

By John T. Correll, Editor in Chief

The Shape of Things to Come

EVEN more so than usual, the Air Force is thinking about the future. Its first set of findings was announced in January with the completion of "New World Vistas," a comprehensive study by the Air Force Scientific Advisory Board of aerospace technology options that are likely to emerge in the twenty-first century. This summer, Air University will turn in Project 2025. Air University's charter from Air Force Chief of Staff Gen. Ronald R. Fogleman was for "maverick, out-of-the-box thinking" about the next thirty years.

These well-publicized reports will eventually be sifted in detail, along with classified projections and other studies, by Maj. Gen. John A. Gordon and a special staff who are conducting, at General Fogleman's behest, a long-range planning project for the force. It will conclude next winter in time for the results to be used in preparing for a Department of Defense quadrennial strategy review in 1997.

As the people running these studies know very well, the future tends to defy specific predictions. Thomas J. Watson, chairman of IBM, never lived down his estimate in 1943 that "there is a world market for about five computers." The cover of *Popular Mechanics* in February 1951 forecast a helicopter in every garage. It was popular to imagine robots taking over all the chores of life. In reality, robots proved to be useful mainly in welding and other limited roles.

The purpose of the Air Force's future studies is not to divine exactly what will happen. It is rather to explore possibilities opened by technology, to examine evolving requirements, and to avoid the trap of "delta" thinking, which sees the future as a series of incremental gains on the baseline of the present.

Some of the assessments in "New World Vistas" have a ring of inevitability. One such is the prediction that space will become vastly more important as a "domain of conflict." The study makes a convincing case that

we will depend primarily on commercial providers for spacebased navigation, communications, data links, and reconnaissance. These capabilities will be available to all, including governments unfriendly to us. "Control of space will become critical during the next decade," the report says. That entails protecting our own space assets—possibly with directed-energy weapons—and denying use of space to others.

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The Pentagon did not publish papers done by the individual "Vistas" study panels, but one of them, leaked to the press, explored the sobering implications of space as a domain of conflict. The study said the application of force from space will become feasible and affordable within thirty years and that it would then be possible to complete the equivalent of a Desert Storm strategic air campaign in a matter of hours.

A recurring message of the future studies is that the United States cannot count on either a monopoly of power or an automatic advantage in capability. The "Vistas" report says that "Our future enemies, whoever they may be, will obtain knowledge and weapons better than those we have at present by making rather small investments."

The Scientific Advisory Board warns that some of its findings will be "wrenching" for those of traditional disposition. That is certainly the case with the forecast of "uninhabited" combat aircraft, which the study figures the Air Force will one day fly in appreciable numbers. This concept goes beyond the unmanned drones and cruise missiles of today. Unin-

habited aircraft, built for speeds and pressures that humans cannot withstand, would be operated remotely from an Execution Control Center in the United States. The study adds, however, that such platforms "will not completely replace the inhabited aircraft for decades, if ever."

Indeed, the continuing role of steadily improving conventional aircraft runs through all manner of less exotic findings. Engine efficiency, for example, might increase by twenty percent, made possible by such factors as changing from mechanical bearings to magnetic or air bearings. The study also looks ahead to airlifters built for low-cost precision air-drop and "point of use delivery." They would deliver, without landing, their cargo to the exact spot where it is needed rather than to a terminal from which it would have to be trucked.

The futurists tell us to expect change on a grand scale. They foresee conflict in which the distinction blurs between threat and asset, between offense and defense, even between ally and enemy. A commercial satellite downlinking images of one-meter accuracy might be either of great value or great danger, depending on the circumstances and on how and by whom the imagery will be used.

The studies thus far indicate that we are driven forward by technology and need on three broad fronts: global awareness, global mobility, and the projection of lethal and sublethal power.

We will gain further insights in the months ahead as other studies are reported out, but one point is clear already. National security and defense strategies of the future will put central reliance on operations in air and space. Critical tasks include the ability to look deep, reach far, respond rapidly, command affairs upon arrival, and apply force with precision and finesse. These are functions performed best—or performed only—by airpower and spacepower. The US Air Force, building on its "Global Reach, Global Power" theme will be on track as the new century unfolds. ■