John McLucas left a deep imprint on the post-Vietnam Air Force.

Way of a Technocrat

By Lawrence R. Benson

John McLucas at work as Secretary of the Air Force.

In early 1969, Secretary of Defense Melvin R. Laird and his deputy, David Packard, were recruiting civilian executives to help oversee US military forces in the midst of the Vietnam War. Laird and Packard picked Robert C. Seamans Jr., professor of aeronautical engineering at MIT, to head the Air Force in the new Nixon Administration. Laird, Packard, and Seamans all wanted another technologically savvy leader to become undersecretary of the Air Force and—in a covert role—director of the National Reconnaissance Office.

Harold Brown, the outgoing Secretary of the Air Force, suggested John L. McLucas, president of the Air Force-sponsored MITRE Corp. McLucas, a World War II naval officer, had a doctorate in physics and previous Pentagon and industry experience.

McLucas got the nod. Arriving in March 1969, he went on to serve two Presidents and work with four Chiefs of Staff, later becoming Air Force Secretary. He played a key role in developing capabilities at the heart of today’s Air Force. McLucas oversaw the development of the E-3 Airborne Warning and Control System aircraft, he sponsored the F-16 lightweight fighter, promoted unmanned aerial vehicles, and argued for highly advanced space systems. He fought for the Global Positioning System.

Throughout his career, the mild-mannered McLucas was proud of being a successful “technocrat”—a nonpartisan executive who combines scientific or engineering expertise with administrative acumen. The Air Force was entering a turbulent period. Among the many problems these leaders faced was the need to cope with the growing Soviet military threat in a time of declining budgets and waning public support.

During the mid-1960s, the Air Force had turned much of its attention away from developing new weapon systems toward modifying existing equipment, including Navy aircraft and tactical missiles, to meet requirements for the war in Southeast Asia.

Some of the major acquisitions initiated during the early 1960s encountered embarrassing cost overruns and mechanical problems. Two were of special concern when the Seaman-McLucas team came on board: the F-111 fighter-bomber and the giant C-5A Galaxy transport. Laird is said to have joked that his three biggest problems were the Vietnam War, the F-111, and the C-5A.

The Air Force’s new civilian leaders were determined to more successfully develop the next generation of weapon systems. McLucas was among Packard’s most loyal disciples in his campaign to reform defense acquisition. Principles included “fly before buy,” competitions between prototypes, realistic contracts, and carefully defined program milestones.

Working closely with the Air Staff and Air Force Systems Command, McLucas also encouraged the assignment of higher-ranking and longer-serving managers at system program offices, including the creation of “super SPOs” for the most important programs.

McLucas was impressed by the new systems the Air Force had on its wish list but was worried about how to pay the bills. In June 1969, he recommended that the Air Force stagger its major programs to spread peak contracting costs. His priorities were:
Early procurement of the F-X air superiority fighter, known to us now as the F-15, because it had manageable technical risks and was urgently needed.

Slowdown of the E-3 AWACS program by focusing on a careful evaluation of competing radars.

Full prototype competition for the A-X close air support aircraft, which became the A-10.

Careful refinement of system requirements for an Advanced Manned Strategic Aircraft, now known as the B-1 bomber.

McLucas' strategy was essentially realized with the sequential introduction of the F-15A, B-1A, YA-10, and E-3A during his next six-and-one-half years with the Air Force.

Of all the aircraft developed during the 1970s, the two that most involved look down and track targets flying over land.

“Every time the radar contractors made an improvement, I was duly impressed with their ingenuity, but I was still cautious about trying to push the technology too fast,” he said.

In May 1969, just two months after becoming undersecretary, McLucas set forth the basic acquisition strategy for the AWACS. With the radar the key technical item, the strategy called for a radar flyoff first, with non-radar work initially on the back burner. The Air Force decided to convert Boeing 707-320B aircraft into AWACS platforms, starting with two test bed models.

In addition to modifying the airframes, Boeing was selected as the prime contractor for integration of the various system components. McLucas had to fight various attempts to reduce basic capabilities.

A painstaking evaluation of competing radars became a key factor in the program. Using a variety of aircraft as targets, a combined test force in Seattle evaluated two “brass board” versions of the system over several geographical environments, with Westinghouse winning the competition.

In January 1973 the program entered full-scale development. A high intensity air campaign over Central Europe emerged as AWACS’ most important mission, supplanting the original primary mission of air defense.

During the next two years, four pre-production E-3As underwent a thorough systems integration and test program. This included two deployments to Europe and a realistic “free style” exercise against a formidable aggressor force to allay doubts about its survivability.

Gen. David C. Jones, who had been won over to the value of AWACS while commander of US Air Forces in Europe, led an active campaign for its acceptance after he became Chief of Staff. The Department of Defense authorized procurement of the first block of production aircraft in April 1975.

AWACS has gone on to become a tremendous force multiplier for the Air Force and NATO allies, proving itself repeatedly, as in the 1991 Gulf War when continuously orbiting E-3s controlled one of the most intense and successful aerial operations in history.

“Today’s Air Force pilots,” McLucas later remarked, “probably find it hard to imagine fighting a major air battle without E-3 Sentrys watching over them and the enemy.”

McLucas would soon be the Air Force’s highest-ranking advocate for what became the F-16 as well. He approved release of the remarkably short and flexible request for proposal on the Lightweight Fighter Program in December 1971. He endorsed an affordable “high-low mix” of fighters to match up with the Soviet Union’s large inventory. He also foresaw the enormous foreign sales potential of a small high-performance fighter with a ground attack capability.

With top cover from the new Defense Secretary, James R. Schlesinger, and his deputy, William P. Clements Jr., McLucas pushed the Lightweight Fighter demonstration into a full-blown competitive flyoff between General Dynamics’ YF-16 and Northrop’s YF-17. To lay the groundwork for NATO procurement, McLucas put a Dutch lieutenant general on his source selection council.

McLucas picked the YF-16 in January 1975 and turned his attention to selling it to a four-nation NATO consortium made up of Belgium, Denmark, the Netherlands, and Norway, all of whom needed a fighter to replace their F-104s. Among the inducements: unprecedented co-production arrangements.

In May 1975, McLucas won his case; the European consortium’s initial order of 348 aircraft marked the first of many foreign sales of the F-16.
In both his NRO and Air Force roles, McLucas oversaw numerous unmanned aerial vehicle programs, ranging from advanced permutations of Ryan’s venerable Firebee drone to more esoteric platforms such as Compass Arrow and Compass Cope. Some of them, anticipating future unmanned aerial vehicles, could operate autonomously, using rudimentary onboard computers.

In 1972 McLucas announced that USAF was on the verge of developing remotely piloted vehicles for some strike missions, suppression of enemy air defenses, radio relay platforms, and even air superiority combat. After McLucas left the Pentagon, the Air Force’s RPV development slowed to a virtual standstill for 20 years.

At the same time, however, progress on precision guided munitions and air-to-ground missiles continued. “Unlike RPVs, which seemed to compete with manned aircraft, PGMs and AGMs enhanced their capability,” he explained.

The space program that most captured McLucas’ imagination was the Global Positioning System. He helped assure consolidation of separate Navy and Air Force navigation satellite efforts into a joint program under USAF management in 1973. He then worked to keep GPS funded despite questions about its military value.

In the January 1974 issue of this magazine, he predicted that the “virtually unlimited and largely untapped” potential of satellite navigation and position finding “offers revolutionary potential for blind weapon delivery, standoff systems, and—to a degree—the elimination of weather and visibility as major factors in military operations.”

Carrot vs. Stick

McLucas also remained a passionate advocate for civilian uses of the Global Positioning System—as advertised by having the letters “GPS” displayed on his customized Virginia license plates.

Not all the challenges McLucas faced were technological—the end of Vietnam brought about the all-volunteer force. One of Laird’s last acts as Secretary in January 1973 was to suspend the military draft five months ahead of schedule.

Although the Air Force had always been able to attract qualified enlistees, many worried that the “carrot” of higher pay being offered for the all-volunteer force might not be enough to replace the “stick” of being drafted into the Army. A survey of first-term airmen revealed that only 42 percent would have enlisted without having been vulnerable to the draft.

To assure the Air Force would meet its enlisted requirements, McLucas pushed for quality of life enhancements and educational opportunities. These included improving living conditions, better meeting of personal assignment preferences, devising a more impartial promotion system, and offering better technical training—to include awarding academic credit with the new Community College of the Air Force.

McLucas revealed his philosophy in these words: “There are some people who will say you’re wasting money educating all these people beyond where they need to be carried. ... When we turn people back out on the civilian economy, ... they’ll do a better job for the country, and every dollar we invest [in them] is well spent.”

When McLucas was “promoted” and sworn in as Air Force Secretary on July 18, 1973, Women in the Air Force (a separate administrative category known as WAF) plus those in the nursing corps amounted to only 2.7 percent of all active duty personnel.

In his acceptance speech, the new Secretary emphasized his philosophy on expanding equal opportunity. He announced an ambitious goal: “to increase the number of women by a factor of three in the next five years.”

On Nov. 7, 1975, Defense Secretary Schlesinger presided at a farewell ceremony for McLucas at Andrews AFB, Md., where he gave a hard-hitting speech on the need for a stronger military. Because President Ford had just announced his decision to fire Schlesinger, this event drew national media attention.

When it was McLucas’ turn to speak, he dropped a bombshell of his own. The Air Force “will soon open limited pilot duty to our women, who, while prohibited from participation in combat, can still serve us in transport activities and others,” he said. Although the Air Staff had no plan in place to implement this fait accompli, McLucas was confident it would find a way.

The first group of USAF female pilots received their wings in September 1977. McLucas’ unilateral decision upon departure—one of few made without consulting his military colleagues—was carried out as he had predicted.

After leaving the Air Force, McLucas served as an officer or consultant with more than 25 corporations, professional associations, advisory groups, and educational institutions. He continued to be involved with the Air Force until his death at 82, in 2002. Secretary of the Air Force James G. Roche presided over the interment of his predecessor at Arlington National Cemetery. A missing man formation of F-16s—the fighter that John McLucas had helped bring into existence—flew in honor overhead.

Lawrence R. Benson retired as chief of the Air Force Historian’s Pentagon Office in 2000. For more on McLucas, see his 2006 book Reflections of a Technocrat: Managing Defense, Air, and Space Programs During the Cold War (co-authored by McLucas, Benson, and retired Col. Kenneth J. Alnwick). This is Benson’s first article for Air Force Magazine.