training pilots to fly Britain's V/STOL Harrier is broken down into two phases: the actual conversion training, which follows a set pattern, and V/STOL combat training, which requires the application of new flying techniques.

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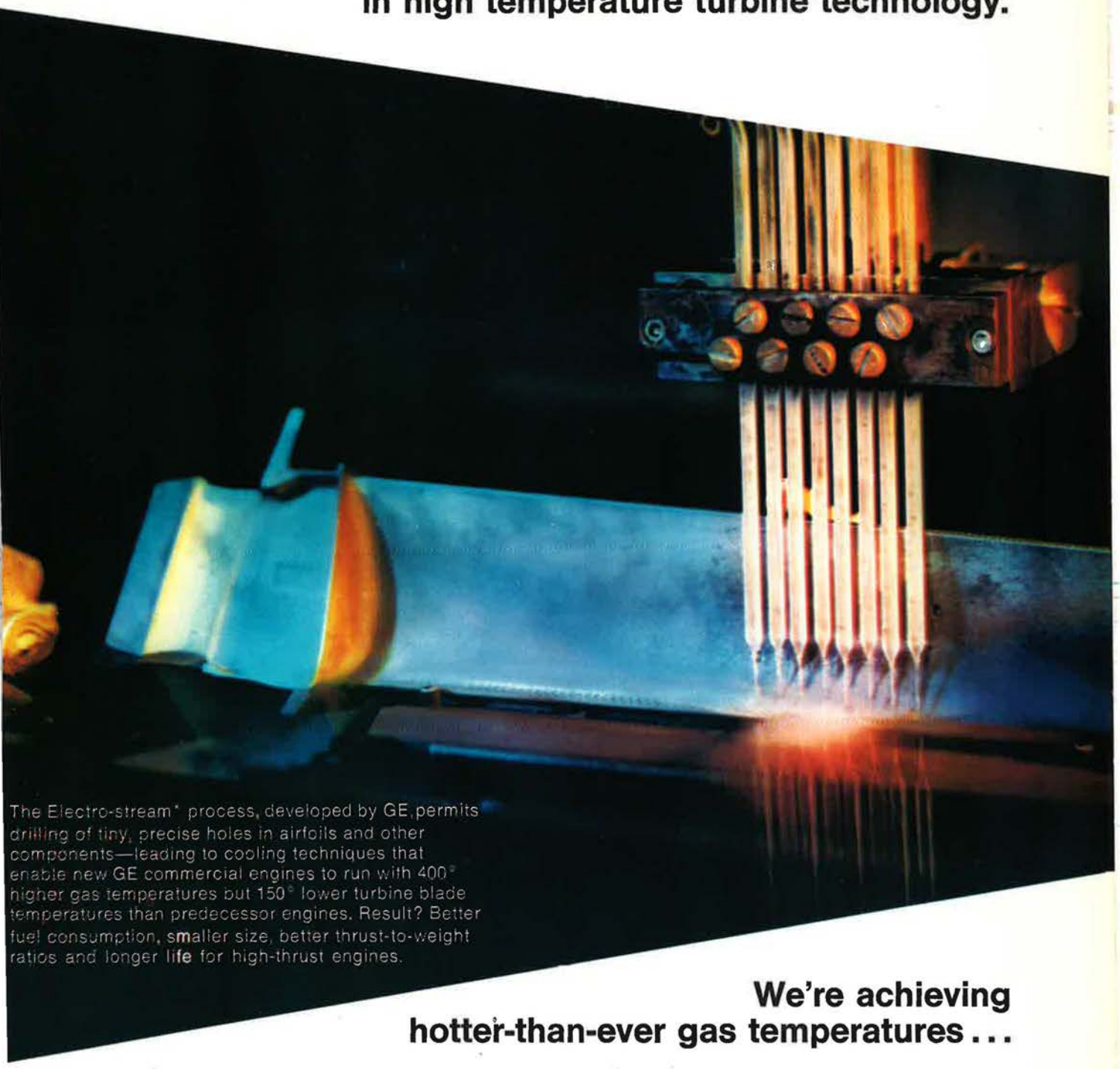

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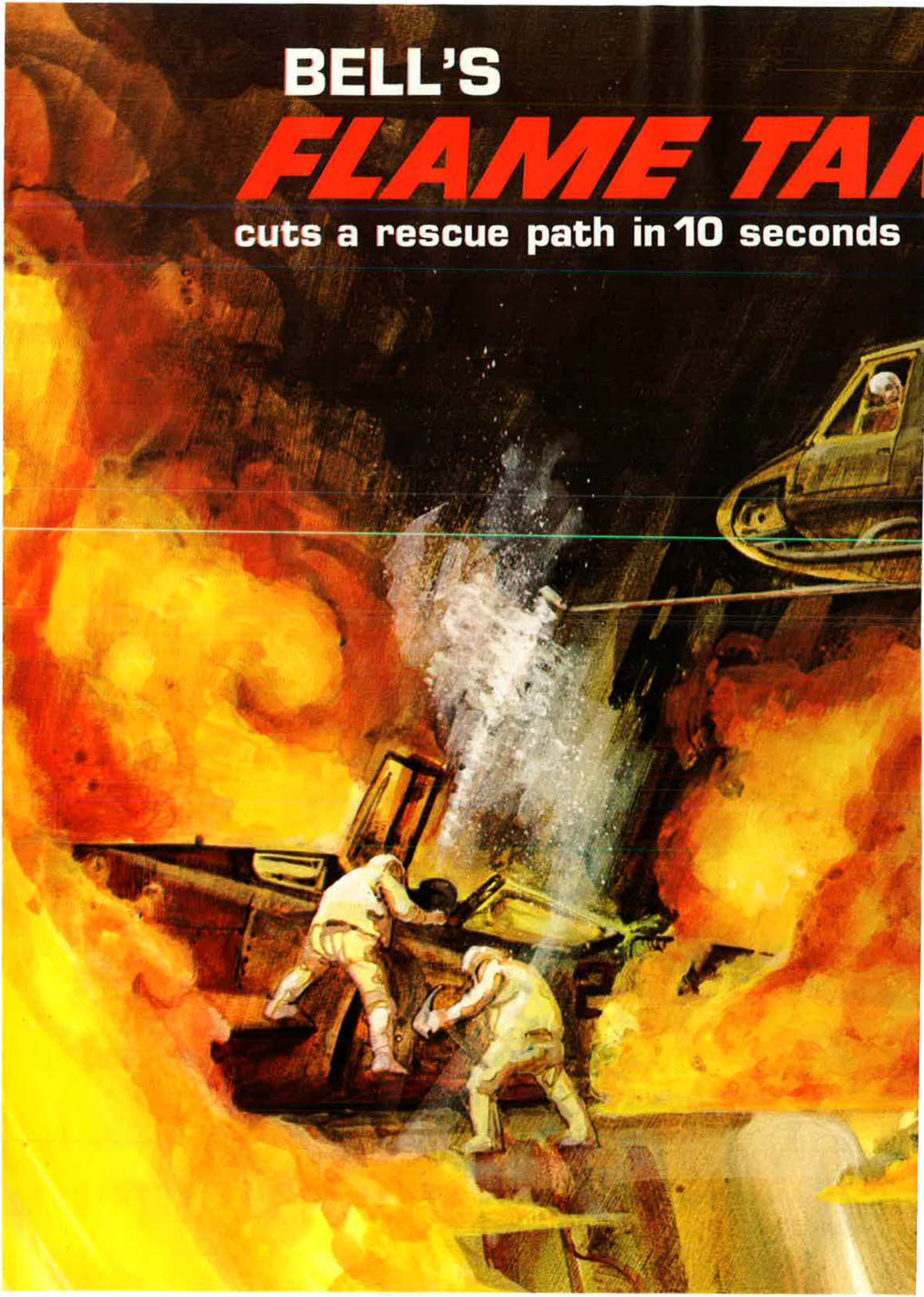
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The McDonnell Douglas DC-10, a multi-range, high performance luxury jetliner, will carry as many as 345 passengers at speeds in excess of 600 mph. The wide-bodied tri-jet is powered by three General Electric CF-6 turbofans developing more than 120,000 lbs. of thrust. Each of these engines is equipped with a main fuel pump engineered and precision-produced by Chandler Evans.

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2 will lower the risk even further. This aircraft has retained the full capability and combat performance of its single-seat counterpart. It can, therefore, be used on combat missions where a navigator in the back seat is mandatory, *i.e.,* for the operation of missile systems or ECM gear.

The US Marines ordered twelve Harriers of the more powerful Mk 50 version for evaluation purposes, and are presently asking for permission to introduce the aircraft on a large scale. McDonnell Douglas would produce the aircraft in the US under license. It can be assumed that the Marines will pattern their conversion training system on RAF procedures. One of the favorite instructors at Wittering is Maj. Jacob E. Iles, USMC.

MRCA Enters Preproduction Phase

Europe's multirole combat aircraft (MRCA) under development at Panavia GmbH, a Munich-based consortium supported jointly by Britain, Germany, and Italy, passed a major milestone in its turbulent history in July. The project, now known as Panavia-200, received the go-ahead for its preproduction phase from the German government. This mid-July announcement was followed closely by a similar declaration of the British government. The final decision of the Italians is still pending because of nationwide labor problems that caused the resignation of the Cabinet. Germany and Britain made it clear that, if Italy should decide not to participate, the project will be continued on a bilateral basis.

These statements were greeted with satisfaction by industry, after several months of uncertainty about the future of the program. In those months, Germany had cut its originally intended order of 600 aircraft by one-third, the one-seater version of the design was canceled, and reports from semiofficial circles suggested that the program would be dropped altogether.

The project definition phase of the Panavia-200 was concluded earlier this year, and the long-range planners of the three air forces were given ample time to scrutinize the aircraft's capabilities and to make final additions to their requirements before the design was frozen. There was, however, little doubt that the project would be fully endorsed by the military, who had collaborated extensively in the design studies. Serious problems were expected only on political and financial levels. For instance, one of the basic conditions of the lawmakers that had to be met by the designers was that the fly-away price of the new aircraft should be less than that of the McDonnell Douglas Phantom. This demand has been met, if Panavia can actually produce the fighter at the currently quoted, very low price of $5 million a copy. That sum includes the system's ground equipment, spares, and training expenditures.

Some serious design problems were encountered because the Germans want Panavia-200 to be a close-support, STOL fighter-bomber, featuring a high combat load and a relatively small radius of action. The supporters of a long-range strike fighter version were told by the German government that the introduction of such an aircraft could provoke serious political consequences. The USSR would read aggressive intentions into the Luftwaffe's acquisition of this type, which in turn might disturb Germany's policy of détente with Russia.

On the other hand, Britain needs a long-range strike fighter with nuclear capability, and Italy desires a long-range interceptor with good loiter time. The designers seem to have achieved the impossible. Panavia-200 consists now of a basic airframe that is adaptable for all the roles the three air forces expect the aircraft to fulfill. Seventy to eighty percent of the fighter's components are common to all versions. One of the major differences between the Luftwaffe and the RAF versions is the wing. The RAF wing interior is utilized as a fuel tank, giving the desired long range. The Luftwaffe wing is dry, lowering vulnerability in the close-support role and giving a high payload at shorter range.

Panavia-200 is a supersonic, two seat, swingwing aircraft in the 35,000- to 40,000-pound class. It is smaller than the Phantom. The aircraft is powered by two still-to-be-developed Rolls-Royce three-spool turbofans. The size of the fighter and its projected performance figures are still classified and the available data are not final. Due to its multirole configuration, the aircraft possesses the best attributes of an interceptor, fighter-bomber, and close-support aircraft. Its projected takeoff and landing performance is supposedly spectacular, and can be classed in the true STOL category. Maneuverability, high- and low-speed performance, and survivability in a hostile environment are rated as excellent by the Luftwaffe's experts. The various versions to be built for the three air forces are to be equipped with the most advanced avionics, including navigation and attack systems, digital computers, terrain-following radar, and the latest ECM gear. All versions will carry guns as integral armament. Both adaptations of older missiles and new developments are under way, to give the aircraft the maximum conventional hitting power envisioned necessary for use in the late 1970s and the 1980s, when the fighter joins front-line squadrons.

After the conclusion of the project definition phase early this year, the July '70 go-ahead order of the British

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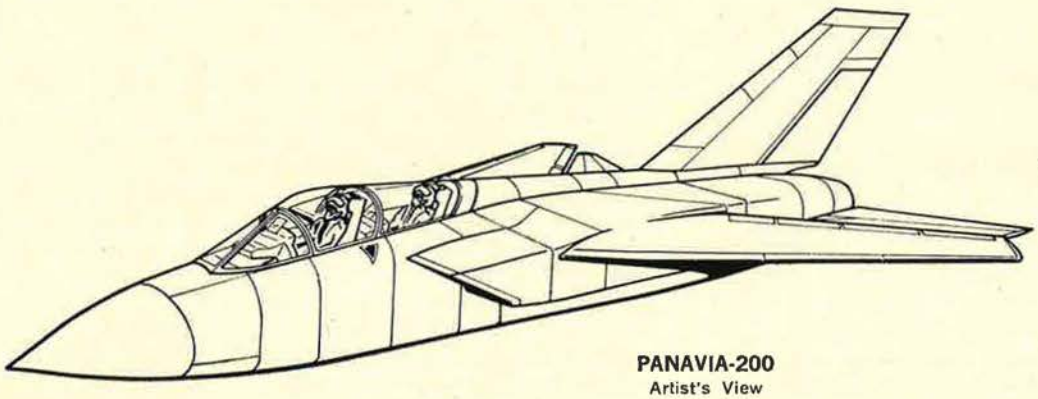


PANAVIA-200
Artist's View

Europe's multirole combat aircraft, now known as the Panavia-200, is being designed as a two-seat, swingwing aircraft with supersonic capability. Italy, Germany, and Great Britain have been jointly involved in the aircraft's design and manufacture.

and German governments pertains to the first major development phase covering the construction of seven preproduction aircraft and their test flying. Several additional airframes are to be constructed, for use in static ground and fatigue testing. No data are available on the time-planning of the project, but it can be assumed that the maiden flight of the Panavia-200 is scheduled for late 1973 or early '74.

This date, however, depends on the availability of the Rb 199 engine. Its construction and testing is a separate major undertaking. The engine is, in the full sense of the word, an *advanced* turbofan. Its three-spool layout promises hitherto unheard-of efficiency, and it is the world's first engine of its kind built for military and supersonic application. Rolls-Royce could gather some experience in this field during the construction of the three-spool Rb 211, slated for the Lockheed TriStar airbus, but up to now little actual operating experience could be collected on this revolutionary engine. Thus, the development of the Rb 199 is a high-risk venture, on which hinges to a large degree the success or failure of the Panavia-200. There is, however, no reason to doubt that Rolls-Royce can build the engine. The question is whether it can be done in the estimated budget frame or not.

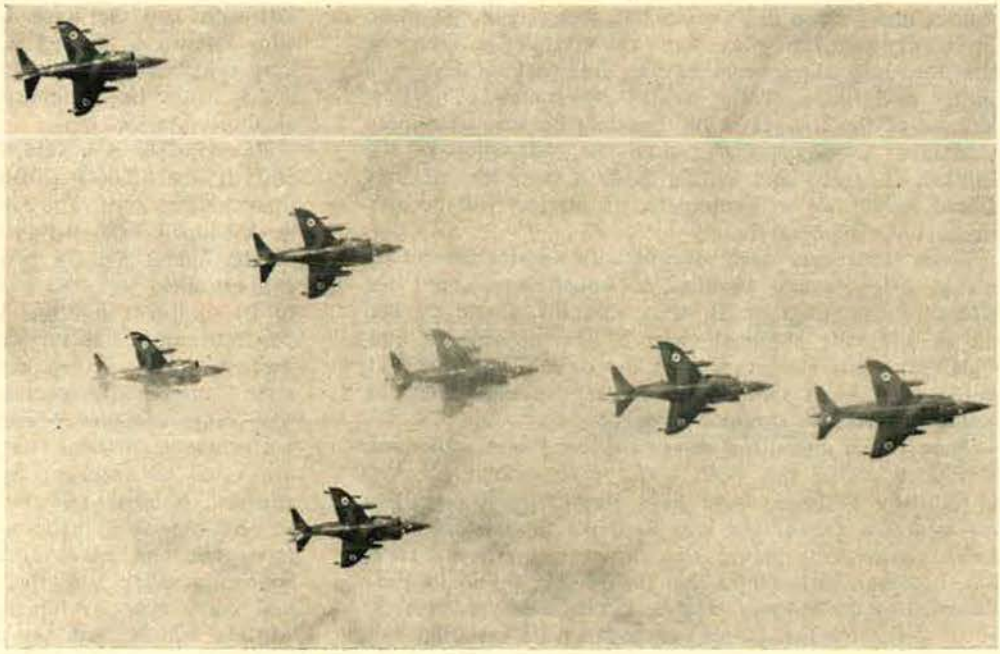
If the political climate does not change radically by 1975, or new developments in weaponry make the aircraft's concept obsolete, it can be safely assumed that the Panavia-200 will be ordered in quantity by Germany and Britain. On the assumption that Italy decides to continue its participation in the program, the presently estimated requirements of the three nations would be about 900 aircraft. The RAF wants about 350–400, Germany 400-plus, and Italy approximately 100–150 aircraft.

Costs of the program will be shared by the partners, according to the numbers of aircraft bought. The expected cost of the first development phase, leading to the flight of the first prototype, is estimated at $600 million.

The members of the Panavia consortium are British Aircraft Corporation, Messerschmitt-Bölkow-Blohm, and Fiat. The three companies cooperate closely with the engine manufacturers who formed the Turbo-Union Group. The latter consists of Rolls-Royce, Motoren/Turbinen Union, and Fiat. The managers of these industrial consortia are sure that the Panavia-200, and the Rb 199 as well, will become major export successes for Europe. In its weight class, the Panavia-200 does not have a real competitor anywhere. At present, with the possible exclusion of France, no known plans exist for another aircraft of this type.

But before the fighter goes into mass production, there are still some troubled waters to be negotiated. This holds true in particular for German participation. By 1975, the Luftwaffe's F-104G Starfighter fleet will have reached the end of its operational lifespan and the G.91 fighter-bomber will be totally obsolete. A replacement for both aircraft becomes mandatory. The Panavia-200, originally conceived to take the place of these fighters in 1975, will not be ready before 1977 at the earliest. Thus, an interim aircraft has to be bought to fill the gap in the Luftwaffe's inventory for four to five years. Two designs are under consideration at the moment. They are a simplified, one-seat, McDonnell Douglas Phantom and a new design by Lockheed—the CL-1200, which is a thoroughly modernized and remodeled Starfighter.

The Luftwaffe is, however, very reluctant to sink major funding into the purchase of these or similar aircraft because the sums will not be available later when the time comes to acquire larger numbers of the Panavia-200. The introduction of an interim fighter cannot be avoided, however, and this fact leads to speculation by knowledgeable circles that Germany eventually will be unable to buy more than 250 Panavia-200s. This problem does not exist in Britain or Italy, whose air forces were modernized recently by the introduction of sizable numbers of Phantom F-4Ks and F-104s, respectively. These aircraft will serve well until the new European multirole fighter becomes available.—END



Harrier fighters of the Royal Air Force's No. 1 Squadron fly in formation. Ten of the aircraft recently took part in an operational workout during an exercise in Cyprus. It was the largest number of the aircraft yet to go abroad. Deployed to the Med, they successfully demonstrated their multirole capability.

AIRMAN'S BOOKSHELF

Behind the Scenes in Nazi Germany

Inside the Third Reich, Memoirs by Albert Speer. Macmillan, New York, 1970. 596 pages with chapter notes and index. $12.50.

For a deeper understanding of the murderous lunacy that was Hitler's Germany, this is an indispensable and fascinating book. Albert Speer, a young and ambitious architect of respectable upper-middle-class origins, was attracted by the charisma of Adolf Hitler. He made his way into the Nazi inner circle, first as the Fuehrer's personal architect, drawing up grandiose schemes for cities and palaces that would dramatize the Reich that was to last a thousand years, and eventually as Minister of Armaments in wartime Germany. In that post, often tangling with the incredible party bureaucracy, he directed the massive industrial support of the German war machine. He was loyal to Hitler almost to the last, but gradually developed inner doubts about the morality and sense of what he was doing. However, only toward the end—when he saw clearly that Hitler, as defeat approached, intended, by ordering total destruction of Germany's remaining industrial capacity, to destroy the German people along with his execrable regime—did Speer defy his chief. He managed to prevent the execution of Hitler's scorched-earth ideas.

At Nuremberg, Speer freely acknowledged his guilt as a leading member of the Nazi leadership. For his complicity in forced-labor policies, he was sentenced to twenty years, all of which he served. He put together a first draft of his book in Spandau Prison and, after his release in 1966, completed the massive work.

The book is rich in detail about Hitler, Mephistopheles to Speer's all-too-willing Faust. A frustrated architect himself, Hitler had the worst of taste and Speer was willing to design to that taste. Speer confirms with innumerable anecdotes that Hitler was virtually devoid of normal human feeling. Yet he was endowed with a malignantly powerful personality that, twenty-five years after his theatrical suicide, is still haunting. But as large as Hitler looms in Speer's memoirs, it is primarily of himself and his own role, of which he came to be deeply ashamed, that the now elderly ex-Minister writes. He excoriates himself for his technocratic passion, for looking away from evil until, for his country and for himself, it was too late.

Nazi Germany, Speer writes, was the first civilized society to put modern technology to work in the business of enslavement, aggression, and mass murder. For the zealots of left and right in our own time, there is a terrible lesson here. Speer's statement merits the attention of not only those old enough to remember but also of those too young to remember but wise enough to learn.

—Reviewed by William Leavitt, AF/SD Senior Editor for Science and Education.

Prologue for a Proconsul

The Years of MacArthur: Volume I, 1880–1941, by D. Clayton James. Houghton Mifflin Company, Boston, 1970. 740 pages with index and bibliographical note. $12.50.

One of the most controversial figures in modern American military history was Douglas MacArthur. Since 1942, there have been more than twenty full-length books on this famous American. Despite the abundance of writings on MacArthur, many questions about the early years of his life and "what made him tick" have been left unanswered. D. Clayton James, Associate Professor of History at Mississippi State University, in the first volume of a projected two-volume study of MacArthur, attempts to answer some of these questions.

Douglas MacArthur emerges from Professor James's book as a Herbert Hoover-type conservative believing in the values of rugged individualism and equality of opportunity. Although James alludes to the fact that MacArthur was a very complex man, he believes that one can best understand MacArthur by realizing that the most common thread running through his forty-two years of military service was his dedication to duty, honor, and country. In this sense, James concludes, "MacArthur was a veritable incarnation of the spirit of West Point." According to the author, this explains both MacArthur's greatness and weakness.

To write a biography and to be objective is almost impossible; to write one on Douglas MacArthur and be impartial *is* impossible. However, Professor James has made an admirable attempt to be objective, and in more than one instance reveals MacArthur as an "overzealous, overconfident, and unjustified optimist." He has done an outstanding job of research—studying thousands of letters and directives, interviewing and corresponding with MacArthur's contemporaries. The book is well documented (sixty-four pages of footnotes, most of them primary-source letters and interviews), and includes a comprehensive bibliographical note. There are also thirty-two illustrations and ten maps, mostly of World War I campaigns.

The story begins with MacArthur's early boyhood days and the emergence of his mother as the dominating figure in his life, and ends with MacArthur in the Philippine Islands just prior to United States involvement in World War II. In between these two episodes MacArthur's days as a soldier in World War I, Superintendent of West Point, and as the Army Chief of Staff, are comprehensively related. The story flows easily and is full of vignettes and anecdotes. In short, the book is easy and interesting reading.

This is the most scholarly, definitive, and interesting work written on MacArthur. All others will have to take a subordinate seat. If Volume II is as good as Volume I, the engima of Douglas MacArthur may at last be solved.

—Reviewed by Maj. Donald M. Goldstein, Assistant Professor of History, US Air Force Academy.

Marines Land—On MIC

Militarism, U.S.A., by Col. James A. Donovan, USMC (Ret.). Foreword by Gen. David M. Shoup, USMC (Ret.). Charles Scribner's Sons, New York, 1970. 236 pages. Indexed. $6.95.

There is something more than a little depressing about the fact that, here in 1970, with the military under fire from the halls of Montezuma to the shores of Tripoli, the ammunition is being passed, Praise the Lord, by a couple of renegade Marines. Neither Colonel Donovan nor his

(Continued on following page)

patron, General Shoup, have got anything basically new to add to the arsenal of the New Left. All of their facts and their misrepresentations have been spouted before in the press, in the halls of Congress, and from the political hustings. Many people hold these convictions, from Senator William Proxmire to the screaming kooks who turned the last Democratic National Convention into a riot, but few attribute motivations so loosely. One of these men wore four stars on his shoulder and the other a colonel's birds. And they were motivated, according to their own yardstick, by "defense-establishment careers, defense industry profits, fascination with military technology and weapons of destruction—and a national pride and competitive spirit."

That is not all. Again, by their own yardstick, they had "vested interests in their respective functions and careers" and thrived "upon a large and busy defense establishment." They were spurred by profit-motivated interests and the fascination of new weapon systems "frequently independent of any valid defense requirements." Like the Proxmires and the kooks, they believe the Pentagon dominates all other government interests and that this can be proved by examining the federal budget. (This simply is not true, as Robert C. Moot, the Pentagon Comptroller, has demonstrated in the September issue of this magazine.)

There is no reason or requirement to review here all of the assertions made by these retired Leathernecks. Suffice it to say that their insistence on villainy or conspiracy of some kind leaves them with a gap in both credibility and professional respectability. Colonel Donovan has an entire chapter on "The Great Bombing Hoax" that demonstrates only his lack of access to records, now in the vaults of the Pentagon, which attest to the bungling of airpower's application in North Vietnam. It was civilian bungling, not military, and some day the documentation will come to light.

Of all the things that are wrong with this book, the most incredible is the mention of Gen. Wallace M. Greene, Jr., on page 68. General Greene succeeded General Shoup as Commandant of the Marine Corps in 1964 and was associated with him for many years. Colonel Donovan worked for General Greene at the headquarters. In his book, he can't spell the man's name right.

—Reviewed by Claude Witze, AF/SD Senior Editor.

A Kohler View of the Cold War

Understanding the Russians: A Citizen's Primer, by Foy D. Kohler. Harper & Row, New York, 1970. 441 pages. $10.00.

Foy D. Kohler's "citizen's primer" is the equivalent of an introductory course on Russia laced with the author's observations and insights gleaned from long study of that country and its people, including almost seven years in Moscow. Mr. Kohler, who served as American Ambassador to the USSR during 1962–1966, has written a broad survey that is clearly not intended for the specialists.

To understand the Soviet Union today, observes Ambassador Kohler, one must appreciate both its history and harsh physical environment. Lenin used Marx only as a springboard to make a revolution and Mr. Kohler can't remember even one instance when a Soviet official or citizen quoted Marx to him—but Lenin, most certainly!

Not unexpectedly, Kohler's view of the evolution of Soviet history and foreign policy is orthodox, following the major lines of America's foreign policy toward the Soviet Union. He brushes off the contemporary American revisionist thesis, which holds that the US was at least as responsible for the cold war as the Russians. American imperialism is a myth and the tragedy of the first forty years of this century was rather that the US retreated into isolationism. The basic weakness in the revisionist argument is the lack of understanding of the nature of the Soviet system.

According to Kohler, Stalin was every bit the beast we always thought he was—cold, a manipulator, and a master organizer of the Communist Party machinery. Premier Khrushchev is best described by the Russian adjective *Khitryi,* meaning wily, unscrupulous, and, above all, opportunistic. And now, as an ex-Premier in retirement in the peculiar Soviet twilight zone reserved for former top officials who are not without a shade of disgrace (as are all *former* Soviet poobahs), Khrushchev is aptly termed an "unperson."

Kohler comes down hard on FDR, arguing that "his arrogant confidence" betrayed him into believing he could handle all international problems without even consulting his Secretary of State. This is not exactly the kind of operation which impresses a former career diplomat turned writer and professor.

As far as Vietnam is concerned, he feels that the US was manifestly correct in intervening, but we started intense "Vietnamization" ten years late and we did a poor job in "public administration." Although Kohler declares flatly that foreign policy begins at home, he has nothing to say about the domestic implications of the Vietnam War.

Even though he would be the first to admit that life in the Soviet Union has improved since Stalin, he undoubtedly would also agree that so far as international politics is concerned the Russians still have something less than our best interests at heart. So what else is new?

But perhaps, too, Ambassador Kohler would also second Daniel Boorstin's observation that we need to find a way of defending our institutions without necessarily insisting on propagating them.

—Reviewed by Herman S. Wolk, Office of Air Force History, Headquarters USAF.

In-Side Out

Race to Oblivion, by Herbert York. Simon and Schuster, New York, 1970. 256 pages. $6.95.

President Eisenhower's farewell address carried two warnings to the American people: the first, against the acquisition of unwarranted influence by the military-industrial complex, has become the rallying cry for advocates of disarmament; the second and lesser known, against the danger that public policy could become the captive of a scientific-technological elite, is the main preoccupation of Dr. York.

Dr. York's scientific credentials are impeccable. As a member of the Von Neumann Committee, the President's Science Advisory Committee, the Chief Scientist of ARPA, and later as Director of Defense Research and Engineering, he was intimately involved in high-level deliberations during the 1950s and early 1960s on weapons development and acquisition decisions. His words, therefore, carry weight when he describes some fellow-members of the scientific community who have urged ever-more complex weapon systems upon the military as "hard-sell technologists and sycophants." By accepting their advice and buying their wares, he charges, the United States government

(*Continued on page 28*)

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About the Author
James Gilbert was born at Croydon in 1935 under the traffic pattern of what was then London's principal airport. In World War II, when the bombing of London became intense, he was sent to the countryside, like thousands of other English children, and has memories of Battle of Britain air combat raging in the skies over Sussex. At seventeen he learned to fly in a Tiger Moth on a scholarship from the Royal Air Force. He since has acquired twelve hundred hours of pilot time in more than a hundred different kinds of aircraft, including many of THE GREAT PLANES. He was runner-up in Britain's national aerobatics championship in 1964, and now lives in New York, where he is a contributing editor of *Flying* magazine.

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has repeatedly initiated arms buildups that are leading the world in a "race to oblivion." The danger lies in the fact that, because of technologically complex defense systems, "the power to make life-and-death decisions is passing from the hands of statesmen and politicians to lower-level officers and ultimately to computing machines and the technicians who program them."

Ironically, Dr. York concludes, despite, or perhaps because of, the steady buildup of our military capability and that of the USSR during the past two decades, both countries are less secure today than they were before. Each new weapon produced by advancing technology only detracts from the national security and makes the prospect of a nuclear war both more deadly and more likely.

Dr. York wants to reverse this trend. He wants the government to stop accepting the advice of the "in" scientists who constantly urge the development of new technological marvels in their overreactions to dubious threats. Implicit is the suggestion that now is the time to start accepting the advice of the "out" scientists who want to cool the arms race.

This view might be more credible if Dr. York had expressed it while he was an "in" scientist, but he dismisses the decisions of the mid-fifties, which endorsed a variety of new weapon systems, as "mistakes" justified by "prudence." As an "out" scientist now, he makes no such concession to the current "in" group, but asserts rather that their "excessive prudence" in weapons decisions is dangerous and can no longer be justified. This is a classic illustration of the difference in view and perception between those who are charged with responsibility for national security decisions and those who are not.

In any case, Dr. York is convinced that the United States, by its unilateral actions, has led the world and the Soviet Union to the current perilous state of affairs. It may still be possible, he suggests, that by our unilateral actions, we can now move the world away from further escalation of the arms race toward arms control and even, eventually, toward nuclear disarmament.

—Reviewed by Harry Zubkoff. Mr. Zubkoff is Chief of the Research Branch, Research and Analysis Division, Office, Secretary of the Air Force.

France's Nuclear Policy

Deterrence and Persuasion, by Wolf Mendl, Praeger, New York, 1970. 256 pages. $9.00.

This is a thorough documentation, from original French sources, of the fact that the goal of establishing an independent nuclear force as a primary element in France's foreign and defense policy was set during the Fourth Republic, and that de Gaulle's extreme pursuit of this goal led to military, economic, and social crises which contributed to his resignation. Without substantial public discussion or control, a relatively small group of technical, industrial, political, and military nationalists gradually oriented the civilian nuclear program toward the construction of an independent nuclear force until the latter became an irreversible and all-consuming process. The primary objective of acquiring nuclear weapons was more political than strategic, and the psychological potential of building an independent French nuclear force was argued more persuasively than the actual capability of such a French force to succeed in a realistic nuclear conflict.

Throughout the early phase of orientation toward an independent French nuclear force, most military leaders objected that its costs would detract from France's more realistic conventional defense capabilities; and although their criticism was subdued during the seeming success of de Gaulle's foreign initiatives, it reemerged during the last year of his term and is having some effect on the Pompidou government in establishing a reordering of defense priorities. Although the nuclear force has been consuming half the total resources devoted to national defense, it has hardly more than symbolic status and may never achieve military credibility. The IRBM and submarine phases of the planned nuclear force have had to be delayed and some projects canceled, such as the "all-azimuth" strategy, so that France's actual thin-deterrence hope is that after the outbreak of hostilities one or two Mirages might be able to penetrate USSR defenses. Meanwhile, the paper plans for "modernized" conventional forces, a territorial defense force, and an interventionary force are a long way from realization.

In addition to this general military dissatisfaction, the uprisings of students, workers, and farmers in France in May 1968 demonstrated the French public's impatience with a few leaders' vain pursuit of international equality with the nuclear superpowers at the extravagant cost of an unbalanced utilization of limited French resources. Although the nuclear program is now too far advanced to be abandoned, military, economic, and social pressures may force the new government to seek multipolar defense projects and more realistic interdependence with the US and NATO—as Great Britain seems to have done. Although political inertia may make it difficult to reorient French nuclear policy into an international context, the author is quite right in pointing out that a new generation of Frenchmen seems to be arising whose realism substitutes for the nationalistic obsession of some previous leaders.

—Reviewed by Dr. Joseph W. Annunziata, Research and Analysis Division, Office, Secretary of the Air Force.

Judging by Experience

Military Justice Is to Justice As Military Music Is to Music, by Robert Sherrill. Harper and Row, New York, 1970. 234 pages. $6.95.

The title of this small volume gives the initial impression that the author might be more concerned with a clever phrase to bolster his preconceived notions than with accurate representation of the situation as a whole. Reflection upon reading the entire text leaves that impression only slightly modified, though in candor, let it be noted that the reviewer was a judge advocate in the Air Force for more than ten years and spent the greater part of that time working with the military justice system.

Mr. Sherrill's book is largely a collection of accounts of some incidents in military prisons and of several trials by court-martial. Of these, the mutiny trials and the general situation in the Presidio, Calif., stockade, the conditions and prisoner treatment at the Camp Pendleton, Calif., brig in 1968 and 1969, and the trial of Capt. Howard Levy at Fort Jackson, S.C., make up the bulk of the book.

Fairness demands that the book be evaluated for what the author professes it to be, not something else. This, however, does involve two inquiries: How well did he do what he says he was trying to do, and what is the value of such an endeavor, if successfully accomplished?

As for the first question, the author describes the book's contents as "accounts of some of the court-martial and prison confrontations—not a detached, scholarly analysis

of them but an effort to experience through them the ordeal of military justice, for whatever common-sense conclusions can be drawn." One would suppose that this was a promise that the data had been fairly selected and presented, so that a man of common sense might be justified in drawing conclusions concerning the court-martial and military prison systems. Regrettably, the author appears to have, intentionally or unwittingly, selected the material, not because it presents a fair cross section of his subject, but because he believes it supports his thesis. This conclusion is compelled by the almost total absence of material favorable to the military system, except indirectly or by way of half-hearted concession. Whatever may be the fault of the court-martial system and the extent of any miscarriage of justice, anyone with more than a fleeting acquaintance with it knows that the near-invisibility of its positive qualities in this book means that the picture is distorted.

Then, too, there are aspects of the military penal system which deserve to be mentioned if the complaints about Camp Pendleton and the Presidio are not intended to be accepted as typical. The author's concession that Air Force prisons "either are very good at covering up their mischief or are singularly humane" is hardly adequate to cover the brig-without-bars of the 3320th Retraining Group, now in its nineteenth year and in many respects unique among correction facilities, military or civilian.

But certainly there is an unfortunate factual basis for some allegations of misconduct by guards in the prisons. As the author notes, it is unclear how many of the stories of maltreatment of prisoners are true, but they cannot all be discounted. An investigating subcommittee of the House Armed Services Committee concluded that several of the prisoners were telling the truth. While there may be some consolation in reading the author's wry observation that there probably is no greater percentage of sadists in the armed forces than in the population at large, those who claim the honor of managing the nation's ultimate power cannot be satisfied until the percentage approaches zero.

To turn from the military penal system to military law and courts-martial, it is perhaps true that the present law has not reduced the risk of abuse as much as it might. Perhaps some modification of the system is in order, to replace some of the sources of complaint with better laws. For example, the bill introduced by Senator Joseph D. Tydings (D-Md.), S. 3117, proposes an independent trial command, with random selection of general court members from among those available within a command. In several respects, this proposal has significant disadvantages but it is indicative of the continuing search by responsible officials for possible changes to improve confidence in military justice and provide even less opportunity for improper influence. Since it is generally accepted that justice not only must be done but must be seen to be done, the search ought certainly to continue. Mr. Sherrill's book suggests no alternative to the present system except no system at all.

Turning to the second question asked at the beginning of this review: "What is the value of the book's goal, the 'experience' of several trials by court-martial, as opposed to the detached study the author disavows?" Certainly an unthinking emotional experience is of dubious value. Probably its only good is to stimulate some thought as well as emotion. Hopefully, those who are so stimulated will recognize the inadequate data of the book and will make the necessary inquiries before drawing conclusions.

—Reviewed by Maj. Walter G. Fenerty, USAF (Ret.). Major Fenerty served in the Office of the Judge Advocate General, USAF, before his recent retirement.

Parade of Stars

The Great Planes, by James Gilbert. Grosset and Dunlap, Inc., New York, 1970. 250 pages with index. $14.95.

In this beautifully designed folio-size book, the English author—runner-up in Britain's 1964 national aerobatic championship and now a contributing editor of *Flying* magazine—writes of the twenty-six aircraft he has selected as the greatest of all time. Not every reader will agree with his selection, but none will deny that each of Mr. Gilbert's "greats" is a stand-out among the thousands of aircraft that have flown in aviation's relatively brief history.

The Great Planes begins with the early Wright aircraft and ends with Boeing's jetliners. Few AF/SD readers will be surprised at Gilbert's choice of the ME-109, P-51, Spitfire, and the Grumman cats of World War II. Or with the Fokkers, Sopwiths, and Spads of World War I. Less familiar to most of us are the aerobatic Jungmeisters and Zlins and the Frati. There is an interesting chapter on the Russian YAKS, most of them of World War II or earlier vintage. Since the author traces the lineage of his "greats," he actually describes and discusses many more than twenty-six aircraft.

Mr. Gilbert writes in an informal, often breezy, style. He has flown many of these aircraft and treats their flying characteristics with a personal touch that is lacking in most books devoted to even short periods of aviation history. I have flown several of the aircraft Mr. Gilbert writes about, and, in those cases, can vouch for the accuracy of his description of procedures and behavior in the air. There are innumerable anecdotes about combat, racing and aerobatic competition, and, in the case of the Tin Goose and the Gooney Bird, the affectionate attention that should be given to faithful workhorses, but seldom is. The photography, much of it in color by the author, is in a class by itself.

This is not a book of dry technical data. It is a love story about the most beautiful, spectacular, and significant planes, written for those who may have lived with some of them, and who believe that flying is among the greatest of man's experiences.

—Reviewed by John L. Frisbee, AF/SD Senior Editor for Plans and Policy.

War on the Potomac

Washington at War: 1941–1945, by Scott Hart. Prentice-Hall, Inc., New Jersey, 1970. 277 pages plus index. $7.95.

Scott Hart, who used to be a magazine writer himself, has compiled a book of reminiscences about the wartime capital city that will be of particular interest to persons who lived and worked there at the time. He is at his best when conveying the mood of the city, of the people, of the harassed executives, of the many men and women in uniform. There are chapters where he seems to strain a bit. To tell about how the Constitution and the Declaration of Independence were crated and shipped to Fort Knox in 1942, he goes back to 1776, 1785, 1790, 1800, and 1924. There is another bit about the zoo and its wartime problems—there were no bananas, so the monkeys ate honey and sweet potatoes—that is used to tell us a lot more than we want to know about the career of Dr. William M. Mann, the zoo's director. But the book is good read-

(Continued on following page)

ing, mainly for the stories about such things as the ladies in uniform, particularly Col. Oveta Culp Hobby, who may have started this whole Women's Lib movement when she designed the WAAC uniform and made all the girls look alike, except for what their dimensions could do to relieve the monotony.

The author was employed by *Time* as a reporter in Washington and his records include a thousand little details about the press. The Pentagon, then a brand new building, does not seem to have changed. News was hard to get. There was a reluctance to give out bad news. The Public Relations offices were overstaffed. There were all kinds of crazy rumors to be chased, including one that Navy WAVES were having battleships tattooed on their breasts. (Hart says it was not true, but does not prove it.) Reporters interviewed each other at the National Press Club bar and came up with a lot of misinformation, a habit that has not been stopped despite the fact that in 1948 they knew for sure that Dewey would beat Truman. If you have any affection at all for Washington, and many of us do, you will enjoy Scott Hart's recollections.

—Reviewed by Claude Witze, AF/SD Senior Editor.

Two Reprints of Rare Documents

Handbook on German Military Forces (War Dept. Tech. Manual, March 1945). *Handbook on Japanese Military Forces* (War Dept. Tech. Manual, September 1945). The Military Press, P.O. Box 643, Gaithersburg, Md. 20760. Each volume 550 pages. $14.95 each.

These two books are well-bound paperback reprints of World War II manuals on the German and Japanese military forces. Both manuals were updated continuously throughout the war as new intelligence information became available. These reprints are of the final issue of each manual.

Although the contents of the two books are not identical, their general plan is similar. Both cover the military system, organization, tactics, weapons, equipment, uniforms, insignia, decorations, fortifications, and a great deal of information not readily classified under any of those headings. The books include hundreds of photographs of hardware together with performance characteristics, color plates of uniforms, organizational charts, signs, and symbols.

All but a few of the original manuals were destroyed, along with other classified materials, shortly after World War II. The few remaining original copies are collectors' items. These reprints are gold mines of information for historians, students, writers, illustrators, teachers, or just plain World War II buffs.

A Giant Emerges

The Rise of Modern China, by Immanuel C. Y. Hsu. Oxford University Press, New York, 1970. 799 pages. $14.50.

Professor Hsu's latest book, *The Rise of Modern China*, is a synthesis of recent non-Communist Chinese, Japanese, and Western writings. Drawing upon these sources, he successfully presents the Chinese view of the evolution of modern China. Although he agrees with most Western scholars that modern China begins about the time of the Opium War of 1839–42, Professor Hsu believes that a "sound understanding" of the period can be attained only by examining the institutions inherited and developed by the Ch'ing Dynasty from 1600–1800. He, therefore, begins his book with a comprehensive discussion of this earlier period. Much of the remaining portion of the book centers on a detailed discussion of the "modern" period which Hsu states ends with the May Fourth Movement of 1919. The period following 1919 is labeled Contemporary China and does not receive the analysis that the preceding period does, much to this reviewer's disappointment.

What are the major forces shaping Chinese history during this modern period? Professor Hsu identifies three. First, the policies and institutions established by the governments in power (Manchu, Nationalists, or Communists) to maintain their position. Second, the Chinese search for a way to survive in the "new" world of the nineteenth and twentieth centuries. Finally, the nationalistic-racial protest of the Chinese against foreign elements in their society. The development of this latter force gives Hsu's book a unique but valuable flavor.

In addition to these basic factors, Hsu believes and successfully supports his thesis that China's response to the intrusion of the West was more than a passive one. He shows that the Chinese conducted an active struggle ". . . to regenerate and transform their country from an outdated Confucian universal empire to a modern national state, with a rightful place in the family of nations."

The book is organized both chronologically and topically. At the end of each chapter can be found both a concise summary of key factors discussed, and a selective bibliography of Western and Chinese writings pertaining to the subject matter discussed. Both of these items will be very helpful to beginning students of Chinese history.

Professor Hsu's detailed analysis of the dominant intellectual and reform movements during the modern period is exceptional. His coverage of political, social, and economic developments is satisfactory but less comprehensive at points. As previously noted, his discussion of the Nationalist and Communist regimes is lacking in much-needed depth.

Students of nineteenth and early twentieth century China will find this book very rewarding. Professor Hsu has presented a comprehensive, well-written, and documented analysis of the Chinese understanding of their search for and rise to "modern" status.

—Reviewed by Maj. James R. Pralle, Department of History, US Air Force Academy.

With Pershing in Mexico

The Great Pursuit, by Herbert Molloy Mason, Jr. Random House, New York, 1970. 269 pages. $8.95.

Every writer has one story dearest to his heart, and one suspects that for Mr. Mason this was it. A jacket photo shows him peering through the window of the remains of the adobe house in Columbus, N.M., from which Lt. John Lucas dashed barefoot to help defend the town and Camp Furlong, home of the 13th Cavalry, against Pancho Villa's sneak attack on March 9, 1916. He visited as many of the old men as he could find who, as young, hard Pershing cavalrymen and foot sloggers, suffered through the eleven-month campaign through desert-like Chihuahua in futile search for Villa, and took down their memories of what it was like. He flew the "iron compass" as the pilots of Foulois' 1st Aero Squadron had done and, when the railway disappeared into a mountain near Guerrero, got as haplessly lost despite the modern navigation aids

(Continued on page 32)

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on his Cessna Skymaster. And in his search for an answer to the long-elusive question of why Villa hit Columbus, he found Gen. Jaime Quinoñez, who had outlived his Villista days to become a respected Coahuilan. "For pay?" the old revolutionary chortled. "Ridiculous. Villa felt your country betrayed him and, being *muy hombre,* he became really very, very mad." Out of that anger and frustration, says Mason, Villa braved the wrath of the United States by raiding across the border. Or at least that explanation will have to do until documentary evidence proves it wrong.

From the Pershing papers in the Library of Congress and military records in the National Archives, Mr. Mason fleshes out the old tales of what outfits fought and where, and who fell or performed valiantly and how. Skillful use of secondary sources provides sufficient political and diplomatic background to keep battles and men in clear focus. While not a great work, by the historian's standard, it is something far more than just another good rehash. Mr. Mason appears to have set out to repay, as honestly and directly as he could, the many hours he spent as a child on the southwest frontier listening to the tales of his elders on what it was like to be hit by the dreaded "greasers" and, as one of Black Jack's boys, to be *gringos* in an alien land. For this reviewer, he succeeded admirably.

—Reviewed by Thomas A. Sturm. Mr. Sturm is Chief of the General History Branch, Office of Air Force History.

Sky-High Women's Lib

I Live to Fly, by Jacqueline Auriol. Translated by Pamela Swinglehurst. E. P. Dutton and Co., New York, 1970. 197 pages with index and 21 photos. $5.95.

Madame Auriol's autobiography reveals a life continually faced with death—at times seemingly attracted by it. Although she disputes the legend that test pilots are suicidal or are haunted by the danger of a fatal accident, her story does contain an unusual fascination for challenges risking death. Even as a young girl, Jacqueline competed with her brother and cousins in feats involving speed, nerve, and the danger of physical injury. She had her "share of victories the same as the boys."

She married Paul Auriol when she was twenty, on the eve of World War II. The marriage brought her closer to danger than to happiness, once the war began, however. Her father-in-law, Vincent Auriol, was one of the first declared enemies of the Vichy regime. The entire family spent four suspense-filled years fleeing the Gestapo, with false identifications—Jacqueline with two babies in her arms.

In 1947, Vincent Auriol was elected President of the French Republic. Madame Auriol's account of life at the Elysée Palace is filled with entertaining anecdotes about Soviet Ministers, Princess Elizabeth, and Jacqueline's efforts to redecorate the Elysée. These years were filled with endless social activities, somewhat parallel to those of Jacqueline Kennedy in the White House.

What caused the transformation of Jacqueline Auriol from a counterpart of Jacqueline Kennedy, social-political celebrity, to a cognate of Jacqueline Cochran, aviatrix?

In 1949, a politically oriented smear-campaign centered on the Auriol family grew so fierce that Paul and Jacqueline decided to cut back their social life. They took up flying as a hobby to escape, literally, the gossip mongers.

On July 11, 1949, at the age of thirty-one, Jacqueline Auriol was passenger in a plane that crashed on landing. Her face was completely smashed. For two years and more than fifteen operations she would not see her two sons because of the horrible extent of her facial disfigurement. Even now, once more an extremely attractive woman, she has never grown completely used to her different face.

Because flying had taken so much from her, she became determined that it should also give her something in return. Thus began the career that was to lead Jacqueline Auriol to become first a professional pilot and then the world's only officially qualified woman test pilot. Her tales of the famous French Flight Test Center at Brétigny are filled with excitement and tender memories. Most of her life as a pilot has been strongly influenced by Raymond Guillaume, aerobatics pilot-instructor and close friend. He saw her through her post-accident period and through her five records as "the fastest woman in the world."

Once, while flying a Mystère IV, Madame Auriol got into an apparently uncontrollable spin. Fighting back from a blackout, she remembered some advice a fellow test pilot had given her only a week before: achieve maximum acceleration to make the spin a "healthy" dive. She pulled out with mere yards to spare, and found that "on the brink of death the surprising thing is that one wasn't afraid, that one was almost content—above all, curious. Very curious."

Madame Auriol's book is never boring, very easy to read—in fact, the most serious fault is that the photographs do not appear in any discernible order and are not in the chapters to which they relate. But, when she says: "Of the test pilots and engineers I have known [at Brétigny's Flight Test Center], more than half have gone . . . ," well, you couldn't get me to trade places with her for all the Harmon Trophies (she has three), world records, and airsick bags in the world.

—Reviewed by Kay Colpitts, AF/SD Editorial Assistant.

Confidence

Some years ago, while on an editorial visit to Europe, I was invited to attend the field trials of the G-91 NATO fighter in Northern Italy. Thanks to a friend in 17th AF headquarters, a staff car from Aviano picked me up and I set out for the trial site. The driver was an Italian civilian employee of the Air Force. On the back of the front seat was posted an identity card, with the driver's picture and name. The printed legend read:

"The driver of this car is (name typed in).

"He is cleared for classified information up to and including——." In the blank was typed, "NONE."

—JOHN F. LOOSBROCK

Gill Robb Wilson 'Living Memorial'

By Maj. Bob Cessna, USAF (Ret.)

THE LATE Gill Robb Wilson, former President and Chairman of the Board of the Air Force Association and first Chairman of the Board of Trustees of AFA's Aerospace Education Foundation, is being remembered with a "Living Memorial" at Embry-Riddle Aeronautical University in Daytona Beach, Fla.

Gill Robb Wilson started flying shortly after the Wright brothers and aviation remained his first love. He often spoke of that love through prose, poetry, and pictures. He founded the Civil Air Patrol to interest young people in aviation during their formative years and to give them an environment fostering self-discipline. He constantly encouraged the upgrading of instruction and skills and campaigned for formal higher aviation education. He was a leading spokesman for aviation for many years.

The Gill Robb Wilson Memorial Aeronautical Science Center will be located on the new, $25,000,000 campus at the Daytona Beach Regional Airport. Within the three-building complex will be classrooms, briefing and oral rooms, library, simulator laboratory, and teacher's offices, as well as flight operations.

On the ramp in front, about fifty planes, comprising the instructional fleet of "flying laboratories," will park between "Gemini Flights." The "Gemini Flight" concept puts the second student in the back seat of a Cessna 172 with another student and instructor in front. This gives each Embry-Riddle student in the Professional Pilot Program or Aeronautical Science Degree Program fifty percent more air experience and instruction at no additional cost. Five simulators will occupy one of the three hexagonal buildings.

Embry-Riddle was founded in 1926 as a Fixed Base Operation and Flight School at Lunkin Field in Cincinnati, Ohio. In the late thirties the operation was moved to Miami, Fla. During WW II, it operated four fields in Florida as a Civilian Contractor to the Army Air Corps for teaching primary flight training. More than 17,000 aviation cadets sprouted wings under the guidance of ERAI's civilian instructors. Other thousands were trained in Florida and Brazil as aviation mechanics for the services.

In the early sixties, ERAI added degree programs to its curriculum. By 1964 the airspace over and around Miami was becoming saturated, so ERAI administration began looking for a more suitable location. They moved to Daytona Beach in 1965 with 259 students.

In 1968, Embry-Riddle earned accreditation from the Southern Association of Colleges and Schools. Enrollment had increased to 1,500, with more than 1,000 students in aviation-oriented degree programs. Sixteen hundred students are enrolled for the current fall trimester. They are working toward A.S. and/or B.S. degrees in Aeronautical Engineering, Aircraft Maintenance Engineering Technology, Aviation Management, Aeronautical Science, Applied Mathematics, and Aviation Maintenance Management, or are enrolled in the Maintenance Technology or Professional Pilot Programs.

Gill Robb Wilson's dream of a private, nonprofit, coeducational, self-supporting, aviation-oriented university dedicated to higher aviation education is now in being with rapid growth predicted. It is estimated the demands of all types of aviation in the future necessitates a campus at ERAU (changed to University from Institute this summer) capable of handling a student population of 6,000 in any given trimester.

Artist's conception of the Gill Robb Wilson Memorial Center to be built at Embry-Riddle Aeronautical University.

Aviation students at ERAU are serious, dedicated, self-disciplined, a cut above average. Demonstrations are limited to displays of excellence in classroom and airplane. They occupy classrooms only for the learning experience. They instigated a request to the Administration for an ROTC unit from one of the services to be assigned to campus.

The Memorial Fund Campaign needs an additional $300,000 by December 31 of this year or it will lose a $707,400 federal grant. Donations in any size are urged. Make your tax-deductible checks out to: GILL ROBB WILSON MEMORIAL FUND and mail them to Bob Cessna, Director of Development, P.O. Box 2411, Daytona Beach, Fla. AFA National Director William W. Spruance (ANG-Del.), who is Campaign Coordinator, will thank you personally, and your contribution will be recognized within the Gill Robb Wilson Memorial Aeronautical Science Center. With a donation of $125,000 or more by any one entity, a building within the Gill Robb Wilson Complex will be named in honor of whomever the donor selects. Other buildings on the ERAU campus may be named for as little as $75,000.

The money must be raised before December 31, 1970, so that the Gill Robb Wilson Living Memorial may be brought into being in the spring of 1972. Mail your check today.—END

AEROSPACE WORLD

News, Views & Comments

By William P. Schlitz
NEWS EDITOR, AIR FORCE MAGAZINE

WASHINGTON, D.C., Sept. 15

August was a spectacular month for tests of the spage age's most advanced weapons—both US and Russian.

The US led off early with the first underwater firing of the Poseidon missile (*see September* AF/SD, *page 30*), which is scheduled to replace Polaris missiles aboard US submarines in this decade as part of the deterrent weapons mix.

As if in response, the USSR flexed some missile muscle of its own when it conducted two more tests of its SS-11, a Minuteman-size ICBM. The test firings from the south central part of the Soviet Union culminated 5,000 miles away in the Pacific Ocean, about 500 miles northwest of Midway Island. "Three objects from each missile" impacted, according to Defense Secretary Melvin R. Laird, who noted that US forces had monitored the test shots and observed the splashdowns. These tests of the SS-11 followed several in July, and clearly indicate that the Russians are mounting a sustained effort to achieve the capability of placing multiple warheads aboard their SS-11s, 700 of which have been deployed. In effect, if the Russians put the multiple reentry vehicles, or MRVs, aboard their SS-11s, the number of warheads in the system "will be accelerated by [a multiple of] three," Mr. Laird said. He estimated that upgrading the SS-11s could be accomplished by 1972.

The strategy of using many warheads from SS-11s would be to swamp US missile defenses and leave Minuteman silos open to attack by huge SS-9s, considered the main threat to US retaliatory missile sites. About 300 SS-9s have been deployed.

In August, the USSR also test-fired into the Pacific its solid-fueled SS-13 missile, a new ICBM smaller than the SS-11.

Soviet extension of their offensive missile forces is a key factor in President Nixon's decision to deploy the Safeguard antiballistic missile system, the first test shot of which took place successfully late in August. The target was the third stage of a Minuteman I fired from Vandenberg AFB, Calif.

It was tracked by radar of the ABM test facility at Kwajalein Atoll in the Pacific as if it were an incoming enemy ICBM. A Spartan missile was fired from the site and intercepted the nose cone above the atmosphere high over the Pacific. Neither carried explosive warheads, but the Spartan came close enough to have destroyed the intruder had a nuclear warhead been used, the Army said. Altitude of the interception was not disclosed.

This was the first time Spartan had been sent against other than stationary targets in an ABM test. Following more advanced testing, first sites of the Safeguard system are scheduled to be operational in 1975 at Grand Forks AFB, N.D.

☆

USAF announced that it has received proposals from six companies for development of the A-X close air support aircraft.

Those responding were Boeing Co.'s Vertol Division, Philadelphia; Cessna Aircraft Co., Wichita, Kan.; Fairchild Hiller Corp.'s Republic Aviation Division, Farmingdale, N.Y.; General Dynamics Corp.'s Convair Division, San Diego, Calif.; Lockheed Aircraft Corp., Burbank, Calif.; and Northrop Corp., Beverly Hills, Calif.

From the six, two airframe manufacturers are to be selected to produce two prototypes each for the competitive development phase. The A-X is to be built utilizing the "Fly-Before-You-Buy" concept instituted by Defense Secretary Laird to control overall program costs by meeting a series of development goals and hardware flight milestones.

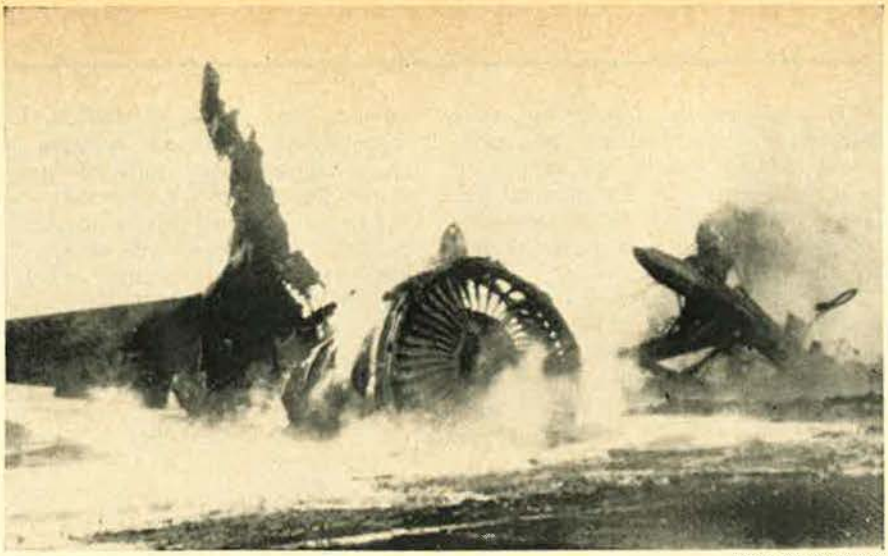
The A-X is visualized as a rugged, twin-engine, single-place aircraft with short takeoff and landing characteristics and high maneuverability. It is to carry varied payloads and be capable of long loiter times in its close-support mission. The A-X, if given a production go-ahead, would be the first USAF aircraft built from scratch with high survivability in enemy ground fire as a basic objective.

☆

The College Eye Task Force from the Aerospace Defense Command has

—Wide World Photos

US pilots and crewmen of World War II were joined by combat aces from Japan and Germany in a grand reunion held early in September at St. Louis, Mo. From left, Maj. Gen. Tamotsu Yokoyama; Don Volkmer, reunion organizer; Col. Erich Hartmann, German ace; and Gen. James H. Howard, Medal of Honor winner.



—Wide World Photos

The wreckage of a Pan Am 747 lies smoldering at Cairo Airport. It was one of four commercial airliners skyjacked and destroyed by Arab guerrillas in September. Aircraft hijacking has become such a serious problem that armed guards have been ordered aboard all international flights of US airliners. Other steps, such as sealing off aircraft cockpits, are also under consideration.

concluded its operations in Southeast Asia. It has moved from its base at Korat Royal Thai AFB, Thailand, to other areas in the Far East.

The force consisted of men and aircraft rotated to SEA from ADC's 552d Airborne Early Warning and Control Wing, McClellan AFB, Calif. Participation by the unit's aircraft in the war began in April 1965.

Since then, the EC-121 crews have earned high grades in such varied activities as conducting intercepts of MIGs to directing the rescue of downed pilots. In the latter role, College Eye is credited with helping to save eighty flyers.

College Eye aircraft also coordinated US airstrikes while ranging as airborne radar surveillance teams over all areas of SEA where US aircraft were in combat. While personnel and aircraft were detached for four-and-one-half-month tours in SEA, the wing continued to carry out its primary mission of providing continental air defense.

☆

USAF's Kham Duc "Air Base" in South Vietnam has a patched-up 5,000-foot runway, three tents, and a bunker. Its entire Air Force contingent consists of about a half-dozen men.

Actually, Kham Duc is an airstrip some thirteen miles from the Laotian border that is being used to supply friendly ground forces in the area with rations, ammunition, and other requirements of modern warfare.

Its Air Force personnel are specialists from the 15th Aerial Port Squadron stationed at Da Nang AB. Their business is cargo unloading, which on an average day can mean handling thirty or so aircraft, usually C-123 Providers and C-130 Hercules.

Since a C-123 can bring in 16,000 pounds of supplies per sortie, that adds up to about a half-million pounds daily—a lot of cargo.

The Air Force personnel at Kham Duc are not alone. With them are US Army artillery, combat engineers, and South Vietnamese and US ground sloggers. And they are welcome, for following the frenzy of handling essential cargo in daylight, the night brings the war with it.

When night falls, the men of the 15th APS at Kham Duc prepare their weapons and take turns on guard. In effect, Kham Duc becomes a forward combat position. The night sky is buffeted with the shock waves of artillery shells on their way to targets. There are intermittent angry outbursts of small-arms fire from perimeter positions.

The men of the 15th APS at Kham Duc are all volunteers. Their unique bird's-eye view of the war is from several different angles, day and night.

☆

With obvious disappointment, outgoing National Aeronautics and Space Administration chief Dr. Thomas O. Paine announced cancellation of two Apollo moon landings in the schedule of remaining flights. Under the new plan only four missions remain.

The new schedule, Dr. Paine said, calls for two missions during 1971, in January and June, and two final

(Continued on following page)

missions during 1972, also in January and June. The cutbacks will reduce the total number of landings, including those accomplished already, to six instead of the ten originally planned. After Apollo is concluded in 1972, NASA will pick up with its Skylab manned orbiting space station program, which will test crew and hardware capabilities in near-earth orbit for up to fifty-six days. After Skylab, there will be a manned-spaceflight hiatus until NASA space-shuttle and large-space-station plans get under way.

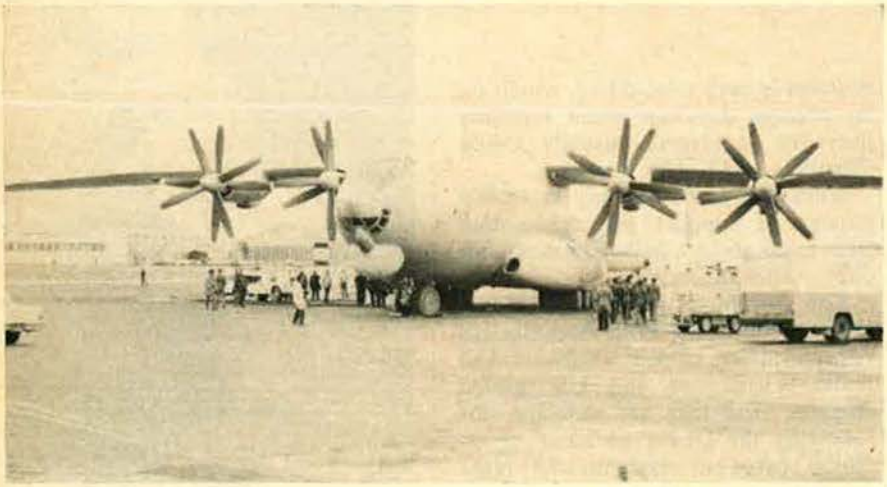
The NASA Administrator's announcement was a bitter personal pill. It was virtually his last major act before his previously submitted resignation went into effect.

He indicated that NASA had been forced by fiscal realities to cancel more missions despite the urging of space scientists that the missions be kept on the schedule in order to extract more scientific data from the Apollo program.

Dr. Paine declared that "there has been a tremendous reduction in the national space capability" and he warned that "any further cuts below [current spending] would have a devastating effect" on the nation's space effort.

The cancellation of the two missions is expected to eliminate the possibility of sending scientist-astronauts to the moon, as had been originally planned.

The cancellations also mean, in down-to-earth terms, the loss of 700 more NASA employees, bringing the space agency work force down to some 30,000. NASA indicated that the space-associated private contractor industry work force will decline by some 18,000. By the middle of 1971, NASA projects that industry employees working on civil space projects will total 142,000, less than half the figure three years ago.



A huge Russian AN-22 transport is refueled at Iceland's Keflavik Airport before resuming its mercy mission to Peru's earthquake victims. The Russians lost one AN-22 off the coast of Greenland ***(see September AF/SD, page 38).***

Gen. Kagetoshi Ogata, Chief of Staff of Japan's Air Self-Defense Force, with Gen. James Ferguson, at that time head of the Air Force Systems Command, during the high-ranking Japanese officer's recent ten-day tour of selected US military installations.

☆

The program to test Army and Air Force helicopters as emergency evacuation and ambulance vehicles for civilians has met with initial success and is being expanded.

Called Project MAST (Military Assistance for Safety in Traffic), a cooperative venture of the Departments of Defense and Transportation, the operation got under way in the San Antonio, Tex., area in July (*see September* AF/SD, *page 34*).

The same service will now be available in the areas surrounding Colorado Springs, Colo.; Seattle, Wash.; Mountain Home AFB, Idaho; and Luke AFB, Ariz. These sites were selected to better determine the "effectiveness of communications and coordination systems and training requirements for the military and civilian participants under different climatic and geographical conditions," the Defense Department said.

During the first eighteen days of MAST, Army helicopters of the 507th Air Ambulance Company, Fort Sam Houston, Tex., flew eleven missions listed as bona fide emergencies and were credited with saving a number of lives.

The helicopter support in Colorado will be supplied by the Army's 283d Aviation Company, Fort Carson, and will cover a 100-mile radius. The 3d Armored Cavalry Regiment's Air Cavalry Troop will fly missions in a radius of sixty miles from its home at Fort Lewis, Wash. Copters of the Air Force's 42d Aerospace Rescue and Recovery Squadron will work out of Mountain Home and Luke.

The units will have on constant alert helicopters and crews, along with medical personnel.

☆

Lt. Col. Reagan H. Beene, Jr., chief of simulation at the Air Force's Aerospace Research Pilot School, Edwards AFB, Calif., was keenly aware of Americans' penchant for trying to beat pinball machines.

So with the help of a manufacturer, he created his own "Pinball Quizzer," a device that combines

gamesmanship with learning about aircraft. Colonel Beene believes that in trying to beat the machine, which has been installed in the flight ops room, student test pilots will learn about aircraft characteristics and emergency procedures, and that someday that knowledge might make all the difference.

At the push of a button, the machine's board lights up. Questions concerning aircraft are then flashed across it. Points are scored for the number of correct answers and the speed with which they are rendered.

☆

Mark Twain would have been amazed at the things people are doing about the weather. For example, Project Stormfury, begun by the government's Environmental Science Services Administration (ESSA) in 1961 as an interagency hurricane research and modification program, will again attempt experiments this season to curb hurricane forcefulness.

Aircraft actually enter a hurricane's area of maximum winds to drop silver iodide in seeding operations. The silver iodide provides freezing nuclei for the enormous quantities of water that already exist in the storm at temperatures far below freezing. As this water turns to ice, it releases heat energy that theoretically should bring about lower pressure in critical areas of the storm and thus reduce wind velocity. Stormfury scientists say that,

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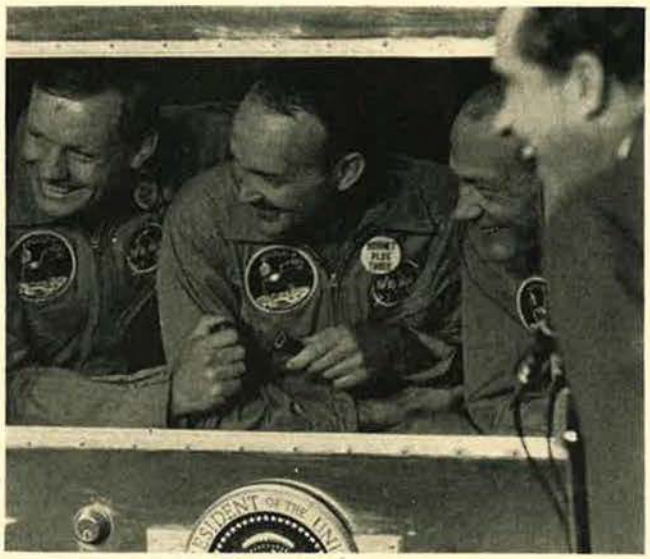

At its annual meeting in September, AFA awarded its top honor, the H.H. Arnold Trophy, to the Apollo-11 crew—from left, Armstrong, Collins, and Aldrin—shown here with President Nixon after the first moon landing.

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An Air Force security policeman holds his weapon at the ready as he stands guard over a C-5 transport at Cam Ranh Bay AB, Republic of Vietnam. The gigantic transport is used as needed to fly oversized cargo to the war zone.

if hurricanes can be decreased even slightly in intensity, savings in damage could be great.

As tracking, forecasting, and preparedness have improved over the years, the death toll from hurricanes has diminished. However, because of built-up areas in the paths of hurricanes, property damage is on the increase and during the 1960s amounted to $4.24 billion.

The "unusually early warning" of Hurricane Celia on August 1 is credited with saving many lives. Air Force WC-130 Hurricane Hunters spotted the storm fifty-two hours before it struck the Texas coastal area. Storm deaths were limited to four.

Participating in Stormfury will be USAF's 53d Weather Reconnaissance Squadron, Ramey AFB, Puerto Rico, and the 58th Weather Reconnaissance Squadron, Kirtland AFB, N.M. (Aircraft from the 53d WRS, with help from Navy weather observers, tracked Celia the entire distance from Mexico and provided the Weather Bureau with essential data on the storm's direction and power.)

In another weather-related project, ESSA scientists also are working on methods to avert lightning strikes of aircraft and missiles. Famous examples of this phenomenon are the bolts that struck Apollo-12 during launch. Many aircraft also have been hit by lightning.

In one of the more exciting aspects of the lightning-study project, some ESSA personnel actually go aloft in search of lightning to strike their aircraft so they can study the phenomenon.

☆

In September, four Tactical Air Command F-4 Phantom squadrons deployed from the US to their dual bases in Germany. Purpose of the trip by the NATO-committed units was to participate in exercise Crested Cap II.

About 2,400 TAC personnel also were flown to Germany to participate. The squadron units involved were the three making up the 49th Tactical Fighter Wing, Holloman AFB, N.M., and the 417th TFS, Mountain Home AFB, Idaho, which joined its parent unit, the 50th TFW, stationed in Germany.

While in Germany, the units engaged in training and operational readiness tests established to emphasize their ability to support NATO allies if required.

Crested Cap II is the second exercise for the US NATO-committed fighter squadrons since they were withdrawn from Germany in 1968. The first redeployment took place early last year. Under treaty agree-

While most of us are looking forward to autumn's golden weather, some have already experienced winter, especially those involved in tests of Lockheed's unique Twister. The off-road vehicle's recently completed Arctic trials are the latest in a four-year series that included performance in terrain ranging from marshlands to desert sands.

CONTINUED

WAF Col. Helen O'Day is congratulated by Lt. Gen. A.J. Russell, USAF Assistant Vice Chief of Staff, upon her award of the DSM. Colonel O'Day, a life member of AFA's Iron Gate Chapter, recently retired after twenty-seven years of service.

ments with Germany and Great Britain, dual-based forces are required to return annually to Europe for training. The exercise was not a test of deployment speed but rather "increasing proficiency in operating procedures and techniques unique to the European theater and NATO," the Air Force said.

☆

NEWS NOTES—The Air Force canceled development of its **AIM-82** short-range, air-to-air missile. Instead it will go with an advanced version of the Navy's AIM-9H Sidewinder to equip USAF's upcoming **F-15 air-superiority fighter** as well as other aircraft.

The **Third Annual Armed Forces Audio-Visual Communications Conference** is to be held at the Sheraton-Park Hotel in Washington, D.C., **October 5-9.**

The **17th National I.S.A. Aerospace Instrumentation Symposium** is scheduled for **May 10-12, 1971,** at the Frontier Hotel, Las Vegas, Nev. Officials request the submission of research papers.

The **Red River Valley Fighter Pilots Association** (*June* AF/SD, *page 40*) has awarded **three $1,000 scholarships** to children of USAF or Navy pilots who are MIA or POWs.

For the first time another country will launch US satellites. Italy has agreed to launch **three scientific satellites** from its **San Marco** platform in the Indian Ocean off the coast of Kenya. The equatorial launches permit use of Scout rockets rather than larger launch vehicles required in Cape Kennedy shots.

We have a report that **active pilots** in the US number 720,028—double the 1960 figure. About forty-two percent are private pilots.—END

Europe's VFW-Fokker has come up with a new concept—called the integrated ducted fan—for powering trainer aircraft. Being studied by the German Air Force, it could ease student transition to jets and is a possibility to replace current single-engine trainers.

AIR FORCE
OCTOBER 1970

Current studies indicate that a marriage of available technology and mass-production techniques could make possible the development of low-cost fleets of unmanned remotely piloted aircraft that would do jobs ranging from air-superiority missions to surveillance. Here's a special report on . . .

Remotely Piloted Aircraft— Weapon Systems of the Future?

By Edgar Ulsamer
ASSOCIATE EDITOR

FOR certain Air Force pilots, tomorrow's combat cockpit may be a swivel chair in a bomb-proof underground control center. From there, a USAF pilot may "fly" by remote control his air-superiority fighter or interdiction bomber against targets hundreds of miles away. Unlike today's silent launch crews in the ICBM silos, the remotely located pilot will truly fight his air battles in the same decision-making, real-time fashion the man in the cockpit does today. And his weapon system will be deadlier and cheaper than any manned system. Most important of all, these pilots will not be exposed to death, injury, or capture.

Remotely controlled combat aircraft "flown" by pilots hundreds of miles away are technically feasible and in many cases will perform better and more cost-effectively than conventionally controlled planes. Because such vehicles contain, on board, only a fraction of the expensive component systems needed by manned aircraft, and none of the latter's life support and safety systems, they are ideally suited for mass production and thereby capable of reversing the long-standing and steady trend toward ever fewer, increasingly expensive, and highly complex manned vehicles.

These findings, which explicitly suggest a revolution in aerial warfare, were the result of an intensive, high-level review and analysis effort early in 1970, which is now progressing toward demonstration status. Reaction to the program by Department of Defense and aerospace industry executives is said to be "enthusiastic" and has led to sufficient government funding in spite of current budget limitations. Launched in the form of a symposium at the request of Gen. James Ferguson, then Commander of the Air Force Systems Command, this study of the Remotely Piloted Vehicle (RPV) potential consisted of detailed examinations of presently available technologies as well as projections of what pertinent technology advances are likely to occur within this decade. From this information base, individual panels of experts extrapolated specific weapon system concepts, ranging from remotely piloted air-superiority fighters to remotely piloted forward air controllers (FACs). Sponsored jointly by AFSC and RAND Corporation, the RPV study program also involves other federal contract research centers, mainly MITRE and

Aerospace Corporation, as well as personnel from NASA and the Naval Weapons Center.

The first session of the RPV symposium was held in May of this year and culminated in the formation of five panels that were given the task of analyzing and documenting the technical and operational feasibility and economics of RPVs for specific USAF mission categories.

The Time Is Ripe for Remotely Controlled Vehicles

The second phase of the symposium, in July, was attended by DoD representatives at the Assistant Secretary level along with key personnel from the Department of the Air Force and the other military services, as well as industry executives of the chief-engineer/vice-presidential level. It was the consensus of these panels that "the time is ripe" for RPVs and that a parallel program of studies and demonstrations should be undertaken. Such a program is currently in progress with three teams, headquartered at the Armament Development Test Center at Eglin AFB, Fla.; the Aeronautical Systems Division Center at Wright-Patterson AFB, Ohio; and a third team composed of NASA and Naval Weapons Center personnel, each preparing plans for proposed demonstrations and studies.

One panel concentrated on how and where remotely piloted vehicles will affect the Air Force's command, control, and communications (CCC) structure. Included were studies of the communications required by the various links between the vehicle, possible mother ships, and the remotely located pilot, including methods of extending the line-of-sight coverage through satellites.

The conclusions were that RPVs are compatible with, and could function as an integral part of, the present command, control, and communications system. To date, unmanned aircraft, such as drones, have been used only singly and for unique operations that call for their own special control systems. With the advent of RPVs in greater sizes, ranges, and numbers, it will be necessary to integrate their command and control into the existing systems. This creates opportunities to improve the coordination and effectiveness of remotely piloted vehicles over conventional aircraft because a number of pilots can be collocated and given access to information not available to pilots operating conventionally. Sitting at a central control console, pilots operating RPVs that function as a tactical unit also can exchange information among themselves—and coordinate operations—much more readily than can pilots in individual aircraft.

The panel established that the communications needed to actually "fly" the vehicle and to control its on-board system—the remotely located pilot "sees and acts" in exactly the same manner that a conventional

(*Continued on following page*)

airborne pilot does—are within the present state of the art and available now. Many key elements of the needed communications links are currently in use, either in military or NASA systems or in commercial aircraft, it was found. The availability of relatively inexpensive video recorders and the development of zoom lenses for target-identifying electro-optical systems make it possible not only to reproduce the actual operating environment for the remotely located pilot but to give him special advantages. The RPV study has already established that a remotely located pilot, with the help of advanced optical techniques, can identify flying objects up to twenty miles away, a capability denied the man operating in the cockpit. Similarly, RPVs have been flown at altitudes of fifty to seventy-five feet and at speeds of 450 knots with a simple improvised video scope setup. It is noteworthy—and typical of pilot reaction to remote flying—that one of the country's top test pilots, Milt Thompson of NASA, commented recently that operating a RPV makes him as emotionally and physically "tired" as actual cockpit flying, whereas operating a training simulator produces no such effect.

Enemy Jamming

The symposium's technical experts acknowledged that a determined enemy could succeed in jamming the communications links of a remotely piloted vehicle, just as he can in the case of a manned system. There are available, however, relatively simple design measures that make jamming extremely difficult and enormously expensive. As a result, it was concluded that remotely piloted vehicles, given the present state of art, are not uniquely susceptible to jamming. This even applies in cases where communications relay aircraft or satellites are used to increase the distance between the remote pilot and the vehicle.

It is apparent that RPVs can be deployed in direct support of the Air Force's command, control, and communications mission as communications relays and surveillance platforms. Both concepts were found to contain a substantial potential for reduced costs, greater efficiency, and more flexibility than manned systems. Because the underlying technology is on hand and the operational benefits appear sufficiently attractive, the panel urged, therefore, that the Air Force proceed with RPV development for the command, control, and communications role.

RPV Air-Superiority Fighters

With regard to the Air Force's air-superiority role, the symposium developed the concept of a three-stage RPV system. It consists of a mother ship equipped with a good-sized radar which can acquire and track targets at distances of about sixty miles. (The AWACS concept has been identified as a promising radar-equipped mother ship.) The mother ship would carry two remotely piloted vehicles that would be launched singly or jointly as soon as threats are detected. One or both RPVs, launched and headed toward a point of interception by the mother ship, would pick up the "threat" on their optical system at a distance of between ten and twenty miles and move in for the attack. (The controllability of RPVs by mother ships sixty miles away has already been demonstrated by the Air Force.) The RPV fighter equipped with guns or missiles—and, in the more distant future, laser guns—will be designed for 12-G sustained flight capability, nearly double the G-loading an experienced fighter pilot can tolerate for only brief periods of time. Because of this structural advantage, the RPV can "easily outfight" any manned system. It will enjoy a turn-rate advantage of between fifty and 100 percent over manned systems within the speed and altitude flight envelope of air-to-air combat. The RPV can afford to expend all its fuel if a "kill" is at stake, thereby enjoying yet another advantage over manned fighters. The RPV fighter would have a multiple-pass capability in case its remotely located pilot misses the target in the first encounter. A preliminary design of such a vehicle was undertaken by the panel in order to compare its features against those of manned fighters.

The initial conclusions were that a three-stage system (mother ship, RPV, and missiles or guns) is technically feasible but that certain demonstration efforts were necessary to establish an acceptable level of confidence before further developmental work is started. While no firm costs for such a system have as yet been established, there is evidence that it would compare favorably with conventional systems even without allowing for the invaluable benefit that the human operator is protected from death, injury, or capture. No decision has been reached as yet on the question of whether to place the remotely located pilot aboard the mother ship or on the ground. Both modes are being considered at this time. The remotely piloted air-superiority fighter initially will be weather dependent insofar as it relies on visual means to fight air battles. As a result, its operations will be confined mainly to daylight and clear air conditions.

Interdiction and Close Air Support

The interdiction and close air support mission constitutes the classic application for remotely piloted vehicles with experience dating back to World War II when B-17s were modified to perform such operations. All requisite technology exists and is available.

The study effort defined two basic concepts for RPVs tailored to the interdiction and close air support mission. One proposed design is an air-launched vehicle, with a mission radius of 250 miles, which would be recovered by landing on runways using skids. According to preliminary estimates, such a vehicle would have an ordnance payload of 2,200 pounds and a gross take-off weight of 7,500 pounds if it carried its stores externally, or about 8,500 pounds if carried internally. Initial cost estimates indicate that with some advances in manufacturing techniques and component technology the flyaway cost of a recoverable interdiction and ground-support vehicle could range between $150,000 and $175,000.

Another proposed design for this mission would be a low-cost, expendable bomber equipped with electro-optical guidance that locks on the target remotely after a mother ship has identified the target from afar. Such a vehicle, with a payload of about 1,500 pounds, would have a total weight of between 2,200 and 2,500 pounds and is expected to cost approximately $25,000. Both designs, it is believed, are within the trends of the

present state of the art and require no breakthroughs in laboratory techniques or concepts.

The specific conclusions of the symposium, concerning the utility and technical feasibility of remotely piloted tactical bombers, were that, while it is possible to develop such vehicles, their cost-effectiveness in large-scale deployment depends on the availability of low-cost engines. Considerable progress in this area is being made and justifies a sanguine outlook in terms of the near future. It was deemed necessary, however, to demonstrate in practice the reliability of LORAN (long range navigation) retransmission in a high-speed aircraft. Finally, the exact functions to be performed at the control center need to be determined and evaluated before further action is to be taken.

Reconnaissance and Surveillance

FAC (forward air controller) and SCAR (strike control and reconnaissance) missions were rated as excellent candidates for RPVs by the AFSC/RAND study. The avionics system needed to perform the RPV recce mission exist, and their capabilities have already been demonstrated. All the necessary components could be in production and available within one year. Some elements of "quieted aircraft" (lowest possible observable performance characteristics in terms of sonic noise, infrared radiation, radar reflection, and others) exist, and the techniques for further "quieting" are known. The recommendations by the symposium were that such a quieted RPV should be built for the FAC and SCAR missions as soon as possible. The potential of a remotely piloted FAC aircraft operating in concert with a manned aircraft, such as an F-4, for instance, was rated as intriguing. The FAC could direct the F-4 to drop its bomb into a given "basket area" and would then guide the bomb to the target with its laser designator. The exposure of the F-4 over target would be cut substantially and its bombing accuracy virtually guaranteed. The operational feasibility of manned and unmanned aircraft working in concert is yet to be demonstrated. However, it was concluded that there are no technical obstacles in the way.

Decoys, Target Markers, and Covert Jammers

A special panel examined a variety of other tactical missions for RPVs. Rated as highly promising was the concept of a tactical fighter decoy that could be used to draw enemy fire, to confuse enemy defenses, and to test surface-to-air missile avoidance tactics. The present technology base is sufficient to support development of such decoys, either as miniaturized radar-simulated versions of tactical aircraft or as full-scale maneuvering vehicles capable of sustained engagement of enemy defenses. Miniaturized RPV decoys could be developed from recent work involving small, high-speed maneuvering gliders, which have the same subsonic flight characteristics as the F-4. Equipped with miniaturized electronic payloads that can simulate full-scale fighters, they could duplicate the signals produced by jamming pods. Since these vehicles can be "flown" in the same manner as manned combat aircraft, their signature on enemy radar will be fully credible and enhanced by such details as duplicating formation flying and other tactical flight maneuvers.

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Gen. James Ferguson, the former Commander of the Air Force Systems Command, ordered an in-depth study of the technical and economic feasibility of remotely piloted aircraft early in 1970. Convened as a symposium under the direction of AFSC and RAND Corp., this study effort found that RPVs are technically feasible and, in many cases, can be expected to perform more cost-effectively than conventional systems. RPVs were also seen as a means to return to mass-produced weapon systems.

Full-sized decoys, the panel found, could be constructed from such inexpensive materials as fiberglass, plastic foam, reinforced paper, or inflated fabrics. Similar in size to manned fighter aircraft, and equipped with some form of on-board propulsion, they could perform operational maneuvers such as formation flying or SAM-avoidance tactics for about forty-five minutes. Their life cycle could cover between six to ten missions since they can return to a home base for recovery and reuse if not shot down.

The same panel found promise in the tactical utility of a "quieted" RPV delivering covertly a variety of devices to target areas to increase the strike effectiveness of manned fighter bombers. These would include target markers, other visual aids, and homing beacons. Sensors could be dropped covertly to monitor activities at road intersections or potential missile or AAA sites. Similarly, commandable jammers, capable of neutralizing enemy radar, could be placed near such sites, to be activated during strikes by USAF aircraft. Since missions of this kind require low-level penetration of high-threat areas, they could be performed by manned aircraft only at a high loss rate of human life. Such "low observable" RPVs could also perform effectively on strike missions against small, fleeting, low-value targets such as enemy sampans in Southeast Asia.

The RPV study also indicated that such a vehicle could be used to airdrop remotely controlled ordnance that would lie dormant until activated to fire at such targets as aircraft coming out of protected "hangarettes" at airfields.

RPVs Need New, Low-Cost Production Methods

The rationale for remotely piloted vehicles in the majority of the missions under consideration pivots on low cost and availability in quantity. The Air Force has encouraged the aerospace industry to study means of reducing design and fabrication costs of such vehicles, especially in the critical propulsion and structural areas. Recent successful efforts to build engine compressor stages out of stamped sheet metal were seen as pointing the way toward truly drastic cost reductions. (Such engines could not operate at the high temperatures of conventional jet engines but their performance would be adequate for the light RPVs, with the added advantage that they hinder detection because of the low temperature of the gas stream they emit.)

Overall, the symposium saw the RPV study program as a means to basically change the nation's weapon system design and acquisition philosophy. The collision of two trends—the ever-increasing complexity of US weapon systems on the one hand, and the shrinking defense budget on the other—is causing smaller and smaller numbers of each system to be built, with the compounding effect of driving unit costs up even higher.

Design of the RPVs is keyed to build truly low-cost vehicles by moving as many of the expensive subsystems from the aircraft to a central and safe control facility on the ground or aboard a mother ship that stays out of the combat zone. What is exposed to risk, then, is a low-cost item that can be mass produced. The desire to return to mass production, the traditional point of strength of US industry, is one of the driving forces behind the remotely piloted vehicle program. In order to achieve the low-cost feature, the study suggested that such parameters as size and maneuverability be compromised whenever necessary. This becomes practical because the only valid criterion in the design of such vehicles is cost-effectiveness. The reasoning is, of course, that, the cheaper they are, the more such vehicles the Air Force can afford to lose.

Specialized Pilots for Various Flight Operations

Understandably, the initial study effort contains a number of uncertainties, including specific questions about how the remotely located pilot is to function. While for the moment the planners and designers prefer to allocate one pilot to each RPV—and that pilot is to fly the entire mission—there is thought being given to different schemes. For instance, it might prove practical to use takeoff specialists who perform only that operation on a number of aircraft. One pilot specializing in navigation might be able to operate several aircraft while they are en route to their targets or air-to-air engagements and then would turn over the controls to other pilots specializing in the art of air battle or other combat operations. It is likely, however, that, at least initially, the conventional ratio of one pilot per aircraft will be applied. The advent of the RPV, the study pointed out emphatically, does not appreciably alter the role of "the man in tactical air missions but only places him in a different position in the system loop without diluting his role as the final decision-maker."

But the ultimate virtue of the RPV project may well prove to be that it is in consonance with the American military tradition of placing the highest value on human life. If, in addition to enhancing the tactical effectiveness of the Air Force, RPVs can safeguard the lives of the nation's airmen, remotely piloted vehicles may become the closest thing to a panacea the aerospace age has yet created.—END

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Despite the innumerable reports of corruption and political repression in South Vietnam, the fact is that the war-torn land has slowly but surely progressed toward representative government with a considerable measure of freedom of political expression. This is all the more remarkable in view of the conditions under which the progress has been made . . .

The South Vietnam Nobody Knows

By Brooks McClure

BAD news has become a specialty from South Vietnam. Month after month, stories from Saigon describe a country seemingly wracked by conflict and disorder: Demonstrations by Buddhists, students, disabled veterans; reports of corruption, political dissension, prison abuses; and—with a timing that is almost never accidental—rocket and bombing attacks by the Viet Cong.

Not since the early days of the Korean War twenty years ago has any crisis of importance to United States national interest been reported in such persistently negative terms. The result has been an impression of decline and impending defeat in South Vietnam which has hardened into a series of slogan-like statements heard round the world. For example:

- The Thieu government is a dictatorship which has suppressed all effective opposition.
- The South Vietnamese National Assembly and Supreme Court are powerless.
- The national elections are fraudulent.
- Most people in South Vietnam would support the NLF if they only had a free choice.
- Vietnamese society is being wiped out: "We are destroying the people we are trying to save."

None of these flat generalizations and polemic simplifications is justified. But they are the conclusions which dominate most thinking about South Vietnam in the United States and in much of the rest of the free world. The overwhelmingly negative impression thus created has itself generated a propaganda and political input into the Vietnam situation, in the form of pressure on South Vietnam from abroad, which can affect the future development of that country.

But in reality, and despite enormous problems, South Vietnam has made remarkable progress in recent years and set up significant institutions of democratic government. A visitor returning there after three years' absence finds people everywhere going about their daily chores, unintimidated by Viet Cong terrorism. Saigon—the most densely populated city in the world, with more than a sixth of the country's people in its metropolitan area—operates effectively despite predictable difficulties. The rich delta region south of the capital, where nearly half of all South Vietnamese live, has vastly improved its security since 1968 without so much as an American infantry platoon left to protect it. And political action and debate are vigorous.

Although inflation is a large and growing problem, the country has made other substantial advances. A few random facts tell the story: Despite the dislocations of war, eighty percent of all age-eligible children in the nation are now in elementary schools (as against thirty percent in 1957). Under land reform, 900,000 acres have been distributed to farmers and a program is under way to make all sharecroppers landowners, hopefully within five years. Before 1972, the country will be self-sufficient in its main food, rice.

These are noteworthy accomplishments, for they help balance an otherwise distorted picture of South Vietnam. They have been reported in some of the better newspapers abroad, but they cannot compete

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for public attention with top news play given to political dissension and street demonstrations in Saigon.

North Vietnam Compared

To get a realistic idea of how the Republic of Vietnam is performing, it should be compared with North Vietnam. For the basic issue of the war is whether South Vietnam should remain independent and self-governing or become "unified" under the Communist regime in Hanoi. The only pertinent question for the South Vietnamese is which rule is better—Saigon's under something like its existing constitutional system, or Hanoi's.

It is immediately apparent that, whatever difficulties or grievances South Vietnamese may have under their present government, they are not likely to find any solutions above the 17th parallel. For nearly twenty-five years, North Vietnam has been one of the most rigidly controlled countries in the Communist world, and the record of Ho Chi Minh and his government is one of ruthless suppression.

Only one free election has been held in the North —for the National Assembly in January 1946. Within a year, the Assembly, after only three meetings, had been purged of nearly half its members. In a second National Assembly election in 1960, the Lao Dong (Communist) Party got 99.85 percent of the votes.

In the summer of 1946, Interior Minister Vo Nguyen Giap eliminated all nationalist leaders. In 1956, following a brief period of "liberalization" in which free speech was encouraged, Ho launched a four-year drive to root out the intellectual opposition which had thus been revealed. At the same time, North Vietnam's "land reform"—actually a brutal system of peasant control and liquidation of landlords —resulted in the execution of at least 50,000 persons and the imprisonment in labor camps of double that number.

". . . whatever difficulties or grievances South Vietnamese may have under their present government, they are not likely to find any solutions above the 17th parallel."

In November 1956, peasants in Ho Chi Minh's own province of Nghe-An revolted and asked Canadian members of the International Control Commission to send them to South Vietnam. Hanoi used an army division to crush the uprising, resulting in the death or deportation of at least 6,000 persons.

This is the record against which the social and political system of the Republic of Vietnam should be measured. The insistence of some prominent foreign critics on denouncing the Saigon government as a ruthless dictatorship while literally waving the banners of the Viet Cong and North Vietnam has found no popular endorsement in Vietnam itself.

Communist Failures in the South

In a war otherwise often marked by confusion and paradox, the general population of South Vietnam has left no doubt about its attitude toward the Communist enemy. Probably the most emphatic indication of popular sentiment came during the all-out Viet Cong and North Vietnamese attacks in February and May of 1968, known generally as the "Tet offensive."

These attacks reduced Hue to a shambles, destroyed nearly 60,000 homes and made more than 400,000 persons homeless in Saigon and its surrounding province, and damaged other large population centers. Here was a chance for the people to rally to the Viet Cong; the Saigon government would have been powerless to resist such a mass action.

But the attackers got no help from the people. The offensives failed to break the popular spirit and collapsed for the lack of support which the enemy needed and apparently expected.

"The widespread notion abroad of a 'captive' South Vietnamese people . . . is refuted at every turn. . . . If the people wanted to revolt, they could do so. . . ."

Perhaps even more significant was the popular response after the attacks. Although the monetary system could easily have broken down in such a crisis, the people still used the piastre and it continued to have value. They also quickly returned to work, even while fighting was still going on, thus enabling a speedy return to normal. The hoarding of food and other essentials was limited and of short duration. Tens of thousands of families joined the government's self-help housing program, investing their own money as well to rebuild their homes.

As a result of this response by millions of South Vietnamese, the destructive effects of the Tet offensive have been erased in two years, and the levels of production now outstrip those which existed before the attacks.

But if the Tet experience confirmed the popular sentiment against the Viet Cong, other indicators are at least as impressive. For example:

- No South Vietnamese military unit has defected to the enemy.
- No ranking South Vietnamese officer has defected (although a number of Viet Cong senior officers and thousands of their soldiers have defected to the Saigon government).
- The Viet Cong and its successor Provisional Revolutionary Government have not been able to get a single South Vietnamese of any prominence for their leadership councils.

The widespread notion abroad of a "captive" South Vietnamese people under the heel of a tyrannical, authoritarian regime, waiting for a chance to be liberated by the Viet Cong and their North Vietnamese allies, is refuted at every turn in the country itself. If the people wanted to revolt, they could do so, for they are armed to the teeth.

By the end of last June, the regular armed forces of South Vietnam totaled 470,000 men. In addition, there were 515,000 local defense troops—the Regional and Popular Forces—all armed with rifles and other infantry weapons. And then there were more than three million people's militia—the Popular Self-Defense

Force—designed to provide guard services, community support, and disaster relief. One-third of these, about a million men, are also armed.

Notwithstanding this distribution of weapons and ammunition throughout the country, there has been no discernible rallying to the Viet Cong. On the contrary, the Viet Cong's fighting forces have visibly shrunk, with North Vietnamese troops increasingly filling the ranks.

There is, thus, every evidence that the enemy has no significant popular appeal in South Vietnam. This fact, of course, does not necessarily translate into support for the present regime in Saigon. Nor does it mean that there is not considerable unhappiness with living conditions by many South Vietnamese.

What it does mean is that the people of South Vietnam—the overwhelming majority of them—prefer the system they know, and whatever prospects they see under it, to the rule of Hanoi and its Communist system. And this is what the war is all about.

Democracy: Progress and Problems

But what about the system, and the government, in South Vietnam today? The situation in the country is very complex, with its historical, regional, cultural, ethnic, and religious ramifications. But certain key factors stand out as a guide to help outsiders appreciate some of the problems—and accomplishments—of this beleaguered nation.

Foremost among these factors is the unusual diversity of the 17.5 million population in South Vietnam. Minorities include nearly one million Chinese, 700,000 Cambodians, 800,000 racially and culturally distinct Montagnards, and 100,000 descendants of the ancient Malay Champa people—the American Indians of Vietnam. While most Vietnamese are Buddhist, Taoist, or Animist, there are also 1.6 million Catholics —850,000 of whom fled from North Vietnam in 1954. The Buddhists themselves are divided into two national groups—the nonpolitical Quoc Tu and the so-called "militant" An Quang.

"All minorities are now represented in the National Assembly, where they have a meaningful voice in government and can draw national attention to their problems."

These many groups have historically protected their parochial interests, and most resisted a strong central government for fear of losing local power. Less than ten years ago two sects—the Buddhist Hoa Hao and the eclectic-Christian Cao Dai, each with about a million well-organized adherents—even had their own armies and were largely independent.

Today all these groups have been brought under Saigon's rule, to a degree that could hardly have been predicted a decade ago. All minorities are now represented in the National Assembly, where they have a meaningful voice in government and can draw national attention to their problems.

The special interests of these different groups will be a fact of political life in South Vietnam for decades to come, and the potential for trouble should not be underestimated. Some observers still expect the Republic to come apart at its regional, ethnic, and religious seams.

But taking the situation as it stands today, there is room for optimism. And compared with traditional social conflicts in Western countries—between the French and English Canadians, the Walloons and Flemings in Belgium, the Italians and Austrians in the Alto Adige, the Protestants and Catholics in Ulster —South Vietnam is making encouraging progress.

To weld its diverse population together, South Vietnam is attempting a kind of political revolution which may be unique in the underdeveloped world—and which perhaps merits as much attention as the Vietnam War itself.

It started with the adoption, in 1967, of a democratic format of government which has since taken on some of the substance of democratic rule as well. After only three years—a mere moment in history—it is too early to assess the lasting effects of this experiment. But enough has happened thus far to raise hopes for the political future of the country.

A Constituent Assembly, chosen in a national election in 1966, prepared a Constitution for the Republic, which took effect the following April. A series of elec-

". . . . South Vietnam is attempting a kind of political revolution . . . which perhaps merits as much attention as the Vietnam War itself."

tions was then scheduled—for village and hamlet chiefs, village councilmen, members of the National Assembly, and the president.

The old government was headed by Lt. Gen. Nguyen Van Thieu as Chief of State, with Air Marshal Nguyen Cao Ky as Prime Minister; they had been chosen by a ten-man military council. Now, under the new Constitution, they ran for president and vice president in competition with ten other sets of candidates.

Skeptical observers, who had already witnessed many changes of regime in South Vietnam, predicted that the elections would be manipulated to give a landslide victory to Thieu and Ky. But to their surprise the Thieu-Ky ticket won only 34.8 percent of the vote, followed by the "White Dove" peace ticket of Truong Dinh Dzu, with 17.2 percent. The third candidate, Phan Khac Suu, polled 10.8 percent.

Critics who had predicted a stolen election now pointed to the "poor showing" of Thieu and the relative strength of his principal opponent. Ever since, there has been an impression abroad that the Thieu-Ky government had never won a real mandate.

This is a misunderstanding easily cleared up by comparing the 1967 Vietnam election with recent multiparty elections in Europe. In the 1968 elections in Denmark, for example, eleven parties competed as in South Vietnam. The returns of the top three contenders were as follows:

Social Democrats	34.0%	(vs. 34.8% for Thieu)
Conservatives	20.4	(vs. 17.2 for Dzu)
Moderate Liberals	18.6	(vs. 10.8 for Suu)

Considering that the Social Democratic Party has

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dominated Danish politics almost continuously for forty years, the comparison with the Vietnam vote here is instructive. And other examples can also be cited. In the March 1970 Finnish elections, involving nine parties, the Social Democrats led with 23.4 percent of the vote, followed by the Conservatives with 18 and the Center Party with 17.1.

The confusion over the Vietnam election is that majority or large-plurality votes for president are expected in countries with executive-type governments—

"The vital question is, however, to what extent opposition in South Vietnam is generally suppressed and the system closed to 'outsiders'."

but never with eleven candidates competing. The results of the 1967 Vietnam election testified to its honesty.

Evolving Checks and Balances

In a country with a long history of power politics and corruption, charges of electoral abuses are not surprising. A common complaint is that potential candidates have been prevented by bureaucratic obstruction from registering, and other irregularities have been claimed.

While proof is hard to get, full allowance should be made for the possible truth of these charges. And it should be noted also that "pro-Communist neutralists" have been barred from running. The vital question is, however, to what extent opposition in South Vietnam is generally suppressed and the system closed to "outsiders."

On this point there is some reassuring evidence. There were, for example, an average of 4.5 candidates for each seat in the Lower House of the National Assembly, and many of the winners have classed themselves as independent or in the opposition. The deputies average forty-one years of age, with many in their twenties and thirties, and only twenty of the 137 have been professional military men. In both the Lower House and the sixty-member Senate, criticism of the Administration is often vociferous and amplified to the nation through the Saigon press.

This spirit of opposition has been demonstrated in the exercise of constitutional checks and balances during the past two years. After the Tet offensive of 1968, for instance, when Thieu asked the National Assembly for emergency economic powers, the Lower House rejected his request by a vote of 85 to 10 and the Senate by 40 to 3. More recently, the Administration's urgent call for an austerity-tax law was passed only after long deliberation in the Lower House and was still pending in the Senate at this writing.

The Assembly has more than just its legislative powers to restrain the Administration. It can investigate the conduct of policy and summon any government official to testify, up to and including the Prime Minister, who acts as Thieu's executive administrator. It can even require the replacement of the entire government leadership, by a three-quarters vote in both houses.

The Supreme Court also has been endowed by the Constitution with substantial powers, which it has used several times to curb the Thieu Administration. It has, among other actions, ruled unconstitutional (1) an important Thieu taxation decree, (2) a military court conviction of Assembly Deputy Tran Ngoc Chau on treason charges, and (3) the prosecution of student leaders on charges of pro-Communist activities. In addition, the High Court has required the upgrading of military-court judges, and the National Assembly has followed up by writing a law which puts the military field courts—hitherto answerable only to the President—largely under control of the Supreme Court.

These and other actions by the National Assembly and Supreme Court have demonstrated their independence and significant role in running the nation. But these institutions are not always pitted against the executive branch. In the main, the three branches have operated reasonably in concert to carry on the nation's business, despite periodic differences. A functioning government has thus been possible even while the constitutional division of responsibilities and powers is being worked out in practice.

Balancing Democracy and Defense

This aspect of South Vietnamese politics is hardly visible abroad. What is apparent is the circus side of political life, chiefly as it applies to the Thieu Administration. All the less savory features of politics as

". . . the three branches have operated reasonably in concert. . . . A functioning government has thus been possible even while . . . division of . . . powers is being worked out."

Americans know them—nepotism, favoritism, corruption, deception, distortion—can be found in South Vietnam. And so can the familiar dilemmas and difficult choices of legitimate democratic politics. The stakes are high, the competition rough, and—in the arena of an open society with a contentious press—there is no shortage of exciting news. Criticism of the Thieu Administration in the National Assembly is plentiful, and often colorful, although constructive proposals are scarce.

The Administration itself has been vulnerable to charges ranging from official corruption to the arbitrary arrest and detention of political opponents. But, as with everything else in Vietnam, the actual situation is not simple. What Thieu's critics call political repression he claims is necessary to control subversion and sabotage of a country at war. Foreign observers are tempted to take sides here—usually against Thieu—but they do so at the risk of being unfair.

Two celebrated cases stand out. The first was the arrest and conviction of Truong Dinh Dzu, the "peace candidate," who was runner-up to Thieu in the election. Dzu was charged with pro-enemy activities as well as with violations of currency-control laws. Critics contend that Thieu simply removed a political rival.

The second case involved Deputy Tran Ngoc Chau, whose trial by a military field court has been ruled unconstitutional by the Supreme Court. Chau was convicted on charges of dealing secretly with his brother, an acknowledged agent of North Vietnam. The government called this a treasonable act, designed to undermine the Republic. Friends of Chau say that his contact with his brother was only natural and that he was trying to win the brother over to the South Vietnam side.

Chau, who is still in jail, has filed an appeal with the Cassation Court, a branch of the Supreme Court, asking for exoneration and release.

One deputy told this writer that he believed Chau was guilty as charged and therefore voted to lift Chau's immunity as an Assemblyman so he could be tried. But, he added, it was a mistake for the government to prosecute. "The President paid too high a political price; he should have dropped the whole thing," the deputy said.

"The government has a perplexing problem in drawing the line between legitimate criticism . . . and political action designed to undermine the national war effort."

Critics claim that hundreds of Thieu's "political opponents" have been imprisoned as subversives. And since most prisoners claim they were merely advocates of peace, it is difficult for an outsider to make a fair assessment of the charges. One thing is certain, however: The government has a perplexing problem in drawing the line between legitimate criticism or protest and political action designed to undermine the national war effort.

Contrary to the popular impression abroad, not all demonstrations against the government are political. Protests by disabled war veterans, war widows, and striking workers usually are to seek relief from rising costs and limited income. Other demonstrations—including some by students—have had political purpose, and some of them have been interpreted by the authorities as an attempt to weaken the government's negotiating position with North Vietnam.

The simple fact remains that demonstrations of all kinds can, and do, occur in South Vietnam. In fact, some occurrences in Saigon would be unthinkable in most other countries, even in peacetime.

Such was the case in July when ten members of a visiting American "fact-finding group," supposedly looking into peace movements in South Vietnam, joined student protestors in an antigovernment demonstration. The Americans then participated in a press conference in which their spokesman called for replacement of "the Thieu-Ky clique" by a "fair and representative" government that would bring peace. Furthermore, two American correspondents covering the demonstration wore black armbands like the protestors. And two weeks later two young Frenchmen unfurled a Viet Cong flag over the memorial to South Vietnamese fighting forces in the middle of Saigon.

These actions—combined with a continuous flood of foreign criticism reported daily in the Saigon press—have unquestionably hardened the "antiforeign" feeling among many South Vietnamese who believe a firm resistance to Hanoi's demands is vital. Newspaper editorials have underlined this irritation.

Freedom of the Press

As part of its war measures, the Thieu government has also repeatedly seized single issues of certain Saigon newspapers on charges that they damaged national security and fighting morale. Formerly it was possible to close papers, but last December the National Assembly passed a press law which prohibits the closing of a newspaper without Supreme Court action. And while the government can seize individual issues, each such case must then be taken to the courts for judgment.

These actions against the press are often interpreted abroad as "muzzling" free expression. But in fact it would be difficult to imagine a wider-ranging field of reporting, criticism, and comment on Vietnamese affairs than is covered by Saigon's some forty newspapers.

Not all papers carry political news, and some of them support or sympathize with the government. But criticism abounds, as can be seen from the following small sample of negative headlines which appeared on a typical day, Tuesday, July 28, 1970:

"But in fact it would be difficult to imagine wider-ranging reporting, criticism, and comment on Vietnamese affairs than is covered by Saigon's some forty newspapers."

"Senate People's Bloc Spokesman Criticizes Thieu, Comments on Thieu-Ky Conflict"

"Leaders Making Laughing-Stock of Themselves, Senate People's Bloc Says"

"Women Meet, Demand Peace and Right to Live"

"Secret Meeting Between U.S. Ambassador and An Quang (anti-government) Monk"

"Senator Tuu Asked About Report of U.S. Ambassador's Pressure on South Viet-Nam"

"Vietnamese Women Demand Immediate End to War, Attribute Expanded Prostitution to Presence of American Troops"

"Living Rights Committee Urges Vietnamese Authorities to Warn U.S. Against Acts Endangering Vietnamese Lives"

"Thieu-Ky May Fall Into the Foreigners' Trap, Senator Phiet Warns"

"Deputy Kieu Mong Thu Will Set Up Women's Peace Committee"

(Continued on following page)

Brooks McClure was a Washington newsman and frequent contributor to military journals before he joined the State Department's Foreign Service in 1951. He has made study trips to South Vietnam in 1967 and more recently in 1970. Now a career officer with the US Information Agency, he is currently Public Affairs Officer at the American Embassy in Denmark.

Stories of this kind, combined with a daily review of foreign comments about South Vietnam and much hard-hitting editorial comment, are all part of the South Vietnamese reading diet. The impact on popular morale can only be imagined. But one thing is clear: The political discipline and guided thinking which characterize the enemy state to the north have no counterpart in this free-swinging republic.

Whether a curse or blessing, South Vietnam has its own brand of emerging democracy—faulted and still fragile, to be sure, but real. Here is a remarkably open society in the throes of war; by any standard a freer nation than any totalitarian state—either Communist or fascist—and perhaps freer than some other countries as well.

The practical effects of demonstrations in Vietnam, as elsewhere, are difficult to measure. The Saigon protest marches have undoubtedly had a strong propaganda impact abroad, but their influence on Thieu's political fortunes have yet to be measured. Any kind of demonstration once a week, involving between a score and a couple of hundred participants, can maintain the impression in the outside world that "there's more trouble in South Vietnam." The "trouble," however, may or may not be significant or enjoy wide public support.

"Here is a remarkably open society in the throes of war; by any standard a freer nation than any totalitarian state . . . perhaps freer than some other countries as well."

Presidential Prospects

The real meaning of the protests will emerge in the presidential elections next September. Thieu is then expected to run for his second—and, under the Constitution, his last—four-year term. His opponents may include his bitter political enemy, Senator Tran Van Don, who, like Thieu, is a former lieutenant general. Another possibility is Maj. Gen. Duong Van Minh, the "Big Minh" who led the military forces which overthrew Ngo Dien Diem in 1963.

There are rumors that Vice President Nguyen Cao Ky may also enter the presidential race. Ky, who once yielded the top leadership to Thieu, is probably the only other Vietnamese politician as well known nationally as the President.

Thieu has shown a keen awareness of the importance of popular support, particularly in the countryside. He has—unlike military leaders who preceded him—appointed mostly civilians to the rank-and-file positions in his Administration. He has also tried hard to project his image and ideas across the nation.

Hardly a week passes without the President's flying to some remote area of the country to make a speech, participate in a local celebration, or inspect development projects. He also discusses his policies on TV, and he and his ministers have appeared by turn on a weekly public-affairs show, "The People Want to Know," to explain the government's position on current issues, under the questioning of various Saigon newspapermen.

Whether this exposure will help reelect Thieu remains to be seen. He will no doubt be a formidable campaigner, but he will be facing strong competition. The election, in any case, is not likely to be dull.

A Look at the Future

Surveying the complex patchwork of South Vietnam's political and social life, the outsider can bring the scene into focus only by comparing that troubled country with the real world around it. In this way, many of its difficulties can be better understood.

It is important, for example, to separate out Vietnam's war problems from its problems just as a developing nation. The war is blamed for many dislocations which are also being experienced by other countries around the globe—rapid urbanization, industrialization, and the change of ancient social customs and cultural patterns. But while the war has made the transition both more abrupt and more painful in Vietnam, these radical changes would have had to come in any case if the country were ever to shed its feudal straitjacket and modernize.

In examining South Vietnam's other problems, it helps to recognize that many of them have been endured by other countries. Today one of Saigon's most serious difficulties is inflation. Prices rose by thirty-four percent in 1969 and are increasing now at an annual rate of about fifty percent. Some observers think this is intolerable, but South Korea managed to survive a fifty percent annual inflation for several years after the Korean War.

The Korean experience also points up another little-realized fact about Vietnam. The war, for all its suffering and sorrows, is also creating a highly skilled work force which can help immeasurably in postwar development. South Korea's recent remarkable growth would have been impossible without this same kind of wartime training.

"A comparison with other countries also demolishes the mischievous myth that South Vietnam is being destroyed by the war."

A comparison with other countries also demolishes the mischievous myth that South Vietnam is being destroyed by the war. This argument has been used to justify a call for "immediate and unconditional peace" to save the country from annihilation.

According to testimony given in the United States Senate, 300,000 civilians have lost their lives in Vietnam. This fact has been cited to support the annihilation or "genocide" theory. But without minimizing the tragedy of this great loss, it cannot be compared with that suffered by other nations in our time—nations which have survived and prospered.

At least 400,000 civilians were killed during the Korean War, most of them within a six-month period. In addition, nearly every major city in South Korea except Pusan was leveled in the summer of 1950, leaving millions of people exposed to the bitter coming

winter, short of shelter, food, and clothing. Nothing comparable has happened in Vietnam—despite the grim and drawn-out fighting. And notwithstanding its war losses, South Korea became one of the fastest-growing developing nations of the 1960s.

Japan and West Germany—the third and fourth largest industrial nations in the world today—were both crippled in World War II. In a single Tokyo raid in 1945, American bombers killed 80,000 and left another 1.5 million homeless. The Japanese estimated that 200,000 lost their lives in the atomic-bomb attack on Hiroshima. Soviet Russia puts its World War II casualties at twenty million, or a tenth of its population.

In neither physical damage nor loss of life can the Vietnam War approach the devastation of these earlier conflicts. Although a record tonnage of bombs has been dropped on South Vietnam, most of it has fallen in the uninhabited jungle where the enemy has had his supply lines and hideouts. Herbicides, now temporarily not in use, have been described as having poisoned the earth. But evidence is still scarce; DDT has done more demonstrable damage in the United States and Europe than defoliants have in Southeast Asia.

There has indeed been a real threat of genocide in South Vietnam, but this has come from Viet Cong terrorism and assassination. Probably a fifth or more of the 300,000 civilian deaths can be attributed to this cause rather than to actual combat.

Last year, the enemy killed more than 6,000 civilians and wounded 15,400 others in sneak attacks and bombings. In addition, they kidnapped another 6,300, most of whom have vanished and may be dead. This year the terrorist tolls are running twenty-five percent higher.

Most damaging are the selective assassinations—particularly the individual killings of rural leaders ranging from young school teachers to village chiefs. According to Douglas Pike, a leading authority on the Viet Cong and its tactics:

"Steadily, quietly, and with a systematic ruthlessness, the Communists in ten years have wiped out virtually a whole class of Vietnamese villagers, and many villages today are devoid of natural leaders. . . . This loss to Vietnam is inestimable; its replacement will take a generation or more."

This feature of the Vietnam War makes it indeed unique, but it is one of the least understood and least publicized of all the travails of the South Vietnamese people. Long after the physical damage of the war has been repaired and forgotten, the country will still be suffering from these losses in its grass-roots leadership.—END

ONE-DOWNMANSHIP

At Ubon, Thailand, in 1967, the fighter pilots of the 8th Tactical Fighter Wing eagerly awaited a unique event. Instead of the normal allotment of replacement crews, a whole squadron from the States would arrive en masse, complete with the D-model F-4 and full of rookie crews. The new aircraft would be a boon. The new crews offered an unmatched opportunity for some high jinks, a parade, and a blast.

On the day the new squadron arrived, the parade formed up, and the FNGs were placed on a big flat-bed truck complete with bunting and beer. Led off by a motor-bike brigade, Sam Lahs, fire trucks, jeeps, and a brace of water buffalo, the flat-bed was exuberantly escorted up and down the flight line and into the housing area. In addition to a thorough hosing by a hidden Aussie fire truck, the "new guys" were treated to a huge sign hung on the side of the barracks building. It read simply, "If I had a hundred to go, I'd cut my ——— throat!" All the new crews did a real double take on that one, to the delight of the old-timers.

On the very first mission for any of them, a first lieutenant from the new gang was sent off in the back seat of an F-4 with one of the wing's most experienced front seaters. The mission was to an area with relatively light ground fire, but the veteran's luck ran out, the F-4 caught a load of flak, and the crew punched out over the drink. After some time in the water, a rescue helicopter arrived and fished both men out of the sea. The obviously shaken lieutenant caught his breath, stared at the floor for a few minutes and then was heard to say in shocked tones, "My God—and I've got 99 to go!"

Thanks to efficient and speedy rescue methods, the young lieutenant was back at Ubon the next evening. No more an FNG, the walked into the O Club in his salt-stained flying suit. With his chest puffed only slightly, and his eyes to the front, he casually swaggered past his yet-untried squadron mates and headed straight for the old-timers' section of the bar. There he was met with warm yells of recognition, amply libated, and allowed to tell his story. He was really IN. After a few drinks he turned and, noticing his pals from the new outfit sitting in the corner, sauntered over slowly, obviously enjoying their wide-eyed open-mouthed silence. On reaching their table, our new veteran looked over his squadron mates with a somewhat disdainful stare and remarked in a loud clear voice, "If I had a hundred to go, I'd cut my ——— throat!"

—BRIG. GEN. ROBIN OLDS, USAF

(AIR FORCE Magazine *will pay $10.00 for each anecdote accepted for publication.*)

West Germany is honestly assessing the shortcomings of its military posture and preparing to do something about problems ranging from weapon obsolescence to manpower policy. Here is a special report from *AIR FORCE* Magazine's Editor for Europe . . .

Germany's Defense 'White Paper' —A Hard Look Ahead

By Stefan Geisenheyner
EDITOR FOR EUROPE

UNDER the auspices of its Minister of Defense, Helmut Schmidt, the Social-Democratic government of Germany published its first White Paper on Defense a few months ago. Publication coincided with major unrest in the German armed forces and with public concern about Germany's defensive posture.

The paper is an honest assessment of the present state of West Germany's armed forces. It shows a thoroughly disquieting picture of military effectiveness, but does set long-term goals to remedy the situation. It discloses many serious errors in military manpower planning and numerous deficiencies in past procurement policy. The paper also concludes that the time has come to remodel and modernize the nation's defensive system.

At the beginning of the 1970s, the armed forces must face the fact that their equipment is not adequate to fulfill the tasks set by NATO planning. Four basic reasons for this opinion can be extracted from the White Paper:

• The equipment and weapons received by the armed forces during their formation about fifteen years ago were, in part, already obsolete or obsolescent. Some of this equipment is still in use. The modernizing and reequipment policy of earlier governments did not always keep pace with rapidly evolving military technology. The net result of this faulty planning is a mix of modern and obsolete equipment, with lowered combat efficiency.

• Though most weapons and equipment still are serviceable, they are quickly approaching the end of their usefulness or have already surpassed their normal lifespan. The White Paper points out that some essential equipment has already passed the point where intensive maintenance or repair is financially sound. This holds particularly true for aircraft currently in service. Some older types are so worn that flight safety is seriously impaired.

• Substantial amounts of weapons, equipment, and associated gear were obtained in the early 1960s, to enable West German forces to fulfill their part in

A Breguet Atlantic, the West German Navy's antisubmarine warfare and maritime patrol aircraft, is on its way to an ASW training area. Twenty of the aircraft were ordered but sixteen are already unserviceable because of the massive corrosion effects of the northern sea air.

The operations center of a German destroyer requires the technically trained, who are reluctant to stay in service.

NATO's policy of "massive retaliation," a concept replaced in 1967 by "flexible-response" planning. This change in strategic approach threw Germany's long-range procurement planning off the track. Orders for new weapons had already been placed, and such long-term items as ships could not be canceled. As a result, organizational structure and weaponry are not optimized for the new task. A typical example is the F-104G Starfighter, originally procured to conduct tactical, nuclear strike missions deep into Eastern territory. Today the aircraft is used to fly conventional low-level close-support missions. The frequent training missions flown at low level by German Air Force wings tend to shorten drastically the service life of the aircraft. The F-104 was conceived as a high-altitude interceptor and is not stressed to absorb on a regular basis the heavy aerodynamic loads of flying close to the ground. The F-104, moreover, is not maneuverable enough to fly close-support missions effectively, nor is it an ideal gun platform for such work. A replacement is mandatory, but not yet in sight.

• The fourth factor seriously hampering combat readiness is the badly planned development and hasty acquisition of complicated weapon systems during the armed forces' formation. This led to considerable cost overruns or the introduction of technically faulty weapons and equipment. Examples are numerous: Early in 1960, twelve submarines were ordered, to be built of antimagnetic steel. After the first boats became operational, it was found that the steel corroded at a rapid rate upon immersion in sea water. The fault could not be remedied. Today only four of the boats are in service (a different steel alloy was used in their construction). The others serve as training hulks.

The Swiss-designed HS30 armored personnel carrier proved an absolute disaster. Thousands were acquired and their unreliability and general uselessness have become almost proverbial in the German Army.

The Atlantic antisubmarine warfare (ASW) aircraft, of which twenty were ordered, are, for all practical purposes, unserviceable. The highly corrosive effects of the northern sea air were not taken into account when the aircraft were built. After only three years of service, the aircraft are literally falling apart, and currently only four are operational.

These are the most blatant examples of a multitude of similar faults that can be traced back to the inexperienced planners and, in some cases, to poor performance by procurement officials. The picture extracted from the White Paper is not pretty, but at least the Defense Ministry had the courage to face up to previous errors.

The fault also extends to armed forces manpower

(*Continued on following page*)

Beefing up West German firepower are these rocket launchers for saturation bombardment. Mounted on armored truck beds designed especially for the job, the adaptable weapons pack a solid punch while also maintaining a key tactical characteristic of mobility.

policy. This, however, is not completely a case of misplanning at the highest level; it is traceable in large part to Germany's economic boom, which makes a military career financially unattractive to the young. The German armed forces presently have 460,000 men in their ranks, but more than 2,500 officer slots and approximately 25,000 positions for qualified NCOs remain vacant.

A way must be found to make service in the armed forces financially more attractive, with military pay scales increased radically. Minister Schmidt is attempting this by cutting back procurement, and feeding the funds thus saved into the pay structure. Should this prove unworkable, the armed forces will most certainly find themselves without adequate manpower in the second half of the seventies.

In any event, the specialists predict a troublesome future. Should the economic boom continue, young officers and volunteers probably will serve a short term, take advantage of whatever educational services are offered, and quit as soon as possible to take more lucrative jobs in industry. With this syndrome expected, intense planning to make military life more attractive to the young is under way. This spring, Minister Schmidt visited as many front-line units as possible. He sounded out opinions at all levels of rank, and the results are reflected in the White Paper.

The trend seems to go toward establishment of a professional army and the elimination of the draft. The rumored tentative target date for the realization of this plan is the second half of this decade. At present, Germany is committed by the NATO treaty to supply 500,000 men to joint defensive forces. About 450,000 are available at the moment, and Germany does not intend to increase the forces. As long as the NATO obligation exists, the draft system will have to be used, most experts believe. There is no hope of finding enough volunteers to reach this manpower level in the projected professional army.

However, planning for this envisioned army structure must be initiated now. In particular, ultramodern equipment has to be sought and introduced. German

Germany's tank forces are equipped with the battle tank Leopard, which has met with marked sales success abroad.

forces must have greatly increased mobility, better communications, and much more effective weaponry to compensate for the expected lack of manpower.

This is the background against which is scheduled the introduction of the multirole combat aircraft (MRCA) and a light, close-support aircraft, the French-German Alpha-Jet, in the second half of the decade. In the same category is an improved tank of

German Navy motor torpedo boats undertake a patrol. German naval forces are slated to receive new submarines as well as missile-armed, fast MTBs. The type shown here are of the Jaguar class.

The ultimate aim of Germany's defense policy is to create up-to-date military forces made up of career personnel.

German design, the Leopard II, to replace the now-defunct American-German Main Battle Tank 70. Also, development of a new family of armored personnel carriers on the basis of the very successful Leopard I tank has almost been concluded. A large number of highly mobile rocket launchers of a most modern design has been ordered, and novel antiaircraft missiles are under test. The Navy is slated to receive new submarines and missile-armed, fast motor torpedo boats.

These weapons require highly skilled personnel for their technically perfect operation. It seems unrealistic to hope that a draftee can learn to handle and maintain such weapons during his ten- to eighteen-month service time. This argues strongly for a professional army, since it is very unlikely that a future conflict will involve such masses of soldiers as were seen on the battlefields of previous wars. Also, to cling to the concept of a mass army of mediocre quality would be a waste of tax money, particularly if a smaller professional army of very high quality and firepower can be substituted.

Much of this reasoning is not set down in black and white but, if the road signs are followed, the German armed forces of the late 1970s will consist of a professional team of highly trained and well-paid defense specialists.

On the political side, the White Paper makes it abundantly clear that the German government is interested in international collaboration for development and joint construction of new weapon systems. The presently existing ties of German industry with counterparts in the US and Western Europe hopefully will be strengthened and new ones established.

In particular, such special programs as MRCA, the Franco-German trainer and missile projects will be used as guidelines for future ventures.

The White Paper observes that, unfortunately, the time is not yet ripe to establish a joint NATO or (if necessary) European procurement board, to satisfy the alliance's common needs. A future goal is such a system, funded by participating nations, and used to procure weapons and equipment for all. Financing would come via a joint budget.

The White Paper mirrors the efforts of the German armed forces to extract themselves from their present dilemma. Helmut Schmidt is considered by many as the best man ever to fill the post of Minister of Defense, and hopes are high that he will prove capable of pushing through the long overdue, but not too ambitious, reorganization and modernization plan.—END

Because of defense policy fishtailing, German Starfighters like these shown flying formation at right found themselves assigned to the low-level close-support mission, a role for which they were not designed and are hardly suited.

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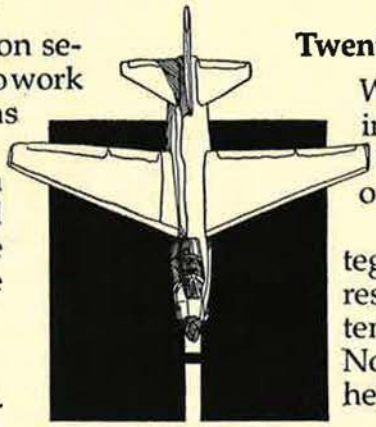

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Beyond fishing in the troubled waters of the Middle East, the Soviets are busily seeking to extend their influence in Africa and Asia, partially to gain maximum advantage over the US and its allies and as insurance, too, against Red Chinese ambitions . . .

Russia Looks Beyond the Middle East

By Ray Vicker

Reprinted with permission from The Wall Street Journal

IN THE office of one West European diplomat here in Cairo a map of the eastern hemisphere stretches on a wall beside an air conditioner which doesn't work. Dozens of pins with colored heads are stuck into capitals of various countries: Green for an unaligned nation, light red if the slant is toward Moscow, dark red for a Peking orientation, and blue when the pull is Westward.

Dar-Es-Salaam, Tanzania's capital, has both a green and a dark red pin, reflecting Tanzania's increasing coziness with Communist China. Pretoria, South Africa, has a blue pin only. "A map is a wonderful instrument," says this one-time geographer who now serves in his country's diplomatic corps. "Here you can see visually how the Soviet Union and Communist China are both thrusting into the Indian Ocean area, confronting each other just as both are confronting the West."

Thrusting Southward

The Soviet Union is indeed thrusting southward in a many-pronged campaign which may be obscured because of the current furor over the Middle East. To be sure, the Middle East does play an important role in that drive. Should the USSR obtain any influence over Arab oil, either directly or through providing "advisers" for Arab national oil companies, it would be in position to influence Western Europe's energy supplies. That hope is reason enough for the Soviets to inject themselves into the Middle East.

Yet the Middle East thrust is only part of a broader whole. In the Middle East the Soviets are, first, interested in retaining their position as champion of the Arab cause, even should peace come. Second, they want the Suez Canal reopened in a way that doesn't prejudice this first interest.

When this is understood, the overall global goals of the USSR become clearer. Those goals, summarized, are:

- To increase USSR influence in Africa and Southern Asia, including the Middle East.
- To counteract Communist Chinese influence in that area.
- To isolate America and its allies from this area in a sort of John Foster Dulles-style policy of encirclement and isolation. Anything which denied raw materials from this area to the United States, or which increased prices of those materials for the US, would be a plus for the USSR.

The Soviets realize that to be successful in this policy they must have nuclear parity or superiority to the United States. This they already have achieved, many observers believe. Strategic Arms Limitation Talks in Vienna, if successful, would assure that this situation continues without the need for an arms race that might make it economically impossible for the Soviets to undertake other tasks in its global campaign.

Kremlin leaders realize, too, that to conduct this campaign the Soviets also must become a naval power equal to or superior to the US. While both Britain and the US have sometimes seemed to be downgrading their navies in this nuclear age, the Soviets have been busily expanding first their merchant marine and now their navy. Navies are only obsolete in the nuclear age if nuclear weapons are to be the number-one line of defense. The Soviets are gambling that this will not be the case, but that conventional weapons may be a decisive factor in world power relationships for a long while to come.

It certainly is easier to use gunboat diplomacy in a place like Dar-Es-Salaam, for instance, than it is to attempt any nuclear threats. So the highly publicized Soviet Mediterranean fleet is only one part of an expanded navy, which steadily grows larger.

Already the nucleus of a Soviet Indian Ocean navy is shaping up, too. For years Soviets have used their large deep-sea-fishing fleet as the eyes and ears for their navy, and last year the Russians gained a foothold at Mauritius, the small Indian Ocean island state which resembles the popular concept of a south sea isle.

Under an agreement, the Soviets are providing Mauritius with modern fishing vessels and personnel to train the Mauritians in deep-sea fishing. There are now signs that the Russians would like to get harbor facilities at the Mauritian dependency of St. Brandon island. Currently, a cluster of Soviet naval vessels already is located on the broad expanse of the Indian Ocean, though the ships are somewhat handicapped by their distance from home bases.

Certainly, the trend of events in Africa and western Asia has in recent years improved the atmosphere for whatever extension of influence the Soviets contemplate.

In North Africa and the Middle East, leftist governments now rule in the United Arab Republic, Iraq,

Syria, Libya, and Algeria. In those nations the United States now is associated with "imperialism."

In Aden, capital of South Yemen at the base of the Red Sea, the Soviets already have filled the vacuum left by the departure of Britain. This vital seaport overlooks the entrance to the southern end of the Red Sea. The Soviets, through Arab clients, support Eritrean guerrillas who are trying to establish a new leftist state on the west side of the Red Sea. Eritrea currently is a province of Haile Selassie's kingdom of Ethiopia.

Russian influence played a role in last fall's leftist revolt in Somalia, the dirt-poor, dry nation at the horn of Africa. Somalia's 8,000-man army now has Russian "advisers." The revolutionary council which took power has declared its intention "to develop socialism."

Close to 500 Russian technicians and advisers now are in the Sudan, a nation which also experienced a leftist coup. A $100 million arms deal has been concluded in Khartoum, Sudan's capital, and Soviet military equipment already is pouring into the country.

Thus, it is evident that Soviet clients have just about encircled Ethiopia, long a strong American friend in this part of the world. One of the biggest air bases maintained overseas by the United States Air Force is at Asmara, Eritrea. Somalia claims Ethiopia's coastal strip, a contention that the Soviets are likely to support.

Ceylon and Infiltration

At the southern end of the Arabian peninsula, Russia is supporting rebels in Dhofar, a province of Oman. This sultanate is strategically located in a position to dominate the southern entrance to the oil-rich Persian Gulf. A recent electoral swing leftward in Ceylon has opened that island nation to Communist infiltration from both Russia and Communist China.

The Soviets seem to have the inside track in developing India's Gulf of Cambay oil, while India consistently leans more to the Communist than to the Western camp. Singapore considers granting port rights to the Russians while Russia courts Malaysia, using rubber purchases as a lever in political discussions.

It is the growing Soviet influence in that part of the world which helped prompt Britain to reconsider its policy on selling arms to South Africa. The US, however, still seems less concerned about the situation, for the Nixon Administration reports it has no intention of following Britain's lead in dropping the arms embargo to South Africa.

Communist China-Russian competition intensifies Soviet interest in the whole vast Indian Ocean area. In East and Central Africa, Communist China is building a railroad from Dar-Es-Salaam to Zambia. It is the biggest foreign aid project Red China has ever attempted. With the railroad, one may expect propaganda specialists who will try to undercut both the West and the USSR in that part of the world. The Soviets have been trying futilely to counteract the project with warnings about the dangers of Chinese infiltration.

Recently, President Nyerere of Tanzania laid the foundation stone of a new naval base to be built with Red Chinese help at Dar-Es-Salaam. A diminutive Tanzanian navy, consisting of six armed patrol boats, already has been supplied by the Chinese. Its crews currently are being trained by Chinese instructors.

Any reopening of the Suez Canal would greatly strengthen the Soviet hand not only in its competition with Red China but with the West. Currently the Soviet east of Suez campaign must be conducted via the long haul around the southern tip of Africa. This slows Russian aid shipments to North Vietnam and inhibits development of the Indian Ocean fleet.

The scope for Soviet troublemaking in this part of the world is virtually unlimited. Kenya may see a struggle for power when elderly Jomo Kenyatta, the nation's first and only president, dies. The Soviets have lost ground lately in jockeying for position there but have not given up hope for a leftist swing.

Ethiopia, too, may see a power struggle when Emperor Selassie passes from the scene. This may be the time when Eritrea flares into a much broader rebellion while Somalia asserts its claim to a big chunk of Ethiopia. Soviet and Red Chinese arms feed rebellions in the white states of South Africa and Rhodesia and in Portuguese-held Mozambique and Angola. Saudi Arabia and sheikdoms of the Persian Gulf make prime targets for Soviet-supported would-be rebels.

A Barrier to Red China?

The USSR still has not abandoned hopes for creating a southern Asian defense tier as a barrier to Communist Chinese expansion in that part of the world. It will be a lot easier to exert pressure in that direction once the Soviet Indian Ocean fleet becomes a more formidable force. This all adds up to a picture much broader than that supplied only by the Israeli-Arab war. The war though, to be sure, has provided a wonderful opportunity for the Soviets to press a broader drive which might be decades behind its schedule had there been no Israel in the Mideast to arouse Arab passions.

The Soviets seem little interested in crushing Israel in the present conflict, some knowledgeable observers here contend. The Soviets have been clearly emphasizing that nobody now wants to drive the Israelis into the sea, but the Soviets undoubtedly will want to make sure that, once peace comes, Suez Canal traffic will never again be subject to an Israeli veto.

It would not surprise some sources here if the Soviets demanded a right to station some troops along the Canal, with Egyptian acquiescence of course, when hostilities cease. Failing that, Russia may offer the UAR technical assistance in clearing the Canal and those technicians might wind up on the Canal indefinitely.

Having already gone so far as to station some of its military forces in the UAR, Russia is not likely to be turned easily from its overall global goals.—END

Ray Vicker has been a member of The Wall Street Journal *staff for twenty years and, since 1960, the* Journal's *European Editor. He is the recipient of several awards for foreign reporting and is the author of "How an Election Was Won, 1962" (Regnery) and of numerous articles. Mr. Vicker is headquartered in London.*

Contrary to the allegations of anti-ABM critics, the Safeguard concept is a stabilizing rather than destabilizing factor in the current international power equation. This is true not only in terms of our relations with the Soviets but also in Asia where unnecessary arms races can be avoided if we develop useful defenses now against projected Red Chinese missile power . . .

Deterrence, the ABM, and Stability in Asia

By Phillip Karber

IN MARCH of 1969, President Nixon announced his decision to deploy a limited ballistic missile defense system designed to fulfill three objectives:

- Protection of our land-based retaliatory forces against a direct attack by the Soviet Union;
- Defense of the American people against the kind of nuclear attack that Communist China is likely to be able to mount within the decade;
- Protection against the possibility of accidental attacks from any source.

In this first statement on ABM, the President emphasized the need to protect our land-based deterrent force from a Soviet first-strike. He noted that the most extensive ABM area defense "still could not prevent a catastrophic level of US fatalities from a deliberate all-out Soviet attack. . . . And it might look to an opponent like an offensive strategy threatening the Soviet deterrent." Thus, the initial construction of the Safeguard ABM reflected American recognition that, by the early 1970s, continued Soviet deployment of the SS-9, with its massive throw-weight and antisilo capability, could destroy ninety percent of our land-based retaliatory missile force, leaving only our sea-based Polaris force and manned strategic bombers.

The bombers are particularly vulnerable to the Soviet SCRAG, an orbital bombardment system whose limited accuracy is offset by the advantages of short warning time and extremely high-yield megatonage. Only half of the Polaris force is on station at one time and its submarine-launched missiles cannot be fired in salvo but would arrive over their targets at different times. Hence, even a rudimentary Soviet ABM system could dilute the deliverable second-strike destructive capability to a point where it would inflict less damage than the USSR received during World War II. Thus, the American threat of unacceptable retaliatory damage as a deterrent to a Soviet first-strike would disappear.

Soviet technological developments, particularly in missile accuracies and in multiple targeting, and their deployment rate of the SS-9, have confirmed the validity and wisdom of the Nixon Administration's caution in safeguarding the American land-based deterrent force against the Soviet threat. An inherent assumption of this deterrent policy, so obvious that it is often forgotten, is that the Soviet Union will not attack American missiles or cities unless and until it has a preemptive capability. Lacking that capability, an assault would bring on self-destruction. While the Soviets may be aggressive, few believe them to be suicidal.

Nevertheless, on January 30, 1970, in asking for an expansion of the Safeguard ABM, President Nixon proclaimed a need to defend American cities from the small but growing Chinese nuclear stockpile. He said, "Area defense is absolutely essential as against any

minor power like China." This demand for total protection from the Chinese while accepting a deterred vulnerability in the case of the USSR has been perceived as policy dissonance by Asian scholars and foreign policy analysts who have rejected the myth of a "Yellow Peril." They point to two decades of Chinese foreign policy that has been generally rational and cautious despite the belligerent rhetoric which often accompanied it. Since the Chinese would not be able to endanger our deterrent forces for the remainder of this century, one might logically ask: If deterrence is expected to be effective against the Soviet Union, why not against Communist China?

The complicated answer, simply stated, is that the United States is attempting to deter more than just a Chinese attack on American cities.

One can find an analogy in the strategy the United States has attempted in Europe. In the 1950s, we sought to exploit our monopoly of nuclear power not only by threatening to retaliate against a Soviet attack on America but by extending this deterrent to cover an attack on Western Europe as well. However, as the Soviet nuclear arsenal and delivery capability grew and became capable of targeting at least a few American cities with high probability of success, the Soviets did not become noticeably more irrational. Adverse effects were noticed among our European allies, however. They recognized that, if the US extended deterrent was to protect them in case of a Soviet conventional attack or even mild coercion—such as during the 1956 Suez crisis—the US would have to be willing to sacrifice Washington, New York, and Los Angeles for Bonn, Paris, and London. Whether we would have done so then—or would now—is open to speculation, but the important point is that our allies did not believe we would. Thus, the United States still maintains hundreds of thousands of troops in West Germany as hostages to our credibility, while the French have opted for nuclear self-reliance, very nearly destroying the Western alliance.

The two largest and most important nonnuclear states in Asia—India and Japan—are likewise dependent upon an extended American deterrent. With the Japanese, it is a matter of explicit treaty commitment; and, while an American nuclear umbrella over India is a more tacit obligation, it is binding out of necessity. The American extended deterrent is a necessity, not because of our altruistic desire to protect the people of Bombay or Tokyo or even because of our responsibility under the international legal obligations of the Nuclear Nonproliferation Treaty. It is a necessity because of the catalytic potential of an insecure India and Japan.

Japan is the first and only country in the world that has outlawed war in its constitution. Yet the success of this admirable feat depends on the Japanese belief in American willingness to deter Chinese nuclear and conventional coercion. When Los Angeles, San Francisco, and Seattle fall within the range of Chinese ICBMs, will the United States still extend its nuclear umbrella so generously? The Japanese can hardly be faulted if they question our credibility. And with their scientific and technological base, their nuclear reactor capabilities, and possession of a delivery missile, the temptation to provide for their own nuclear security will undoubtedly grow in direct proportion to the retraction of our deterrent. Is this what the critics of an area ABM system want:

- A remilitarized Japan?
- A sixth nuclear power?
- A tripartite Asian arms race among Japan, China, and the USSR?

India has refused to sign the Nuclear Nonproliferation Treaty unless the United States, either unilaterally or in conjunction with the Soviet Union, provides a nuclear guarantee against Chinese aggression. While exercising a nuclear option would absorb desperately needed resources, the Indians already possess adequate fissionable material and the only plutonium separation plant to have been built by a nonnuclear power. This capability would provide India a bare minimum deterrent against Chinese nuclear coercion. More importantly, it could redress the imbalance in land forces along the Himalayan border. Of course, such a small posture, depending on conventional delivery vehicles, would be highly susceptible to preemption. Pakistan undoubtedly would go bankrupt trying to follow the Indians, and this would no doubt precipitate a mass desertion from the Nuclear Nonproliferation Treaty.

While a security guarantee from the United States could forestall a nuclear India with all the destabilizing consequences, such a commitment would become overextended as soon as American cities became probable Chinese targets. It is credible to assume that America would risk nuclear war in defense of its own cities. It is not credible to presume that the United States would expose these cities to destruction merely to enforce the territorial integrity of a distant friend. The United States could transplant the hostage concept from Europe to India; that is, deploy so many US troops on the border that they would have to be protected by a nuclear umbrella. Is this what the critics of an area ABM want: to withdraw a half million men from Vietnam and place them in the Himalayas?

To isolate ourselves from Asia by allowing American cities to become vulnerable to Chinese warheads is to unleash a nuclear anarchy that will inevitably engulf us in catastrophe. Whether we like it or not, a US failure to provide insurance against the dangers of nuclear proliferation could be as destabilizing to international equilibrium as the most provocative arms race. The extension of Safeguard into a limited-area ABM system, one that does not endanger the Soviet deterrent, demonstrates US responsibility not only to abstract principles of world order, but also to the very immediate need of keeping the American people free from the threat of becoming hostages in an Asian nuclear war.—END

Phillip Karber has for the past two years served as research assistant on national-security and arms-control affairs to Rep. Craig Hosmer, Republican of California. He is at present a Fellow at the Center for Strategic and International Studies, Georgetown University, Washington, D.C. He has contributed articles on military affairs to a number of American and foreign publications.

"I was alone. And I was wearing no parachute. Otherwise, I would have used it immediately, for my vision was beginning to cloud. If I blacked out, my chances of returning safely to mother earth would be no better, and maybe worse, than those of an astronaut imperiled in space."

Lost in Soaring Space

By Beirne Lay, Jr.

A REDTAILED hawk, circling a hundred yards from me on motionless wings, cocked his head my way and observed that I was climbing faster than he, in my single-place Schweizer 1-26 sailplane. The bird steered at once in my direction and joined me in the stronger lift of the thermal I was working above the hot floor of Southern California's Tehachapi Valley 2,000 feet below us. We continued to gain altitude together in friendly formation.

Imperceptibly at first, the hawk dissolved into *two* hawks. But their movements were perfectly synchronized. Too perfectly. There could be only *one* hawk.

I was experiencing split vision.

Straightening out my turn immediately, I was not yet alarmed. At age sixty, and overdue for glasses I'd been reluctant to start wearing, I had experienced double vision for a few seconds once or twice in recent weeks, and two years previously, a mild brief dizziness in flight. This, too, should pass.

Vision returned quickly to normal as I flew straight and level. Then the situation abruptly changed to a matter of life and death.

The horizon commenced to revolve like the outer rim of a phonograph record. With me at the center. Slowly at first. Then more rapidly. I took my hands and feet off the controls. You can't control a sailplane or an airplane when your own built-in guidance and navigation system has suddenly gone haywire. I now had no more orientation than Astronaut Neil Armstrong in his Gemini spacecraft, after a runaway thruster threw his ship into an uncontrollable roll.

In the words of Astronaut Lovell from Apollo-13 on the ill-starred night of April 13, 1970, it was obviously a case of, "Hey, we've got a problem here!"

I was alone. And I was wearing no parachute. Otherwise, I would have used it immediately, for my vision was beginning to cloud. If I blacked out, my chances of returning safely to mother earth would be no better, and maybe worse, than those of an astronaut imperiled in space. I had no radio, and there were no ground controllers to advise me even if I had one.

Space is space and gravity is gravity. For me, at this moment, it mattered little whether I was 200 million miles from earth or 2,000 feet. In my modest space venture by sailplane, a miscalculation in extremity now could ensure the same ultimate result. My fate was now entrusted completely to my own hands. Or rather, head. Survival would hinge on what actions I took next, in the right sequence. And damned soon.

I slapped my cheeks with both hands. As hard as I could. Then the back of my neck. The tingling pain seemed to stimulate blood circulation. I tried breathing more deeply and rapidly. It seemed to help. I continued to see. Dimly.

"Don't lose consciousness!"

I yelled it to myself, out loud. I *willed* it, as I fought to hold onto my one link to some kind of minimum control—to be able to see. Even though what I was seeing was swimming around, meaningless in terms of reference. Had I been standing or sitting in my living room, I knew with terrible certainty that I would long since have spun helplessly to the floor.

First decision? Latch on to some point of reference, anything to stop the turning, keep the wings level, and retain safe altitude. There was a familiar radar tower to the east, upwind. Important. I must stay headed into the wind if I could to avoid being drifted downwind from the landing strip, which had been close by beneath me when I met the hawk.

The radar tower revolved from my wingtip toward the nose of my sailplane. I got back on the controls.

"Now!"

I stopped the radar tower dead center above the nose and held it glued there. Both continued to revolve in tandem because of my sickening disorientation. But I knew that the tower was stationary, a spar in a lonely sea. So long as I flew formation with it, even

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Beirne Lay, Jr., is perhaps best known as the coauthor of "Twelve O'Clock High." A graduate of Yale, he completed Air Corps flying training in 1933 and commanded an Eighth Air Force heavy bomb group during World War II. Colonel Lay was shot down over France in May 1944, evaded capture for three months, and made his way back to Allied lines. In 1963, Colonel Lay, a Charter Member of AFA, retired from the Air Force Reserve. He is now a free-lance writer, living in California.

though we appeared to be revolving together, and if I kept my wings level, I *had* to be flying in a straight line, forestalling any turn that could accelerate into loss of control and a plummeting dive—a sailplane pointing straight down will drop cleanly as a knife. And as quickly.

With my wings now level, logic reassured me, but only logic, of the reality that I was stabilized, regardless of the false information that my dizzy senses were feeding to my human computer.

Next decision? Should I try to get down and land right now, no matter what? While I could still see? Before the die might be cast irrevocably against a blinded or unconscious pilot? Or should I try to maintain the relative safety of my altitude where nothing ill could befall me, until the physical emergency passed?

Happily, I felt no nausea. There was no indication whatever of heart distress. All right, it must be a phenomenon of vision alone, then, possibly coupled with a spell of high blood pressure, although the latter had never appeared on my medical record. Or could it be some kind of stroke?

I opted against an immediate attempt at reentry to the landing strip, despite the instinct to get back to terra firma. The prospects of being killed due to a loss of control near the ground were far greater than in staying up here, riveted to that radar tower, buying time to recover my equilibrium. In a panicky effort to land, I could impact just as hard from 100 feet as from 2,000.

I continued to whirl round and round on that infernal phonograph turntable. My tongue went dry. Two, maybe three, more minutes passed. The enormous concentration that gripped me froze out nearly all sensation of fear.

I kept up the stinging slaps to the skin of face and neck. I could still see. And I was fully conscious. Wings level. Airspeed just right for conserving height, flying straight at my landmark. From long experience, I could sense the airspeed by ear, by the gentle hissing of the slipstream past my canopy, without recourse to cockpit instruments which, in any case, I could not read.

The vivid sensation that I was in a steady turn to the left persisted. Experimentally, ready to try anything to combat it, I closed my eyes. It was a mistake. A roaring in my ears began. Reopening my eyes, I couldn't see *anything*. Seconds passed. Then the blindness proved to be only temporary. The roaring ceased. Vision returned. It had been a close thing.

Little by little my "turntable" began slowing down. Slower. Slower. Now I could focus on my altimeter. I'd lost only 400 feet, apparently sustained by the east-west shearline of air currents that is indigenous to the valley.

Mercifully, the merry-go-round ground at last to a complete halt.

Taking my time, I flew gratefully for several more minutes to make sure that the hidden adversary was not preparing some new assault. Then I shoved the nose down, pulled the dive brakes, and glided down steeply to the traffic pattern and on to the most beautiful, feather-duster landing I've ever made.

But my heart was heavy. I knew that it was the last landing, in all conscience, that I would be able to make alone in a sailplane. Still, there are compensations.

In the magnificent company of hawks and buzzards and giant California condors, risen aloft in evolution from a different branch than the human mammal, a man is blessed to have experienced, in mutual free soaring flight, a closer communion with his Creator.

All the time, I had been in touch with Mission Control.

Out there.—END

The reusable Space Shuttle will go up & down,
up & down, up & down, up & down, up & down,
up & down, up & down, up & down, up & down,
up & down, up & down, up & down, up & down,
up & down, up & down, up & down, up & down,
up & down, up & down, up & down, up & down,
up & down, up & down, up & down, up & down,
up & down, up & down, up & down, up & down,
up & down, up & down, up & down, up & down,
up & down, up & down, up & down, up & down,
up & down, up & down, up & down, up & down,
up & down, up & down, up & down, up & down,
up & down, up & down, up & down, up & down,
for the price of launching one of these.

Until now, the attraction of any space launching has been the complex sequence of the launch itself.

As things stand now, an expensive launch vehicle boosts its payload and then falls uselessly into the sea.

When NASA's manned space stations are in orbit, they will have to be frequently supplied from earth. So a launch will have to be less of an event and more like a regularly scheduled airline operation.

Using one-shot launch vehicles each time would be too expensive.

NASA thought there had to be a better way to handle this shuttle traffic.

There is.

It's a recoverable, fully reusable booster and orbiter: a space shuttle.

What it will do is this:

It will put an end to having a cast of thousands attend to every launch.

It will put an end to dumping expensive launch vehicles into the sea.

Once the orbiter is on its way, the crew will fly the booster back and land it, about the same way a plane lands. Then the booster will be checked, refueled and readied for another launch in less than two weeks. Plans are for the shuttle to operate up to 100 times.

It will put an end to having every manned space mission wind up as a recovery operation at sea. Once the orbiter has unloaded its passengers and cargo at the space station, the orbiter's crew will fly it back and land it, about the same way a plane lands.

It will make more than 50 trips for the cost of launching one manned mission today.

It will be able to tend or recover unmanned satellites.

It will carry several passengers and up to 25,000 pounds of payload.

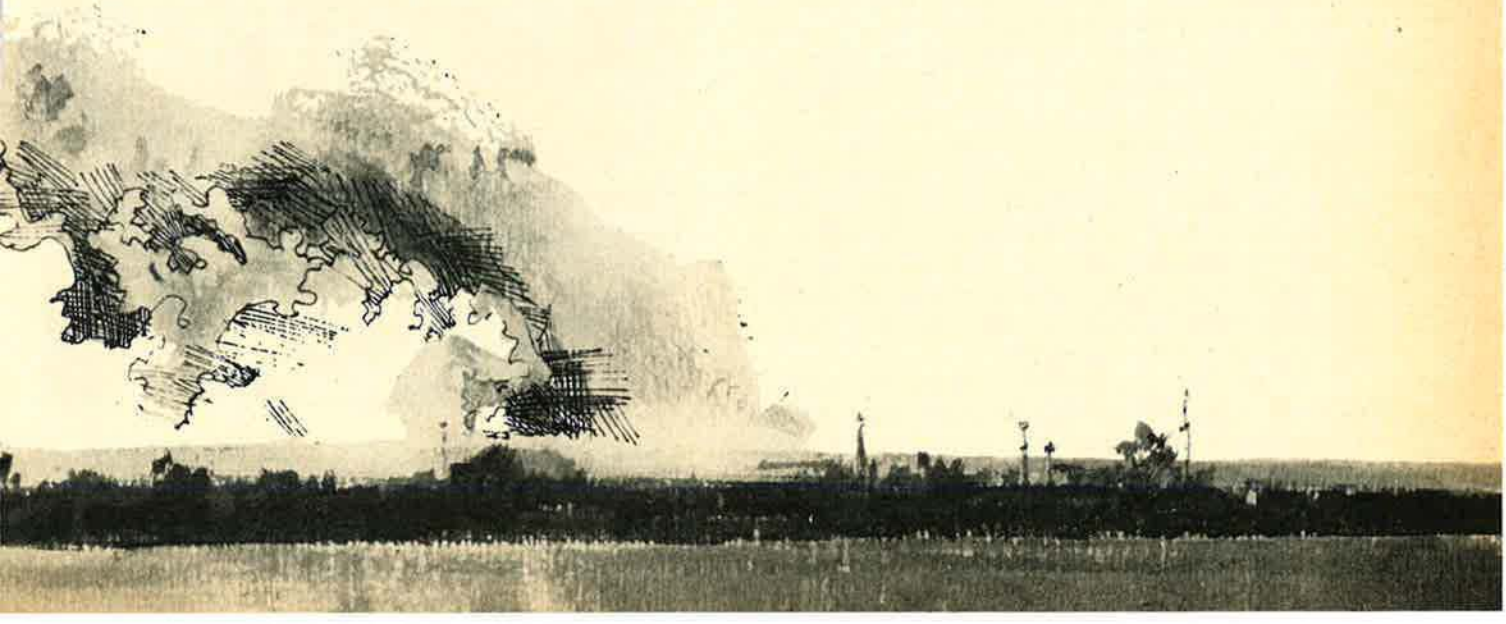
And it will reduce the cost per pound of transporting cargo to one-tenth what it costs today to get into space.

The reusable space shuttle challenges a number of people's technology. Including our Convair division's.

At General Dynamics, we put technology to work solving problems from the bottom of the sea to outer space... and a good bit in between.

GENERAL DYNAMICS

1 Rockefeller Plaza, New York, N.Y. 10020



With the US space program short of money and long on ideas and with Europe now trying to create a more unified and centrally managed space program, now is the time for space planners on both sides of the Atlantic to work vigorously toward real partnership in space research and development . . .

Now is the Time to Seize the Time for US-European Space Partnership

By William Leavitt

SENIOR EDITOR / SCIENCE AND EDUCATION

TO BORROW from the sloganeering of the New Left, now is when US and European space planners should "seize the time" to work toward a real partnership in future space projects. The political and fiscal conditions on both sides of the Atlantic are ripe for such a marriage. Everyone would gain. Out of such a partnership could emerge successful developments along the lines of the Space Shuttle, an idea that has been talked about in Europe for several years, and the large space station. Both could serve civilian and military needs of the Western alliance.

Why now? Because Europe, beset for a long time by nationalism in the space field, seems to be working, at long last, toward the creation of a European "NASA" that would bring together the expertise, and create a focus for energies and resources, of the principal European countries. Up to now these assets have been dissipated in too many abortive efforts to build "national" space programs on fiscal and technical bases that are too small. To say that is not to denigrate the considerable skills of European space technologists. It is rather to suggest what the most forward-looking among them have known and often said all along—that centralization of effort is really crucial if there is to be a *European* space program.

At the same time, in the United States, the prestige-fired fiscal support of multibillion-dollar space projects is rapidly shrinking. Indeed, space not only is no longer sacrosanct but is also a scapegoat for critics demanding the virtual dismantling of the US space program because they view the massive effort of recent years as a costly spectacular, the money for which they believe should have been used for more down-to-earth social purposes. The budgets NASA will have to live with for the next several years are in the $3 billion-plus range, a lot less than during the halcyon years of the

—Wide World Photos

Outgoing NASA chief Thomas O. Paine announcing cancellation of two Apollo missions. The reason: scarce money.

Apollo buildup. Considering the impact of inflation, such funding levels are even smaller than they seem.

The impact of these cuts and the deemphasis of space-program priorities have already been demonstrated by the reduction in the number of projected Apollo moon landings and by the fallback to studies rather than developmental programs for such projects as the Space Shuttle. A signal of personal frustration with the current malaise was the resignation of NASA's Administrator, Dr. Thomas O. Paine, who decided to return to his old company, General Electric.

These are grim days for space on this side of the ocean. All the hoopla in the world about US prestige won't change things. The man in the street, the same fellow who in the late 1950s and early 1960s was enthusiastic about catching up with the Russians, is far more concerned these days about the galloping rise in the cost of living, the war in Vietnam, and crime in the streets. His preoccupations are reflected in the actions and attitudes of the Congress and of the Administration.

But out of adversity can come hope. The decline, comparatively speaking, of the US space program and the movement in Europe toward a more unified approach to space technology, combine to provide an opportunity for real partnership. More cooks in today's kitchen would enrich the broth. To such a combination, the US could bring its vast experience of the past decade and certainly some significant funding, even in a tightened money situation. The Europeans could bring fresh enthusiasm, a good deal of skill, financial support, and developmental philosophies that might be a good deal more frugal, since they have been accustomed to small budgets. Money and time could be saved all around.

As to the benefits, they would be legion. A US-European Space Shuttle and large-space-station program, for example, could bring together, not only for planning, but also for operation, the best space-technology minds in the West. The cooperation would not have to be confined to such well-known programs. The same joint approach, with no "junior partners," could be undertaken across the spectrum: in weather satellite programs, in earth-survey satellites, in air-traffic-control satellites, just to mention a few. The list is long. And the time is ripe. In a sense, it would be the Old World coming to the aid of the New.

As to military benefits, NATO, which searches for new ways to meet a continuing but ever-changing threat, could receive fresh impetus. Space technology has already shown its usefulness as a defense-communications tool, not to mention the enormous record piled up by strategic-reconnaissance satellites. Surely, these capabilities have potential utility as full-blown NATO hardware. That NATO can do such things was demonstrated by the successful launch last March of the NATO-1 communications satellite. Twelve nations are building ground terminals to connect with the system. Would a NATO observation satellite have shown the Russian troop buildup that preceded the invasion of Czechoslovakia? From all accounts, the West was surprised by the move. In a period when space technology will probably be used extensively by the United States to police any arms-control agreements that may be reached with the Soviets in the Strategic Arms Limitation Talks, NATO ought to prepare for a sophisticated role in the new environment that may develop.

International cooperation is not easy in an era of rampant nationalism. That's clear enough. But difficulty does not equal impossibility. These days, America's space program is struggling to maintain its vigor while Europe's effort is trying to be born. Both sides have a good deal to offer each other. They should seize the time.

And the Russians?

What are the Russians up to in space these days? Because of the tight secrecy with which they operate their program, no one knows exactly, of course. But one of the closest observers of the Soviet program, Dr. Charles Sheldon II of the Library of Congress in Washington, believes that they are working on space inspection and destruction capabilities.

Dr. Sheldon, a veteran of the staffs of the Senate space committee and the National Aeronautics and Space Council, bases his surmise on some peculiar events that took place in 1969 when Russian Cosmos satellites 249 and 252 each exploded after being maneuvered close to an earlier-launched Cosmos-series satellite, number 248.

Such capability, if it exists, as Dr. Sheldon believes, has obvious military significance, although in his view there seems to be no immediate danger of clandestine knockout of US orbiting vehicles.

There's no question in Dr. Sheldon's mind that, despite their loss to the US in the moon sweepstakes, the Soviets are continuing their overall space program at a steady clip. He believes that something went awry in the Russian program in 1969 at just about the time the US was readying its Apollo-11 mission, something that took them off the moon-landing track, and that the launch of Luna-15 that hard-landed on the moon —rather pointlessly—signaled whatever difficulties they were having at the time.

As to orbiting weapons—the next step beyond the Fractional Orbital Bombardment System (FOBS)—Dr. Sheldon believes there are none being placed in space on a permanent basis and that the Soviet policy is rather to launch enough FOBS missions (without actual weapons) "to shake us up" while avoiding permanent stationing of the weapons in the void. The figures would seem to bear him out. There were two FOBS launchings in 1966, nine in 1967, two in 1968, one in 1969, and one launching as of late August 1970.

As to the general thrust of the Soviet program, Dr. Sheldon sees the Russians concentrating on applications flights while at the same time working on the big new booster that Western observers have been waiting for for several years. When they get that booster, he believes, they'll be in a better position to advance their declared purpose of building a large space station in earth orbit. Like us, they are thinking about manned interplanetary flight in the 1980s. Dr. Sheldon believes, too, that their scientific satellite program has not been as effective as the American effort, possibly because of problems the Russians may have had in the handling of data.

In terms of launches, the US program peaked in

(Continued on following page)

1966 (seventy-three launches that year) while the Russians peaked in 1968 (seventy-four launches that year). At present, working with a smaller gross national product, the Soviets are investing about two percent of their GNP in space, while the US is down to one-half of one percent.

As is the case in the US, the largest element of the Soviet program, in terms of launches, is military. Their reconnaissance satellites perform various jobs. Some involve missions of eight to thirteen days and return packages directly to earth, while others, nonrecoverable smaller spacecraft which stay up only briefly, could be performing "ferret," *i.e.* electronic eavesdropping missions and, possibly, command and control missions. Dr. Sheldon also suggests that the Soviet Molniya communications satellite system may be working part-time, during passes over North America, as an early-warning satellite.

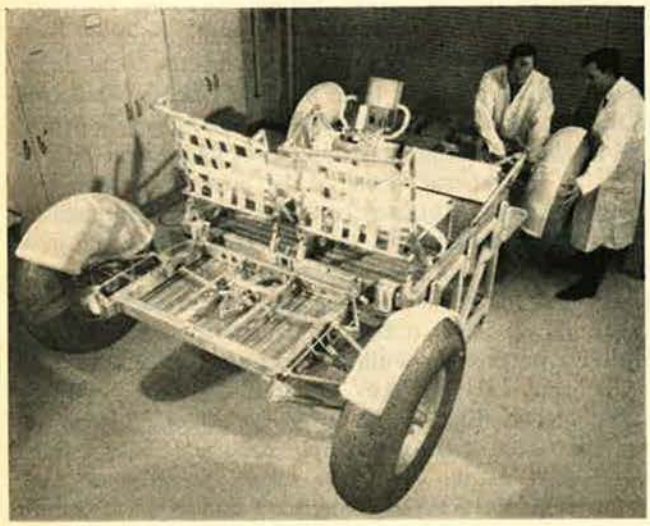
In the weight-lifting competition, the US, once far behind, has long since pretty much caught up. As of mid-August, we had put some 4.25 million pounds into space, compared with the Russians' record of some 4.5 million pounds.

The main point of Dr. Sheldon's analysis would seem to be that the Soviets, in their dogged way, are pressing ahead with their space program, despite setbacks they have suffered, and that they view the effort as practical and necessary as a spur to their national technology. They also appear to view highly sophisticated reconnaissance satellites as quite essential to any arms-control agreements that might emerge from the SALT talks.

Space Capsules

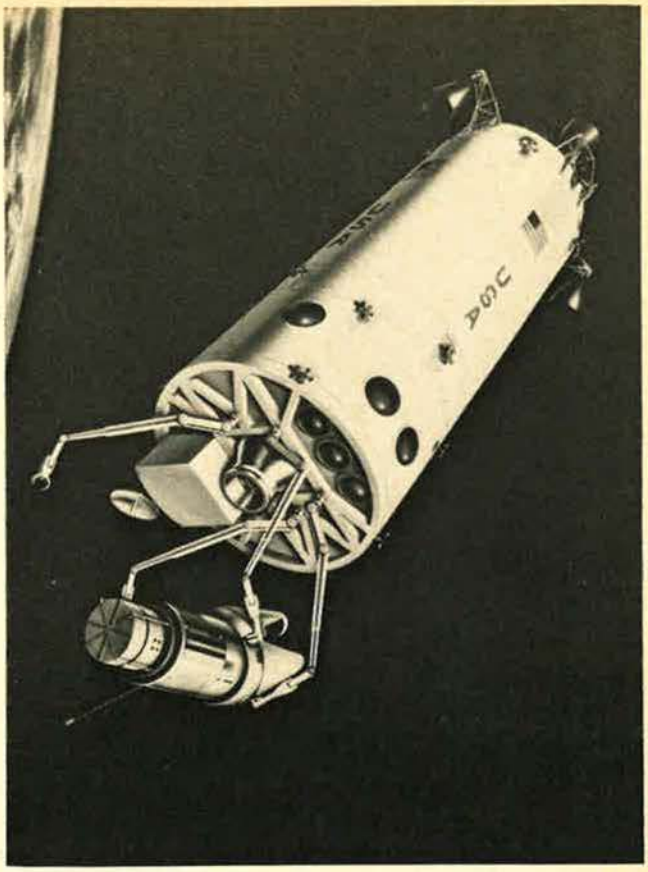
One of the most perceptive legislators on Capitol Hill in the field of science policy, **Rep. Emilio Q. Daddario,** Democrat of Connecticut, has entered the hustings in his home state as his party's candidate for the governorship. During his tenure as Chairman of the House space committee's subcommittee on science, research and development, Representative Daddario fought for a national program of technology assessment that would provide early warning of the social consequences of new technology. In the early days of the space effort, he led a successful fight to force the efficient use of existing military capabilities in the field of aerospace medicine by the then-new National Aeronautics and Space Administration. Also during his space committee service, he campaigned for a greater role for the National Science Foundation in the funding of research and development and the ordering of national science and technology priorities. He is credited with forging new links between Congress and the scientific community through his setting up of a prestigious science and technology panel, which periodically briefed his space committee and the public on new technology . . . **General Electric's Space Systems Division** at Valley Forge, Pa., is designing a full-scale mockup of an earth-survey laboratory module. The effort is part of GE's joint endeavor with **North American Rockwell** to develop concepts for an orbiting scientific laboratory that would accommodate a dozen men for several months at a time. GE envisions three different types of space-station labs: integral labs inside the station, modules that would be connected to the main station by docking, and detached modules that could operate independently of the station . . . **Boeing Co.** has completed its first operating tests of a large wheel assembly for the Lunar Roving Vehicle that is scheduled for use by American astronauts during future Apollo missions. The tests were conducted under simulated space conditions in a vacuum facility at the Boeing Space Center, Kent, Wash. **General Motors** is a major subcontractor on the project . . . **Lockheed Missiles and Space Co.** at Sunnyvale, Calif., is continuing studies of the "OOS"—the orbit-to-orbit shuttle, or space tug, which would be a principal component of the projected US Space Shuttle system. The Air Force

This is a GE conception of an earth-survey laboratory module for possible use with a large manned space station accommodating twelve men, a project for the '70s.



Boeing Co. has completed first tests of a Lunar Roving Vehicle wheel assembly in simulated space conditions at Kent, Wash. The vehicle will be used in Apollo programs.

Cornell Aeronautical Laboratory, Inc., Buffalo, N.Y., has developed a new time- and money-saving missile testing system, using models, for Lockheed under a USAF contract.



This is a Lockheed artist's conception of how an orbit-to-orbit (OOS) shuttle, or "tug" might retrieve satellites in space or perform maintenance on them in orbit.

is expected to ask for industry design proposals for the OOS later this year. Lockheed's OOS program manager, James H. Guill, views it as ironic that OOS hasn't gotten much public attention because, without the "space tug," the better-known systems—the Space Shuttle itself, the manned orbiting station, and the nuclear-powered shuttle—"couldn't be nearly as useful." Lockheed's technical approaches to the space tug are to some degree based on the long-used Agena vehicle, which has performed myriad military and civil missions. Among the expected missions of the tug would be: rendezvous with the main Space Shuttle and transporting its payloads to harder-to-reach orbits or trajectories; carrying manned spacecraft from lunar orbit to the moon's surface; doing maintenance on orbiting satellites or retrieving them for analysis back on earth; and hooking onto a nuclear shuttle to give it extra propulsion for deep-space planetary missions. Lockheed's Guill indicates that, while the OOS could be built in all sorts of shapes and sizes, depending on missions, it will probably be basically cylindrical, from fifteen to twenty-two feet in diameter and, including payloads, up to about sixty feet long. The modular method may well be used, with separate sections for crew, cargo, electronics, and propulsion, all easily changed around for different missions.

If you're in aerospace technology and have what you think are some good ideas on how to attack the environmental-pollution problem, put pen to paper and enter the current **Technology Utilization Contest** being cosponsored by the American Astronautical Society and the American Institute of Aeronautics and Astronautics. Contestants who are adjudged by a special government-industry panel to have suggested the ten most significant ideas on applying aerospace technology will receive $2,000 in prize money, to be donated by **General Electric's Space Division, Goodyear,** and **Bell Aerosystems.** Winners will receive their awards at a seminar to be held in November at Arkansas Governor Winthrop Rockefeller's farm estate outside Little Rock, Ark. For information, contact **Fred Forbes,** Chief of Technical Activities at the Air Force's Aero Propulsion Laboratory, Wright-Patterson AFB, Ohio, who is heading up the contest program.—END

After more than a decade of pioneering legislative work on Capitol Hill as a member of the House space committee in the field of science policy, Rep. Emilio Q. Daddario, Democrat of Connecticut, has entered the hustings as candidate for governorship of his home state.

Emotional critics of ROTC on campus have the intellectual duty to ask themselves whether driving officer training from the universities would not lead to the very phenomenon they profess to fear: the Prussianization of the American military. But logic is not the forte of those who shout before they think . . .

ROTC: From Riot to Reason

By Edward Bernard Glick

LIKE any other citizen, an American college student (and his professors) has a perfect right to his own psychological, philosophical, political, practical, and purely personal and private reasons for adopting positions on public issues. If one of his credos is to be against all wars, or if he opposes only the Vietnam War, he also has a perfect right not to care a tinker's damn about how and where the US armed forces get their officers. Of course, whatever his views, he will probably retain some interest in the question if the officer-selection process affects him directly or indirectly through such means as military conscription or a compulsory Reserve Officer Training Corps program on his campus.

If the student is either a selective or a consistent pacifist, he can always argue that if you do away with armies and their need to deter or engage in any kind of war for any kind of reason you won't need officers. And if you don't need officers, then you needn't concern yourself with such problems in a democracy as guarding against Prussianism, or the Garrison State, or the Military Mind, or the Closed Military Caste, or even the hallowed American principle of Civilian Control of the Military. No armies, no problems.

But what if the student or nonstudent has concluded that some kind of military establishment is still required in America, if only temporarily? Committed to peace, he may have to come to that conclusion out of knowledge, as well as feeling, and with the sincerest conviction and the greatest unhappiness. He may believe that we need more democratically responsive armed forces, smaller armed forces, less exotically equipped armed forces, cheaper armed forces, less internationally involved armed forces, perhaps all-volunteer armed forces, and armed forces that have no damned business being in or staying in Vietnam—but armed forces, nevertheless. Then, if he really is a concerned citizen on or off the campus, he has to care, and care honestly, about how and where and at what cost we get our military officers.

He must have an additional concern. He must also care about the kind of human beings these military officers are or should be in a democracy, about the kind of education they get, and about the places where they get their education.

The United States gets its active-duty officers from several sources. We have the four service academies—the Military Academy at West Point, the Naval Academy at Annapolis, the Air Force Academy at Colorado Springs, and the Coast Guard Academy at New London, Conn. We have Officer Candidate Schools (OCS) and Officer Training Schools (OTS). We have direct commissions into the services for professionally trained people such as physicians, psychologists, veterinarians, nurses, dentists, lawyers, chaplains, and others. We have some battlefield commissions of enlisted men. In the case of the Marine Corps, we have the so-called Platoon Leaders Course. And we have the ROTC, from which most of our officers come.

Since so many officers come from ROTC, both the universities and the military are vitally interested in the future of ROTC, albeit for different reasons. The students cannot ignore the Vietnam War, its impact on their lives, and the anti-ROTC sentiments of some of their peers, who in extreme cases will use intimidation or violence to "get those killers off the campus." Nor can the military ignore its dependence on ROTC and the fact that freshman enrollment in the program appears to be dropping all over the nation. A sample of thirty campuses, taken by the New York *Times* in October 1969, showed this trend not only at Ivy League colleges such as Harvard and Columbia, but also at places like Mississippi State, Berkeley, Colorado, Nebraska, five colleges and universities in Oklahoma, Ohio State, and the Universities of Mississippi, Indiana, and Michigan. The trend will probably continue.

Some History

How did the military become so dependent on ROTC? From our earliest years, two military traditions have competed for attention and acceptance in

America. The first called for small, professional armed forces led by a highly trained career officer corps. The second called for large armies of citizens to be raised only in times of emergency. The great clash between the two traditions came during the Civil War. And it was precisely because the Civil War proved the need for more officers who could also understand nonprofessional enlisted men and draftees—plus the traditional American reluctance to expand the military academies to any great degree—that Representative Justin Morrill included provisions for offering military courses in his monumental Land Grant Act of 1862. As he phrased it in his advocacy of the Act: "Something of military education has been incorporated in the bill in consequence of the new conviction of its necessity forced . . . by the history of the past years."

If the Morrill Act was the first great ROTC milestone, the second was the National Defense Act of 1916, which authorized ROTC units in roughly the form we know them today. It was from this Act that the first Army ROTC units came in 1916, the first Navy units in 1926, and the first Air Force units in 1946. The third milestone, the one that provides the present statutory basis for the Reserve Officers Training Corps, was the ROTC Vitalization Act of 1964.

Many charges are made against ROTC, and I shall deal with some of them later. But one that needs scotching at the outset is that it was the military that decided whether an ROTC program on a particular campus would be compulsory. Neither the Morrill Act of 1862, the 1916 Act, nor the 1964 Act ever made ROTC mandatory on any campus. Where it has been compulsory, *it was made so by state law or by university regulation,* usually for reasons of patriotism. Today, the overwhelming majority of ROTC programs is voluntary. As late as February 1950—*before* the Korean War and *long before* the Vietnam War—the National Council Against Conscription (which was also against ROTC) was fair enough to say that "some colleges with compulsory ROTC create the impression that it is the federal government and not the college that is responsible." Citing college catalogs and correspondence, the Council proved that among the colleges that were doing just that at the time were the Colorado School of Mines, the University of Alabama, the University of Nevada, the University of Hawaii, and the University of Maryland.

Anti-ROTCism, like draft resistance, is an old tradition in America. How many students know of a report that an officer assigned to the Massachusetts Institute of Technology wrote back in 1893 about the troubles of one of his predecessors?

> After a most uncomfortable war with the school authorities, [he] succeeded in introducing some theoretical work. In order to do this, he had to . . . remove the bright buttons from the [cadet] uniform and substitute for them gutta-percha buttons, as it was thought that the "brass buttons" gave the Military Department an altogether too prominent appearance.

In the 1950s, when collegians were supposed to have been more interested in panty raids than in political and social issues, students at City College of New York and at Dartmouth heckled and threw eggs at ROTC cadets parading on their campuses. It was during this decade also that the National Council Against Conscription mounted a broadside against ROTC as well. One of its arguments was a quotation from an Army general that "ROTC units appear to spoil a good college student and do not make a good soldier." Another was that "Military training in college leads to a belief in the inevitability of war." Still another dealt with "the influence of American ROTC on Japanese militarism," which partly blamed ROTC for the invasion of Manchuria. Still another charge was that

> . . . the presence of high-ranking officers on college faculties . . . endangers student and faculty freedom. Antiwar or anticonscription speakers may thus be prevented from using college facilities, if only because the college president or dean does not want to offend the ROTC officers and men. Sometimes, also, academic freedom can be jeopardized by the problem [that] arises from the antiwar teaching of a professor coming in conflict with the views of ROTC officers.

How ironic and inaccurate was this last fear! If anything, it is the other way around today. It is the pro-ROTC officers, students, and professors whose academic freedom and access to university facilities are sometimes endangered. If we remember that military officers have been assigned to civilian college campuses for more than a century now, then we may happily conclude that they have done a pretty poor job of "militarizing" the average American student or professor. All too few people have noted this fact during the passion, pain, and polarization of the Vietnam War debate.

The reaction of American college campuses to ROTC has ranged from riot to reason with the balance coming to rest somewhere in between. To mention only a few of the events of recent record, the reaction has included pitched battles and the sacking and burning of the military science building at the University of Puerto Rico, the barring of ROTC students from class by a University of Kansas mathematics professor (he later relented), and the following announcement of peaceful hearings in the student newspaper of my own Temple University in Philadelphia:

HEARING ON ROTC

Persons or organizations who would like to present recommendations or comments on the future role of ROTC training at Temple should write Dr. Bob A. Hedges, Chairman of the University Subcommittee to make recommendations on policy with respect to ROTC, for an appointment time during the subcommittee's hearings, to be held Friday, October 31, starting at 1:30. Address Dr. Hedges at the School of Business Administration, Temple University.

Give the name of the person or organization requesting time, and both an address and telephone number for communications from the subcommittee.

Each presentation should be addressed to the following choices of policy, which the subcommittee is considering:

1. Participation by Temple in the ROTC program recently approved by the Secretary of Defense. (The extent to which ROTC courses would count toward a degree would be determined by the faculty of each degree-granting unit of the University, as at present.) . . .

(*Continued on following page*)

2. ROTC with all its academic subject matter handled by standard academic departments.

3. Same as 2, plus academic supervision of all drill and other "nonacademic" ROTC classes on campus.

4. ROTC on campus, an officially recognized, but purely extracurricular activity at the University.

5. All connection between Temple and ROTC be terminated.

The Various Viewpoints

Like that other furious debate over professional "war research" on the campus, the battle over ROTC has several overlapping dimensions and protagonists. There are those who:

- Want ROTC to continue pretty much as it is now.
- Want it to be voluntary (or compulsory).
- Want it to carry (or not to carry) some academic credit toward graduation, the amount to be determined by the faculty.
- Want the faculty to play a greater role in fashioning the ROTC curriculum.
- Want academic credit given for ROTC courses taught by the regularly appointed civilian faculty but none for those taught by the resident Professor of Military or Air Science and his staff.
- Want all ROTC courses that are related to civilian academic disciplines to be taught only by the regular faculty (*e.g.*, leadership by psychology professors, international relations by political science professors, defense and disarmament questions by economics professors, and military history by history professors).
- Are willing to accept some form of ROTC on campus but only if there are no uniforms, drills, rifles, parades, and other symbols of "militarism."
- Insist that purely military courses like naval engineering or rifle practice be given at off-campus centers during the regular academic year and/or at military camps during the summers.
- Insist that the military personnel assigned to an ROTC unit, if there is to be one, not be called "professors."
- Believe that ROTC should be removed from a university campus because the officers assigned to it are not academically qualified and the courses they teach are not intellectual enough for a university.
- Do (or do not) want the decision to keep, change, or remove ROTC from a particular campus to be in any way influenced by a secret referendum of the students of the university, who are, after all, the people most directly concerned.
- Are against ROTC on any campus, in any shape or form, for any reason whatever, and want it removed immediately.

People in this last category are especially difficult to communicate with. They don't listen. For them there is no middle ground between reform and removal. Since they see no moral or military need for ROTC, they also see no need to find facts and explore opinions, to look for and to eliminate weaknesses and errors on both sides, and to work for a democratic accommodation between the military and academia. Yet most of them say they greatly fear a Prussianization or militarization of American society.

This is the same group that is so worried about serious and thoughtful suggestions for an accommodation between the military and the universities. To them, any accommodation would be a case of Good succumbing to Evil. To them, ROTC *is* an evil, and every good scholar and student is presumably opposed to evil. Therefore, they must all support ROTC's immediate removal from the nation's colleges and universities.

But how far can one carry this kind of argument and logic? If armies are equal to War, which is always Evil, and if universities are equal to Peace and are always Good, does one, in addition to canceling ROTC on every campus, also prevent officers already in the military from taking any courses and degrees at our civilian universities? If one lets them take the courses and degrees, isn't that still putting the "peaceful" university at the service of the "war-making" military? And is the best alternative to such a situation to send military men only to military academies and service schools with largely military instructors so that they hardly ever interact with civilian professors during their military careers?

Emotion Slays Reason

Now, I hate Satan just as much as the next fellow. However, I am not as sure as others are that I can always recognize him when I see him. And I have always believed that a bit of passionate advocacy is good for the soul, good for debate, and even good for scholarship. But when passion subdues fairness and fact, and when emotion slays reason and logic—as they have done on many campuses—then honest discussion, peaceful change, and good policy-making must be the first casualties.

It is one thing for someone to say that "I am against ROTC, and that's that!" Such a position may

appear to others to represent a closed mind, but at least an honest one. However, it is quite another thing to use arguments against ROTC that are specious, weak in logic, and ignorant of facts and consequences.

It is certainly proper, for example, to question the intellectual content of ROTC courses and to oppose granting credit for those that are intellectually deficient. But if one does this, one should define what one means by "intellectual," one should compare ROTC courses with other courses on campus whose intellectuality is also questionable (accounting?, physical education?, home economics?, insurance?), and one should do his damnedest to bring *all* such questionable courses up to intellectual snuff.

Or let us consider the case of the student or faculty member who bases his objection to ROTC partly on the lack of proper academic credentials for the military officers who staff the courses. Certainly there are some outrageously bad and out-of-touch ROTC instructors on some of our campuses. But don't we also have some pretty incompetent civilian professors, many with tenure, on some of our campuses? This is not a new problem for the universities or the military. In the late nineteenth century, someone described an Army officer assigned to MIT as: "Colonel (- - -), antecedents and real occupation unknown. He held the reins (from 1880) until 1883, having become, I believe, too old to walk."

But things and times have changed now. Universities have for years had much more flexibility with regard to ROTC appointments than they have chosen to exercise. How many campus critics have ever seen a copy of the present standard contracts between the military and universities that have an ROTC unit on their premises? How many administrators, faculty members, and students know that the agreements state that no officer shall be assigned to campuses without prior approval of the authorities of the institution [*i.e.*, the school, college, or university], and no officers will be continued on duty after the authorities have requested his relief for cause? How many universities have ever vetoed the projected assignment of an officer to ROTC for lack of academic qualifications or for any other reason? How many have asked for the recall of an officer for lack of academic qualifications or for any other reason? How many universities have exercised their right to insist that all professors of military science have doctorates or master's degrees (and some 37,000 military officers have them)? And most important of all, how many anti-ROTC students and professors who use the "union-card argument" would really be willing to change their positions if the universities insisted on graduate-trained officers and if the military supplied them?

Another point: We are now living in the era—long overdue—of more student participation in university governance, both by voice and vote. How many campus anti-ROTCers who cry out for the greatest possible degree of student participation in university decision-making would let the decision on whether and in what form to keep ROTC rest in the hands of a secret and binding student referendum? I know of one university where thirty-five percent of the seniors felt that ROTC should remain on campus with credit, and seventeen percent felt it should stay without credit. Yet, despite this fifty-two percent majority, a special student-faculty committee recommended 4–2 that the Corps be removed entirely from the campus.

A Rational Formula

What we have now on many campuses is a rigid political situation vis-à-vis ROTC that can be represented by the formula:

$$V + P + F + S + RO = Ca,$$

where V = the Vietnam War, P = the Pentagon, F = the faculty, S = the students, RO = ROTC, and Ca = confrontation with the school's administration.

What we should have is a situation on *each* campus that can be expressed as follows:

$$V + Pf + Ff + Af + Sf + ROf + B = A \text{ or } RE,$$

where V = the Vietnam War, Pf = a flexible Pentagon, Ff = a flexible faculty, Af = a flexible administration, Sf = a flexible student body, ROf = a flexible ROTC department, B = a secret student ballot on the issue, A = an accommodation, and RE = ROTC's removal by a democratically arrived-at decision.

Whatever happens on any particular campus or group of campuses, the fact is that we have needed more officers than the military academies and OCS could produce before and during the Vietnam War, and we shall probably need them after that war even if our future military posture and commitments are drastically reduced. The fact is, too, that while some colleges are moving to banish ROTC, others are waiting to receive it.

ROTC will remain in this country for some time, whatever its form and whatever its name. Do we, then, want to get all of our college-trained officers from only certain sections of the country, with only certain kinds of political and social views, and from only certain universities that, unjustly or not, do not have the reputation, prestige, and intellectual excellence of the institutions that have removed or will remove ROTC from their hallowed halls? Even if it were physically and economically possible for us to get all of our officers from the service academies, would we really want to do so?

I think not. Instead, like Michael Harrington, the author of *The Other America,* that vivid portrait of poverty in the United States, I worry about the "inborn and conservative" education of most of our Academy-trained generals and admirals. Like him,

> I hold no brief for the military, whether it is efficient or not, and I would like to see a world in which it simply did not exist. But since that happy day is not exactly imminent, this country should worry a little more about how it picks the [military] men who hold the life and death of the planet in their hands.—END

Edward Bernard Glick is professor of political science at Temple University in Philadelphia and the author of Peaceful Conflict: The Non-Military Use of the Military, *a study of the military role in nation building. He contributed the article, "Scholars, Soldiers, and Society," to the November 1969 issue of* AIR FORCE/SPACE DIGEST.

POW ACTION REPORT MIA

—Sacramento *Union*

Sacramento Mayor Richard H. Marriott signs a proclamation making August 25 "Letters Supporting the Geneva Accords Day," which urged people of the city to write Hanoi requesting humane treatment for American POWs. Looking on are Eugene DeVissher, left, California State AFA President, and Maj. and Mrs. Kenneth Beaton of Mather AFB, who initiated the letter-writing campaign.

A Family Affair

Nine-year-old Jim and seven-year-old Mike, sons of Maj. and Mrs. Kenneth L. Beaton, of Mather AFB, Calif., voluntarily passed up summer camp this year. The money saved helped pay for a replica of a North Vietnamese POW cell the Beatons placed in the California State Capitol in Sacramento.

On July 3, the Beaton family met with Governor Ronald Reagan and presented him a model of the cell. That same day a six-by-eight-foot replica went on display near the Capitol rotunda. This was only one of the Beatons' projects—stretching from North Dakota to California—to publicize the plight of MIA/POWs and their families.

The Beaton family began its campaign while stationed at Grand Forks AFB, N.D. Although they have no close friends who are missing or prisoners, they were among the first to spark a letter-writing campaign in North Dakota and Minnesota.

In February, Major Beaton was transferred to Mather, where he is now a B-52 radar-navigator with the 441st Bomb Squadron. En route to his new duty station, the Beatons stopped in North Dakota, Montana, the Major's home state of Washington, and in Oregon, contacting radio and TV stations, newspapers, and civic organizations. Their message was always the same—write letters. At each stop, they provided out of their own funds lists of addresses to which letters may be sent, and reprints of "The Forgotten Americans of the Vietnam War," Lou Stockstill's article from the October 1969 issue of AIR FORCE/SPACE DIGEST.

Before leaving Grand Forks AFB, they rented a post office box in Mrs. Beaton's home town of Garden Grove, Calif. This address was used in all publicity so that persons reading or hearing of their campaign could write to learn how they could help.

Shortly after arriving in California, their son Jim wrote his own letter—to the Modesto (Calif.) *Bee*—telling the editors about his friend Steve, whom he had met in Spokane, Wash., and whose father is a POW. "I hope you can find room in your paper to tell people about Steve's dad," he wrote, "and maybe other kids will want to help."

The Beatons constructed the replica of the POW cell from descriptions given by former POWs released by Hanoi. California Assemblyman Clare Berryhill, of Ceres, helped them get approval to put the exhibit in the Capitol.

The Beaton family is working with many groups in the Sacramento area, including the National League of Families and AFA, while still carrying on projects of its own. At their urging, the Modesto City Council passed a resolution declaring July 15, 1970, POW Day. The Beatons are discussing similar resolutions with officials of other California cities, and with the state legislature.

One of their most recent successes—a proclamation by the mayor of Sacramento, Calif., declaring August 25 "Letters Supporting the Geneva Accords Day" in that city—was achieved in cooperation with Eugene DeVissher, California State AFA President. Mrs. Beaton has reported that, in addition to helping with the proclamation, Mr. DeVissher's assistance has included arrangements with Sacramento merchants to put posters in the stores, and with theater owners to show MIA/POW slides between movies; and securing a billboard, complete with a MIA/POW message.

The Beatons have received nearly 4,000 letters from people who want to help. Replies, with a list of addresses of foreign officials, tell letter writers to request that the enemy identify the men they hold prisoner, allow a free flow of mail, open POW camps to inspection, release the sick and injured, and protect prisoners from public exhibition and abuse.

The only thing the Beatons ask of people writing for information is to enclose a self-addressed, stamped en-

The Beaton family presents California Governor Ronald Reagan with a replica of a POW cell and an "I've Written" button. From the left are Miss Cheryl Broult, cousin of Mrs. Beaton; Major Beaton; Mrs. Beaton; and the Beaton youngsters, Mike, 7, and Jim, 9. The Beatons also placed a large-scale POW cell model in the State Capitol in Sacramento which is close to Mather Air Force Base.

"River Rats," seated, from left, Maj. M. Montgomery, Lt. Col. W. E. Stecklein, and Capt. W. Parkell aid JOC members, standing, from left, Capt. J. Stecklein and Capt. W. Riley at Williams AFB in assisting MIA/POW families.

velope. They are financing their own programs and do not accept contributions.

Helping Hand

Baby-sitting and taking children on picnics or to the zoo is not included in the job descriptions of Air Force junior officers, but they're doing it voluntarily at Williams AFB, Ariz.

On off-duty hours and weekends, members of the Williams AFB Junior Officer Council (JOC) baby-sit, take children fishing, to a ball game, or to participate in the many other activities young people enjoy. Their charges are the children of men missing or held prisoner by the Communists in Southeast Asia. It's their way of assisting the many MIA/POW families who live in that area.

A big thrill for some sixty children recently was the special arrangements made by their "big brothers" of the JOC for an air show at Williams. Highlight of the show was an aerial demonstration by the Navy's Blue Angels. The youngsters met the Blue Angels, and each received an autographed photo of the group.

JOC members help MIA/POW wives with car problems, arrange appointments for legal or medical assistance, run errands, and act as chauffeurs. Capt. Jerry Stecklein, JOC president and an instructor in the T-37 phase of pilot training at Williams, said, "The least we can do is try to make life easier for them."

Supporting and advising the council in its project are members of the Red River Valley Fighter Pilots Association—the "River Rats." The JOC members and River Rats also have joined with local groups in publicity campaigns and distributed petitions and bumper stickers.

Steve Canyon

The predicament of the MIA/POW families will become a part of the daily reading fare for millions of Americans later this month, when AFA National Director Milton Caniff introduces this subject into the Steve Canyon series. The episode will begin in mid-October.

The idea for a POW sequence in Steve Canyon originated with Miss Kay Colpitts, an Editorial Assistant on the AIR FORCE/SPACE DIGEST staff. In a letter to Miss Colpitts, thanking her for the suggestion, Mr. Caniff said "I am looking forward to getting into this episode, and certainly hope it will serve the purpose well."

Steve Canyon appears in 650 papers around the world.

New York

Col. Robert E. Work, a career intelligence officer who has been working with POW problems since World War II, gave more than 100 AFA members and guests an insight into the many facets of current US negotiations with Hanoi when he spoke at a New York State AFA meeting in Syracuse recently. An Air Force officer, Colonel Work is military adviser on MIA/POW affairs to the Assistant Secretary of Defense for International Security Affairs.

Honored guests at the meeting included members of eight MIA/POW families, representatives from the Royal Canadian Air Force Association, and AFA National President George D. Hardy. New York AFA organized a statewide MIA/POW effort early this year.

Texas

Mr. H. Ross Perot of Dallas, Tex., founder of United We Stand and well known for his MIA/POW efforts, was named Texas' AFA Man of the Year at the Texas AFA Convention in Big Spring recently.

Mr. Perot also was made a Life Member of AFA. The awards were accepted by his sister, Miss Bette Perot.

Banquet speaker for the Texas Convention was Mr. Murphy Martin, president of United We Stand. Eight MIA/POW families were honored guests at the event. Texas AFA began a statewide MIA/POW campaign in late 1969.

—MAURICE L. LIEN

Col. Robert E. Work, standing, briefed New York State AFA members in Syracuse on MIA/POW problems. Seated at the head table are, from the left, N.Y. State AFA Vice President Gerald V. Hasler, Syracuse AFA Chapter President Oscar Yensan, and AFA National President George D. Hardy.

THE BULLETIN BOARD

News and Comment about Air Force People . . .

By Patricia R. Muncy
ASSISTANT FOR MILITARY RELATIONS

Getting Out the Vote

The Defense Department's Federal Voting Assistance Program is once again in high gear. A Voting Task Force comprised of members of each service has been established in the Office of the Secretary of Defense. Voting Assistance Officers, worldwide, have been given their instructions to see that every eligible voter is briefed and furnished "in hand" a Federal Post Card Application for an absentee ballot (SF 76).

The next step is up to the guys and gals in uniform. If they have strong feelings about the war, recomputation of retired pay, manpower cutbacks, cost overruns, dual compensation, women's lib, or what have you, now's their chance to let the Congress know what's on their minds.

The majority of men and women in uniform who exercise their voting privilege do so by absentee ballot. There is now a movement that would abolish absentee voting. This alone should be sufficient reason for a paramount team effort on Election Day 1970.

General McConnell to Help Guide CAP

Gen. J. P. McConnell, Air Force Chief of Staff before his retirement in August 1969, has accepted the position of executive consultant to the Civil Air Patrol. General McConnell will provide executive-level advice on CAP affairs dealing with organization, administration, and overall policy. He will maintain a business office in Washington, D.C.

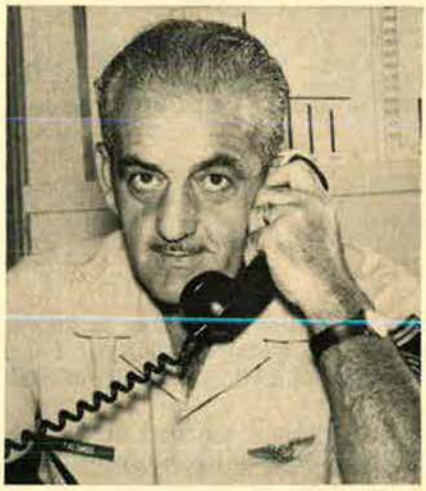
No newcomer to CAP, the retired four-star general wrote, with the late Sen. Burnet Rhett Maybank (D-S.C.), the original public law passed by Congress in 1948 making Civil Air Patrol the official auxiliary of the Air Force.

In other CAP developments, the Office of Civil Defense has beefed up its plans to use CAP's light aircraft during national emergencies. In case of enemy attack, CAP would be assigned such tasks as airlifting urgently needed personnel and supplies, performing visual and photographic reconnaissance of disaster damage, carrying out aerial radiological monitoring, providing communications through courier flights and its own nationwide radio network, and providing air support for essential priority requirements in civil defense, survival, and recovery actions.

One of a Kind

Since 1967, when CMSgt. Paul A. Palombo assumed his present duties as Chief of the Ground Safety Division at Headquarters Tactical Air Command, the command has received the National Safety Council's highest performance award, the "Award of Honor," for the third consecutive year.

The sergeant is filling an executive's seat that is comparable in responsibility to positions held by lieutenant colonels and civilians with GS-14 ratings. His responsibilities are as varied as they are abundant, extending from establishing policy and procedures to safety guidance for fire prevention, skiing, yard, water, office, and automobile safety, to name a few. Approximately 110,000 personnel assigned to TAC, as well as their dependents, are affected by the ground safety program so ably directed by Sergeant Palombo.



CMSgt. Paul A. Palombo, Chief of the Ground Safety Division, Hq. TAC, heads an award-winning ground safety program utilized command-wide. He is the only USAF enlisted man to hold such a post at a major command level.

AFROTC Program Expanded for Women

Beginning this fall, the Air Force ROTC program at ninety-five universities is open to women students.

Except for a short period in the 1950s, the only route by which a woman could receive an Air Force commission was through the Air Force Officer Training School. In 1969, a test program was initiated at four universities (Drake, Ohio State, East Carolina, and Auburn) to enroll women as cadets in the Air Force ROTC two-year commissioning program. The first women cadets from these four universities will be commissioned as second lieutenants at the conclusion of the 1970–71 school year.

Coeds who enter the expanded program are entitled to the full range of AFROTC instruction, with the exception of flight training.

The women cadets are eligible to compete for Air Force ROTC College Scholarships, except four-year scholarships that are available only to pilot-qualified candidates. AFROTC scholarships provide full tuition, incidental fees, an allowance for books, and $50 a month in nontaxable subsistence allowance. Women cadets who are not on scholarship status receive the same benefits as their male counterparts, including $50 a month in nontaxable subsistence allowance during the last two years of the AFROTC program.

They will attend summer encampments as part of their training. During the test program, this phase of training has been held at Myrtle Beach AFB, S.C. At the encampments, they will participate in career orientation, drill in-

Mrs. Joan Ruch, newly installed president of the Pentavox Toastmistress Club, receives a gavel from Lt. Gen. Duward L. Crow, Comptroller of the Air Force, at recent ceremonies at the Pentagon. The Pentavox Club, which meets on a bimonthly basis, is open to DoD female employees who wish to improve their oral communication and leadership abilities.

AFA's choice for top civilian employee of the Air Force for 1970 is Robert L. Feik, Director of Operations Research Analysis, Air Force Communications Service. He has been chosen to receive the Citation of Honor on September 23 during AFA's National Convention.

struction, physical training, and aircraft indoctrination. They may also participate, on a voluntary basis, in survival and small arms training.

Women cadets wear the new Air Force WAF uniform with AFROTC insignia. All coeds successfully completing the Air Force ROTC program will receive commissions as Air Force officers upon graduation. Women officers have an initial service commitment of four years.

Parting Shots

• Reservists assigned as Air Force Academy Liaison Officers (AFALOs) spoke to more than 534,000 high school students during FY '70, traveling some 1,990,000 miles by personal conveyance in the process. Of the Academy's 1970 entering class, eighty-six percent were counseled by AFALOs. The program saved the Air Force more than $2,250,000 when compared to a regular staff required to do the same job.

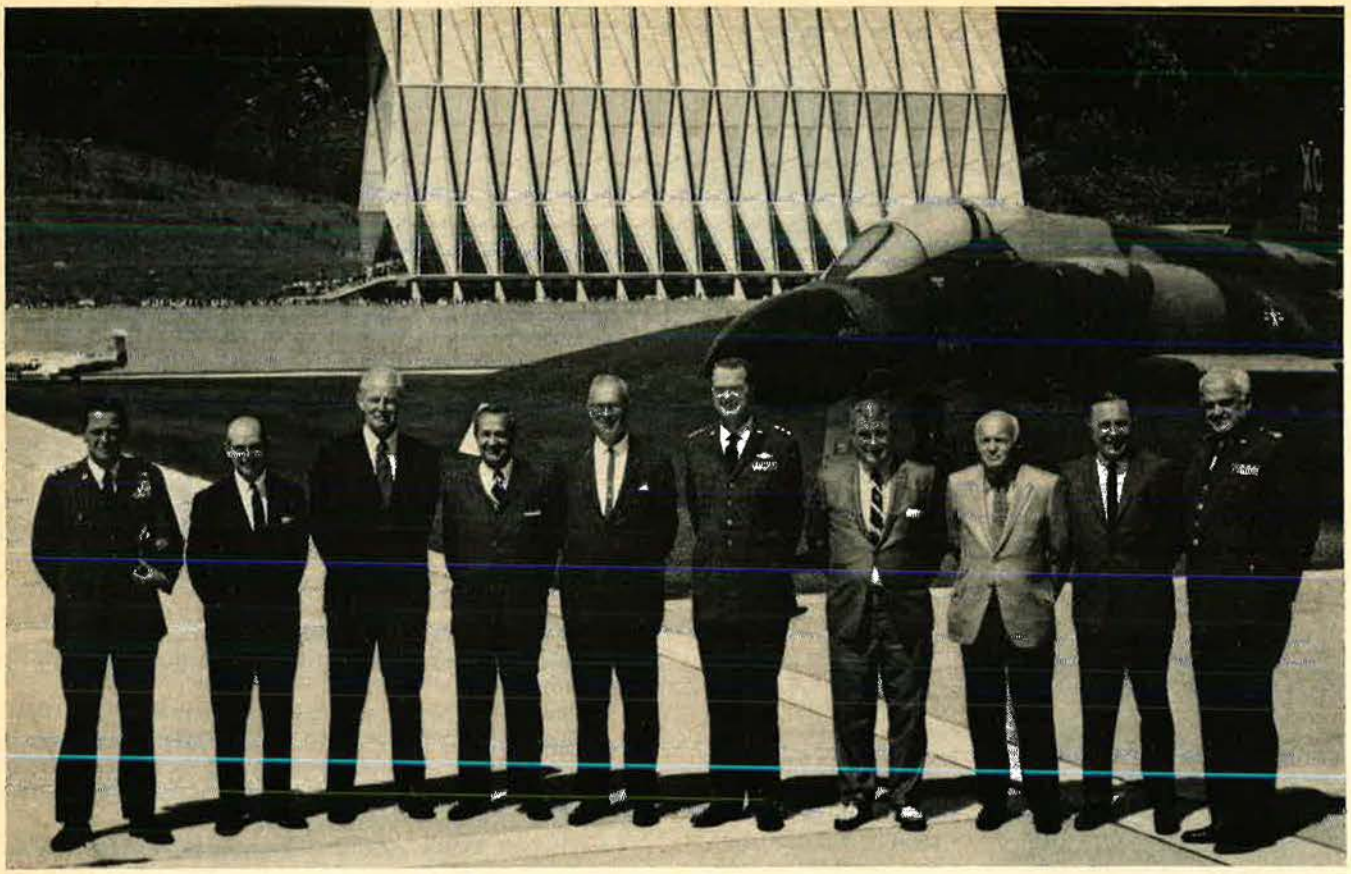
• The Chief of Air Force Reserve has recently announced a change in eligibility criteria for promotion consideration to Reserve brigadier and major general. Time in position has been reduced from one year to six months for both grades. Time in grade to one star has also been reduced from three to two years. There is no change in the time-in-grade requirement (two years) for two-star rank. The new changes will provide the Air Force Reserve a broader selection base and permit earlier consideration of all eligibles.

• The United States will stage an International Airshow at Dulles International Airport, near Washington, D.C., in June 1972. The International show will focus world attention on US technical and production leadership in aerospace and advanced transportation systems.

• The Air Force Academy has added Japanese to the curriculum of its Foreign Language Department. It is the first military academy to do so. An Academy spokesman said the move was prompted by the fact that this country is actively engaged in international affairs in the Asian-Pacific area, and that "the tremendous rise of Japan as

(Continued on following page)

Slated to open its doors November 1, this high-rise apartment house at Air Force Village will open to USAF officers' widows and female dependents age 55 or over, some retired officers, and to young widows in special cases.



Above is pictured the Air Force Advisory Council during its two-day semiannual meeting at the USAF Academy. The Council advises the Academy Superintendent on educational policy. From left, Lt. Gen. Robert J. Dixon, DCS for Personnel, Hq. USAF; Leonard Marks, Jr., Wells Fargo & Co.; Charles B. Wilkinson, Special Adviser to President Nixon; Dr. Benjamin H. Balser, consultant psychiatrist; Dr. Walter Wrigley, Council Chairman and professor of aeronautics, MIT; Lt. Gen. A. P. Clark, Academy Superintendent; Gen. E. W. Rawlings, USAF (Ret.); E. M. Zuckert, former USAF Secretary; C. B. Thornton, Litton Industries; and Maj. Gen. J. A. Lang, Jr. (AFRes), OSAF, Hq. USAF.

an international power economically and politically, plus its present and future roles in world affairs, make learning of the Japanese language and culture very timely and of great value to future leaders of the US Air Force."

• The latest Civil Defense survey reveals a total of 200,778 public fallout shelters in the country, capable of accommodating 192,887,000 occupants. In addition, there are 496,161 home fallout protection structures that could accommodate 1,816,850 persons. The 1970 census estimate is 204.8 million people in the United States, which means that, in the unlikely event of a nuclear attack on this country, about ten million of us may have to head for the hills. Do you know the location of the fallout shelter nearest to you?

• The President has signed a law that will increase monthly compensation payments for most of the two million veterans who incurred disabilities during military service.

The new law also permits restoring to compensation rolls the remarried widows of veterans whose remarriages end in death or divorce. This provision becomes effective next January 1.

Another provision would presume certain illnesses of former prisoners of war during WW II, the Korean conflict, and the Vietnam era to be service-connected for purposes of compensation payments.

SENIOR STAFF CHANGES

B/G John W. Baer, from Dir., Near East and South Asia Region, OASD (ISA), Washington, D.C., to Dep. Dir., Ops for Strike Forces, DCS/P&O, Hq. USAF . . . **B/G Devol Brett,** from IG, USAFE, Lindsey AS, Germany, to Dir., Near East and South Asia Region, OASD (ISA) Washington, D.C., replacing B/G John W. Baer . . . **B/G Richard G. Cross, Jr.,** from Cmd. IG, ADC, Ent AFB, Colo., to Cmdr., 26th NORAD/CONAD Region, with add'l duty as Cmdr., 26th Air Div., Luke AFB, Ariz., replacing M/G Sanford K. Moats . . . **M/G Kenneth C. Dempster,** from Vice Cmdr., 13th AF, PACAF, Clark AB, Republic of the Philippines, to Asst. Dir., Plans, Programs, and Systems, Defense Supply Agency, Alexandria, Va., replacing retired M/G Daniel E. Riley . . . **B/G Alan C. Edmunds,** from Cmdr., 376th Strategic Wg., SAC, Kadena AB, Okinawa, to Cmdr., 810th Strategic Aerospace Div., SAC, Minot AFB, N.D.

M/G Andrew J. Evans, Jr., from Cmdr., USAF Tac Air Warfare Ctr., TAC, Eglin AFB, Fla., to Dep. Cmdr., 7th AF/13th AF, Udorn Airfield, Thailand . . . **B/G William H. Holt,** from Asst. DCS/Ops, to IG, USAFE, Lindsey AS, Germany, replacing B/G Devol Brett . . . **M/G Sanford K. Moats,** from Cmdr., 26th NORAD/CONAD Region, with add'l duty as Cmdr., 26th Air Div., Luke AFB, Ariz., to Chief, MAAG, Madrid, Spain . . . **B/G Ray A. Robinson, Jr.,** from Asst. DCS/Plans, ADC, to Cmd. IG, ADC, Ent AFB, Colo., replacing B/G Richard G. Cross, Jr. . . . **M/G Roy M. Terry,** from Dep. Chief of AF Chaplains, to Chief of AF Chaplains, Hq. USAF.

PROMOTIONS: To be **Brigadier General:** Robert T. **Marsh;** Abner B. **Martin;** William Y. **Smith;** Robert M. **White.**

RETIREMENTS: M/G George E. **Brown;** B/G Roy C. **Crompton;** B/G William E. **Gernert;** B/G Jack C. **Ledford;** B/G Joseph **Myers;** M/G Daniel E. **Riley;** B/G Richard M. **Scott;** B/G Guy M. **Townsend;** B/G Frank P. **Wood.**—END

Vice President Spiro T. Agnew and Senator Strom Thurmond pay tribute to the "Champion of the GI" at . . .

The Nation's Capital Chapter's Salute to The Honorable L. Mendel Rivers

By Don Steele

AFA AFFAIRS EDITOR

THE Honorable Spiro T. Agnew, Vice President of the United States, headed a list of more than 1,200 guests, including leaders of Congress, the aerospace industry, the military services, and AFA, who gathered in the Washington Hilton Hotel's International Ballroom on August 12 to honor the Chairman of the House Committee on Armed Services, Representative L. Mendel Rivers (D-S.C.).

Sponsored by the Nation's Capital Chapter of the Air Force Association, with the assistance and cooperation of the District of Columbia Council of the Navy League of the United States, and the Washington, D.C., Chapter of the National Defense Transportation Association, the "Salute to the Honorable L. Mendel Rivers" featured an address by Vice President Agnew, and remarks by Senator Strom Thurmond (R-S.C.) and Chapter President Robert J. Schissell. The program received national TV and news-media coverage.

Senator Thurmond hailed Mr. Rivers as "a beacon of light in these troubled times," and said that "his lifestyle, his flamboyance, his wit, his intelligence, his personality, all make him unique in the annals of American politics." During his remarks, Senator Thurmond read a telegram from President Richard M. Nixon lauding Chairman Rivers' positive stand on the need for a strong national defense, and his support of the military services and their people, and seconding the selection of Mr. Rivers as the first recipient of the Chapter's "Distinguished American Award."

Vice President Agnew congratulates Rep. L. Mendel Rivers, recipient of the Nation's Capital Chapter's "Distinguished American Award," as Mrs. Rivers beams and Deputy Secretary of Defense David Packard looks on approvingly.

Guest of Honor Representative Rivers, second from right, with principals in the "Salute to the Honorable L. Mendel Rivers"; from left, Nation's Capital Chapter President Schissell, Vice President Agnew, and AFA President Hardy.

John R. Blandford, Chief Counsel for the House Committee on Armed Services and the Salute's master of ceremonies, described Vice President Agnew as one of the most respected and popular men in America. "When he speaks, people listen, and the great majority like what they hear," he said.

In a humorous attempt to "lay to rest the ugly, vicious, dastardly rumor that he [Congressman Rivers] is trying to move the Pentagon piecemeal to South Carolina," the Vice President explained, ". . . that the military facilities so evident in that area are a testament of Mendel Rivers' unselfish willingness to allow his own First District of South Carolina to accept in the national interest military installations which just had to be put someplace."

Then, on the serious side, Mr. Agnew said, ". . . a check of the records will reveal that there are other congressional districts in the United States with more and larger facilities. The stories just read better when they're about a Chairman. It is of such stuff that myths are made.

"What is not a myth about this man we are honoring

(*Continued on following page*)

During the Head-table Reception at the tribute to Rep. L. Mendel Rivers, Deputy Secretary of Defense Packard, left, and Air Force Association President Hardy, right, enjoy a story by Air Force Chief of Staff Gen. John D. Ryan.

today," he said, "is his deep sense of patriotism, his sincere dedication to the national defense of this country. I know of no one who stands more firmly behind the need for a strong American defense establishment or who is more determined to see that the guard we now maintain will not be dropped."

The Vice President added, "Undoubtedly, of all the titles and honors he has received in a distinguished career, the one of which he is most proud is 'Champion of the GI.' And the GIs know he deserves it."

Mr. Agnew closed his remarks with a story to illustrate the point, "Some of the troops returning from Vietnam recently under the Nixon Administration's withdrawal program were being interviewed. 'What did you pray for most when you were in Vietnam?' a young man was asked. 'I prayed that Mendel Rivers would live to be 150 years old, because he is the one who really cares about us,' said the GI. Chairman Rivers, it sort of sums up a feeling of the 1,200 of us in this room. We salute you, sir."

During the program, Mr. Schissell presented Chairman Rivers the Chapter's first Distinguished American Award "... for the preservation and protection of those outstanding traditions and values of the United States," and an American flag lapel pin containing six diamonds. Overwhelmed by the magnitude of the tribute, Mr. Rivers, for the first time that anyone can recall, was at a loss for words and did not respond.

Also participating in the program were Maj. Gen. Roy M. Terry, USAF Chief of Chaplains, the USAF Airmen of Note under the direction of Chief Warrant Officer Bob Bunton, the USAF Ceremonial Band, the USA Old Guard Fife and Drum Corps, and a joint services Color Guard.

Head-table guests included David Packard, Deputy Secretary of Defense; John H. Chafee, Secretary of the Navy; Adm. Thomas H. Moorer, Chairman of the Joint Chiefs of Staff; Adm. E. R. Zumwalt, Jr., Chief of Naval Operations; Gen. John D. Ryan, USAF Chief of Staff; Gen. Leonard F. Chapman, Jr., Commandant of the Marine Corps; Dr. John L. McLucas, Undersecretary of the Air Force; Gen. Bruce Palmer, Jr., USA Vice Chief of Staff; George D. Hardy, President, Air Force Association; James Hannan, President, Navy League of the United States; Thomas R. Goodfellow, President, National Defense Transportation Association; Wilber J. Reed, District of Columbia Council President, NLUS; and John E. Roberts, Jr., Washington, D.C., Chapter President, NDTA.

Notable among the hundreds of dignitaries in the audience were Congressmen John W. McCormack (D-Mass.), Speaker of the House of Representatives, and Gerald R. Ford (R-Mich.), House Minority Leader; AFA National Treasurer Jack B. Gross; AFA's Central East Regional Vice President A. Paul Fonda; AFA National Director Martin H. Harris; and a group of Walter Reed Army Hospital patients who were wounded in Vietnam.—END

ASK A FOOLISH QUESTION . . .

At Eighth Air Force Headquarters in England, in 1944, the daily mission planning conference was conducted by Maj. Gen. Orvil A. Anderson, Deputy Commander for Operations. Assisting were teams of officers, specialists in bomber and fighter operations, communications, etc. The conferences were held in a small anteroom just off the main operations room. The main operations room was managed by Watch Officers, several of whom were WAC captains.

A recent addition to the equipment in the "Ops Block" was a coffeemaker of the now-familiar type in which water boils up from a lower pot into an upper pot containing the coffee and, upon cooling, descends again into the lower pot for serving. In 1944 this was a new gadget, and few people understood at first encounter just how it worked.

One night, the weather, targets, and intelligence people had finished briefing the General and, in tense silence, the officers present were awaiting the command decision when a WAC captain stuck her head through the door and called out, "What happens if the water boils too long?"

Our thoughts suddenly shifted from bombs exploding on target to a General exploding right before our eyes. In that deafening silence the WAC realized that she had interrupted at a crucial moment with a question that (out of context) was utterly stupid. General Anderson looked over his shoulder at her and solemnly, but very firmly, said, "It'll scorch."

Nobody laughed, the door closed, and the conference proceeded as though there had been no interruption at all.

—Lt. Col. LARRY S. HATFIELD, USAF (Ret.)

(AIR FORCE Magazine *will pay $10.00 for each anecdote accepted for publication.*)

THE NATION'S CAPITAL CHAPTER . . .

cited for consistent and effective programming that has focused local and national attention on the Air Force Association mission.

The sponsorship of outstanding programs by the **Nation's Capital Chapter** of Washington, D.C., has become almost commonplace. The recent "Salute to The Honorable L. Mendel Rivers," which was held on August 12, is an excellent example (*see story on page 79*). We congratulate the officers and members of the Chapter and, in recognition of its consistently effective programming and the national publicity received by its most recent program, we are happy to name the Nation's Capital Chapter the **"AFA Unit of the Month"** for October.

* * *

Big Spring, Tex., rolled out one of its brighter red carpets recently as the city and AFA's **Big Spring Chapter** hosted the annual state convention of the Texas AFA.

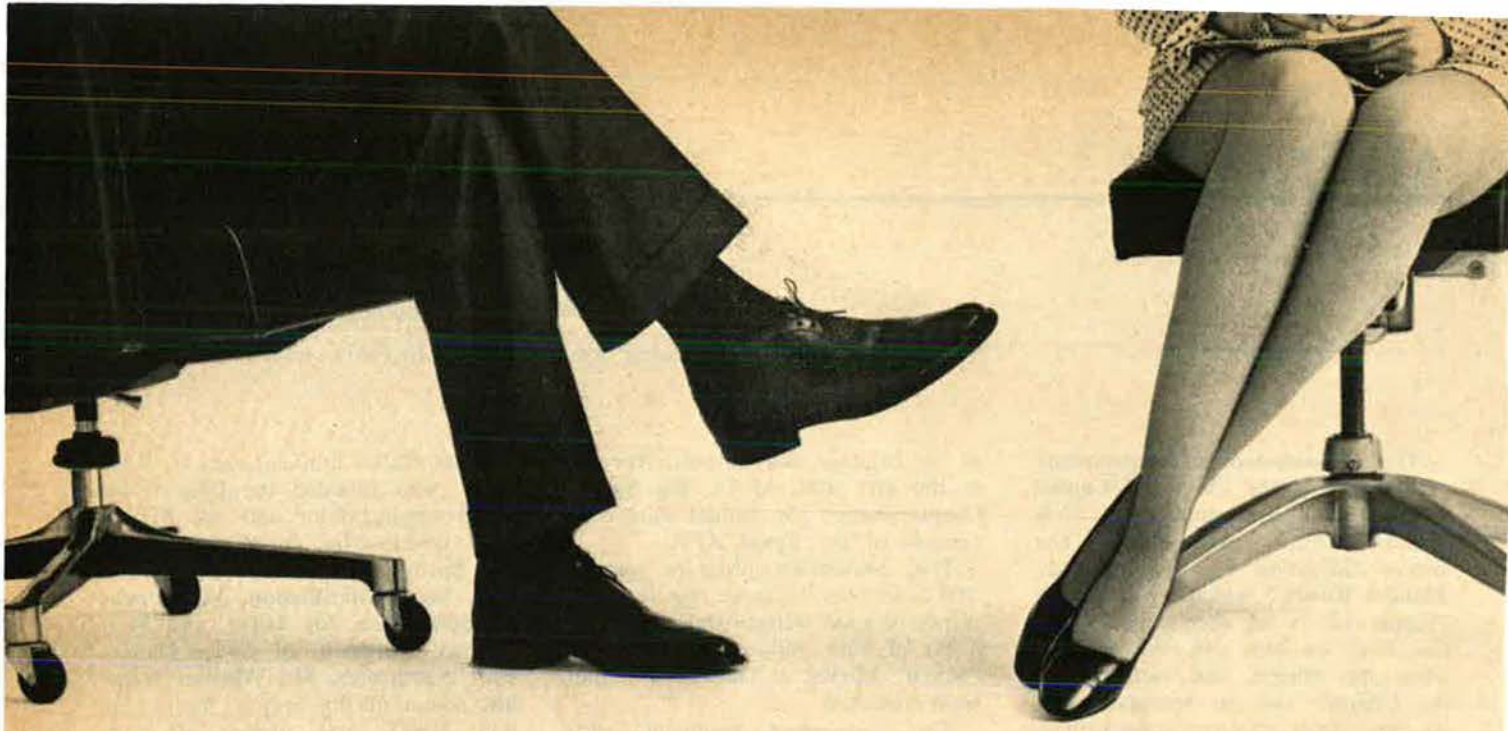
The convention program opened with a western barbecue that featured plenty of good western-style food and a bit of folk philosophy by **C. C. "Mitch" Michel** of Odessa, a homespun humorist.

The convention luncheon, programmed as the "United We Stand" Luncheon, had **Rep. Omar Burleson** (D-Tex.) as the keynoter, and **Murphy Martin,** President, United We Stand, as the principal speaker. Guests of honor included **Mrs. G. R. Perot,** mother, and **Miss Bette Perot,** sister of Dallas humanitarian H. Ross Perot, who founded the United We Stand organization; and six POW/MIA wives—**Mrs. Smith Swords** of Big Spring, **Mrs. Bonnie Singleton, Mrs. Sandy McElhanon, Mrs. Paula Hartness, Mrs. Joy Jeffry,** and **Mrs. Murray Wortham,** all of the Dallas-Fort Worth area. **Mr. Winston Wrinkle,** owner of Big Spring's radio station, KBST, was master of ceremonies.

In his remarks, Mr. Martin stated that "we are timid about patriotism. Perhaps the absence of such fervor is the cause of all our troubles. It is time for us to take a look at our-

(Continued on page 83)

The Texas State Air Force Association's 1971 slate of officers was elected at the Lone Star AFA convention held recently in Big Spring, Tex. Already planning a big AFA year are, left to right, Harmon E. Burns, A. J. Statser, Dorr Newton, John Allison, Jack Morris, and W. G. Bushell. For additional details on Texas AFA, see accompanying text.



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Among those on hand at New York Air Force Association's 23d Annual Convention were, left to right, New York AFA President William C. Rapp; Russ Newton, Royal Canadian AFA Regional Vice President; Col. Robert Work, Military Adviser to the Assistant Secretary of Defense for International Security Affairs; AFA President George Hardy; AFA Northeast Regional Vice President John Brosky.

selves, to make a new personal pledge to support the great bastion of freedom which is our country."

He observed, "Some nations have died of old age, some have been murdered, some have committed suicide. It would be the greatest tragedy of all if America died in her sleep."

Mr. Martin was introduced by **Congressman Burleson**, who, in his keynote remarks, said, "We could have won this war, in a matter of days, four years ago. It is sad that some people in high places have, in voicing their objection to the war, given comfort to the enemy."

Representative Burleson viewed with alarm a tendency to reduce the nation's strength. "For the first time, our national budget will allot more to welfare projects than to the military," he said. "It is distressing to think that we might wake up someday and find ourselves less strong than any other nation in the world."

During the afternoon, **Webb AFB** held an open house for convention delegates and residents of the area.

Brig. Gen. Robin Olds, Commandant of Cadets at the Air Force Academy and principal speaker at the Awards Banquet, expressed pride in his cadets and faith in the country which produced them. "We've fought many, many wars in the 196 years this country has been in existence," he said. "We must be prepared to protect the freedom so dearly bought."

Speaking of American military men in Vietnam, General Olds said: "The integrity and loyalty of those men would overwhelm you."

During the awards portion of the program, **H. Ross Perot** was named the **Texas AFA "Man of the Year"** in recognition of his efforts in behalf of American POW/MIAs and their families. Mr. Perot's sister, **Miss Bette Perot,** who is head of the Perot Foundation, accepted the award for her brother. **A. J. Statser,** Big Spring Chapter President, accepted the Texas AFA **"Chapter of the Year"** award for his unit. The State AFA's Physician of the Year and Nurse of the Year awards went to **Col. (Dr.) Richard S. Malone** and **Maj. Evelyn Jean Wright**, respectively. Colonel Malone is chief of the Medical Systems Division, USAF School of Aerospace Medicine, Brooks AFB; and Major Wright is director of the Advanced Obstetrical Nursing Course at Wilford Hall USAF Medical Center, Lackland AFB.

The State AFA's $1,000 Earle North Parker Scholarship went to **Elton D. Wallace, Jr.,** of Big Spring. Other awards went to **Sgt. Roland C. Lemon,** Air Reservist of the Year; and **MSgt Sydney E. Ulmer,** Texas Air National Guardsman of the Year. Both are from Ellington AFB.

Three national AFA awards were presented by Southwest Regional Vice President **Sam E. Keith, Jr.** They were presented to: **Capt. Richard T.**

(Continued on following page)

Don Chalif, left, owner of world's largest collection of military-pilot wings and autographed photos of leading aces from way back then to now, and World War II German ace, Maj. Diethelm von Eichel-Streiber, chat with Santa Barbara Chapter President Edward Warynick, at right, after a Chapter meeting.

Goins, Mather AFB, Calif., the Air Training Command's (ATC) Navigator Instructor of the Year 1969; **Capt. Gordon L. Jenkins,** Laughlin AFB, Tex., ATC's Pilot Instructor of the Year 1969; and **MSgt. Richard A. Vashina,** Kadena AFB, Okinawa, ATC's Airman Instructor of the Year 1969.

Robert W. Whipkey, publisher of the Big Spring *Herald,* was master of ceremonies for the banquet. Special guests included **Brig. Gen. Wm. C. McGlothlin, Jr.,** Commander, USAF Recruiting Service; **Brig. Gen. Michael C. McCarthy,** DCS/Materiel, ATC; **Col. Anderson Atkinson,** Wing Commander, Webb AFB; Big Spring **Mayor Arnold Marshall;** and AFA National Director **Joe L. Shosid.**

No tall tale here. A couple of Medal of Honor winners—and former AFA National Presidents—show their salmon catches after a recent get-together of Medal winners at Westport, Wash. In case you didn't recognize them, they are Jimmy Doolittle and Joe Foss.

—Wide World Photos

During the business session, delegates elected **John Allison** of Waco to succeed B. L. Cockrell as Texas AFA President for 1971. Other officers elected for 1971 are: **Brig. Gen. Harmon E. Burns,** USAF (Ret.), Vice President (North); **A. J. Statser,** Vice President (West); **Brig. Gen. Dorr Newton,** USAF (Ret.), Vice President (South); **Jack Morris,** Vice President (Organization); and **W. G. Bushell,** Secretary-Treasurer.

A resolution was adopted urging that Texas Gov. Preston Smith proclaim a day of prayer and action for POWs and MIAs. Delegates voted to donate $100 to the Air Force Village Foundation and $200 to the Air Force Museum Foundation.

Big Spring Chapter **President Statser,** Convention Chairman **Jeff Brown,** and all the Convention Committeemen are to be congratulated on a convention that was outstanding in all respects.

* * *

The **New York AFA's** 23d Annual Convention was held in the Syracuse Country House on July 17-18, and was hosted by the **Syracuse Chapter.**

The very enjoyable and effective convention program included a Friday evening AFA Reunion Cocktail Party, a luncheon and POW/MIA briefing, a tour of the NORAD facility at Hancock Field, a business session conducted by State President **William C. Rapp,** and an Awards Banquet with dancing.

A feature of the luncheon was a presentation by **Col. Robert Work,** Military Adviser to the Assistant Secretary of Defense for International Security Affairs, on the POW/MIA situation.

Lt. Gen. Michael Pollard, Comptroller General, Canadian Armed Forces, was the principal speaker at the Awards Banquet. General Pollard, who was Deputy Chief of Staff for Operations of NORAD's Ottawa and North Bay Regions before being named to his present office, spoke on the theme of the convention, "Canadian/United States Air Cooperation and Interdependence."

General Pollard was introduced by AFA President George D. Hardy. Prior to the introduction, Mr. Hardy reviewed briefly the Soviet arms buildup, and the Soviet and Chinese threat:

"Now there are a lot of people who are tone deaf when it comes to the global realities of our time," Mr. Hardy said. "They have arbitrarily canceled the Soviet and Chinese threat.

"Concerned as they are with admittedly pressing domestic problems,

they see no need for maintaining the country's military strength and its technological base. The extension of this Pollyanna view of the world, of course, is the conclusion that if there is no threat you don't need a deterrent posture, ABM, MIRV, AWACS, a new interceptor . . . and not even NORAD." Mr. Hardy continued, "I submit that this line of reasoning is the most provocative policy this country can take. It is nuclear brinksmanship which invites aggression."

Mr. Hardy concluded his remarks with, ". . . there is compelling reason to maintain the West's strategic posture through NATO, SEATO, and, of course, in concert with our good and trusted neighbor, in the form of NORAD."

During the program, **Gerald V. Hasler,** New York AFA Vice President and Binghamton Chapter President, was named the State AFA's **"Man of the Year."**

Russ Newton, Regional Vice President, Royal Canadian Air Force Association, and AFA's Northeast Regional Vice President **John G. Brosky** were honored guests of the convention. **Oscar H. Yensan,** President of the host Chapter, served as convention chairman.

* * *

COMING EVENTS . . . Pennsylvania AFA Convention, Erie, October 9-10 . . . **California AFA Fall Conference,** Fresno, October 9-10 . . . **Michigan AFA Convention,** Detroit, October 16-18 . . . **New Jersey AFA Convention,** Teterboro Airport, October 16-18 . . . **Alabama AFA Convention,** Montgomery, October 16-18 . . . **Ohio AFA Convention,** Fairborn, October 31 and November 1 . . . **Wisconsin AFA Convention,** Milwaukee, November 21 . . . **Virginia AFA Convention,** Langley AFB, November 21 . . . **Utah AFA Convention,** Salt Lake City, November 20-21.

—DON STEELE

AFA National Director W. R. Berkeley, Chief, Office of Information, 63d Military Airlift Wing (MAC), Norton AFB, Calif., receives Military Airlift Command's Longevity Award for thirty years' federal service from Brig. Gen. John F. Gonge.

A young group, including Junior Naval Cadets, Wavettes, Boy Scouts, and Civil Air Patrol Cadets, were on hand for a special program of the Boston, Mass., AFA Chapter. During the program, Chapter President Joseph A. Letorney, left, presented a citation to Cmdr. Harvey R. Berger, Massachusetts Commandant, Junior Naval Cadets, in recognition of his devotion to youth programs.

Bob Stevens'

"There I was..."

Here's to the chaplains, God bless 'em. The best of them spent a lot of time on the line and in the air. They knew when to talk, when to listen . . . and when not to listen . . .

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