

Transformational Recapitalization

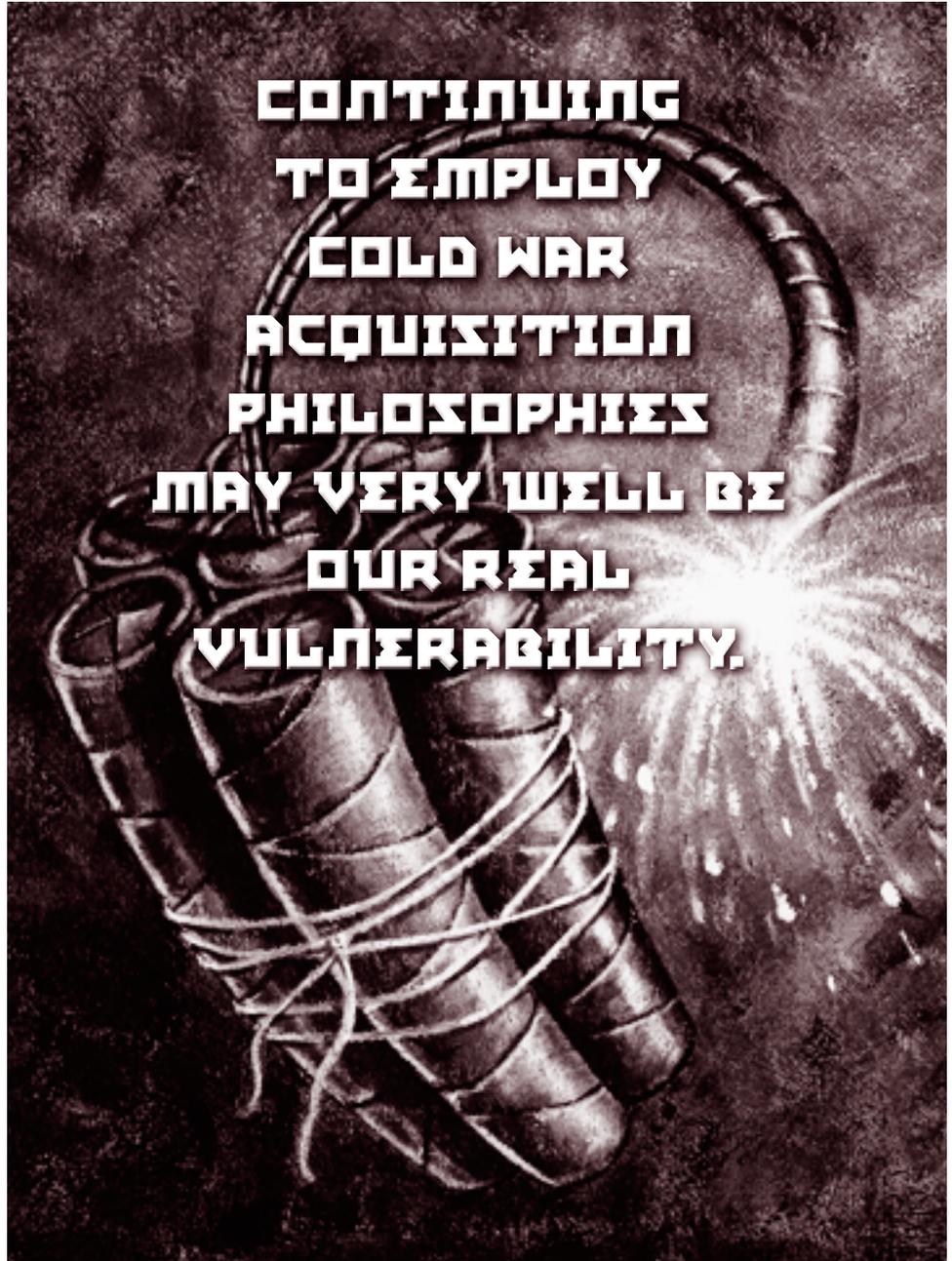
Rethinking USAF Aircraft Procurement Philosophies

Sheila R. Ronis

Adozen years have passed since the end of the Cold War, and a new world is emerging—one that is different from what many imagined. The struggle for economic power is becoming the focus of our allies, while terrorism is becoming the focus of our foes. With no near-peer competitor to keep military operations in check, we have seen increasing use of our forces to combat smaller uprisings and terrorism. Maintaining our economic strength and military superiority in this new world requires transformational thinking at the very core of our systems acquisition philosophy.

“Maintaining our unchallenged military superiority requires investment to ensure the current readiness of deployed forces while continuing to transform military capabilities for the future. Our adversaries will learn new lessons, adapt their capabilities, and seek to exploit perceived vulnerabilities. Therefore our military must transform and must remain ready, even while we are engaged in war.” These words, spoken by the chairman of the Joint Chiefs of Staff, Air Force Gen. Richard B. Myers, in his most recent posture statement to the Senate Armed Services Committee, point to a strategy of transformation, a strategy that balances the need to re-capitalize aging Cold War systems while reducing budget deficits

and strengthening our own industrial base. This is not an easy task, but it is one worth pursuing.



Ronis is president, The University Group, Inc., in Birmingham, Mich., a consulting firm and think tank specializing in strategic studies and public policy. She holds a doctorate from The Ohio State University in large formal social systems science and organizational behavior.

As the Pentagon tries to transform itself for the 21st century, we're seeing mindset changes from threat-based responses to capabilities-based assessments. As a result, the Department of Defense has canceled Cold War programs like the Crusader and Comanche that are no longer of significant value. These decisions take courage, and DoD should be applauded for their efforts. The debate, however, needs to go even further. DoD should focus on whether investments in systems that were designed to counter a Cold War threat should be continued and on transforming the philosophies that drive the acquisition processes that produce those systems. Continuing to employ Cold War acquisition philosophies may very well be our real vulnerability.

Legacy of the Cold War Mentality

During the Cold War, our country's acquisition philosophy was straightforward: to use our robust industrial base to produce as many weapon systems as possible, as fast as possible, with the most advanced technology available. The country's industrial base was happy to oblige, as increased quantities meant reduced unit costs and increased profits. The government containment strategy in the Cold War used high quantities of systems with state-of-the-art technology to out-produce the Soviet Union. The United States overwhelmed the U.S.S.R. both economically and with global power projection. It was a great strategy for its time; it helped us win the Cold War.

In the 1990s, after decades of living in a Cold War environment, we put an emphasis on balancing the budget. Part of the transitional strategy in order to balance the budget in a world of peace and prosperity was not to change our Cold War acquisition philosophy, but just to put it on hold. We began looking for leaps in technology. We chose to modify and extend the life of existing systems while stretching out development programs in order to skip a technology generation. As a result, DoD now has too many old systems being extended way beyond their intended life. For example, according to Air Force officials, B-52s may be used more than 94 years; C-130s, more than 79 years; KC-135s, more than 86 years; and the F-15, more than 51 years. Obviously, none of these planes was designed to fly that long. With the unexpected increases in operations tempo since 9-11, our systems are aging even faster.

We now find ourselves with a looming problem. We cannot afford to recapitalize all our aging systems at the same time, yet each program is still being guided by the Cold War acquisition philosophy—to use our robust industrial base to produce as many weapon systems as possible, as fast as possible, with the most advanced technology available. Although budget constraints have limited what we can do (i.e., F-22 “buy to budget”), they have not yet changed our philosophical approach. It's time for a new philosophy that recognizes that we don't need the most

advanced technology quickly, that we don't need to deliver as many units as fast as possible, but that we *do* need to preserve an industrial base that is not as robust as we would like to believe.

U.S. Aerospace Preeminence Threatened

With the rise of globalization, U.S. industrial base health and that of the defense industrial base and its organic component show signs of weakening.

The November 2002 *Final Report of the Commission on the Future of the United States Aerospace Industry* states: “The contributions of aerospace to our global leadership have been so successful that it is assumed U.S. preeminence in aerospace remains assured. Yet the evidence would indicate this to be far from the case. The U.S. aerospace industry has consolidated to a handful of players—from what was once over 70 suppliers in 1980 down to five prime contractors today.”

Representative Curt Weldon, R-Pa., vice chairman of the House Armed Services Committee, was concerned enough about the report's conclusions (for example, that the nation stands “dangerously close to squandering the advantage bequeathed to us by prior generations”) that he conducted a hearing in March 2004 to address DoD and Department of Commerce responses.

In the hearings, Joseph H. Bogosian, deputy assistant secretary of commerce for transportation and machinery, testified that “the United States is no longer the world's predominant supplier of large civil aircraft, having lost that mantle last year when Airbus delivered more aircraft than Boeing after three consecutive years of winning the majority of new aircraft orders. Our current status in the large civil aircraft business is a far cry from the days when we had two and three U.S. manufacturers fully supplying Western markets.” In addition, the Aerospace Industries Association says that “the U.S. market share of global commercial sales dropped from 72 percent to 52 percent between 1985 and 2000, that aerospace profits are at their lowest level in eight years and that the aerospace trade surplus has experienced a 32 percent drop since its high of \$41 billion in 1998.” The conclusion is clear: there is no longer a robust aerospace workforce that has both depth and flexibility. In fact, there is an alarming trend in outsourcing capacity overseas through offset programs.

According to Frida Berrigan of the World Policy Institute: “Between 1993 and 1998 (the most recent year for which data is [*sic*] available), offsets generated \$21 billion in aid to purchasing countries within 279 agreements to sell weapons and services.” Berrigan writes, “Even though offset deals generate new sales, they don't necessarily generate additional profits for the companies. Many countries negotiate offset deals that include co-production agreements—meaning components of the weapons are

built in the purchasing country. For example, Boeing sold South Korea \$3.3 billion in F-15 fighter planes. In the deal, Boeing transferred \$1.5 billion in avionics, software and design technology to Seoul, essentially creating their future competition—by 2015 South Korea will be able to produce its own F-15.

“Lockheed Martin recently signed a \$3.5 billion contract with Poland for 48 F-16 fighter planes (which Poland will purchase with \$3.8 billion in loans from the U.S.). But *Aerospace Daily* reports that Poland is negotiating an offset package that could be worth more than \$6 billion. ...William D. Hartung, Senior Fellow at the World Policy Institute, notes that ‘there are twice as many workers employed building the F-16 in Ankara, Turkey (2000), as there are at Lockheed Martin’s principal F-16 plant in Fort Worth, Texas (1,155).’ The U.S. is losing more than 4,000 jobs each year as a result of offset agreements, according to a 2001 Presidential Commission.” An offset is a form of U.S. aid, and although it may be a critical element of our foreign policy, it must be weighed and in balance, or we can jeopardize the health of our own industrial base capabilities, not to mention U.S. jobs.

Why should our friends have better and newer equipment than our men and women in uniform? Especially when the U.S. taxpayer is often paying the bill? Offsets may make changing U.S. and DoD policy a difficult process, but we need to learn how to balance the offset process with the needs of the nation to ensure we do not destroy our capabilities by giving them away and paying for that privilege in the process. The U.S. Department of Commerce says that 120 nations require offsets as part of weapons sales.

A New Philosophy: Transformational Recapitalization

It’s time to adjust our acquisition strategy to one based on a philosophy of transformational recapitalization—the rethinking of aircraft procurement, technology insertion, resale, and reuse. We need a change that emphasizes maintaining our industrial base, stabilizing cash flows, and balancing globalization and that places less emphasis on high production rates, superior technology, and unit cost.

Transformational recapitalization would require the Air Force and Congress to fundamentally change the current acquisition philosophy. Instead, the Air Force should consider the following approach:

- Buy as few aircraft per year as economically possible but for a much longer period of time.
- Insert new technology into those weapon systems as it becomes available, and in defined increments.
- Do not retrofit or modify weapon systems; instead, while the older systems still have valuable life, sell them

to foreign governments or commercial companies (if appropriate), and use the sale proceeds to offset the continued purchase of more capable replacements.

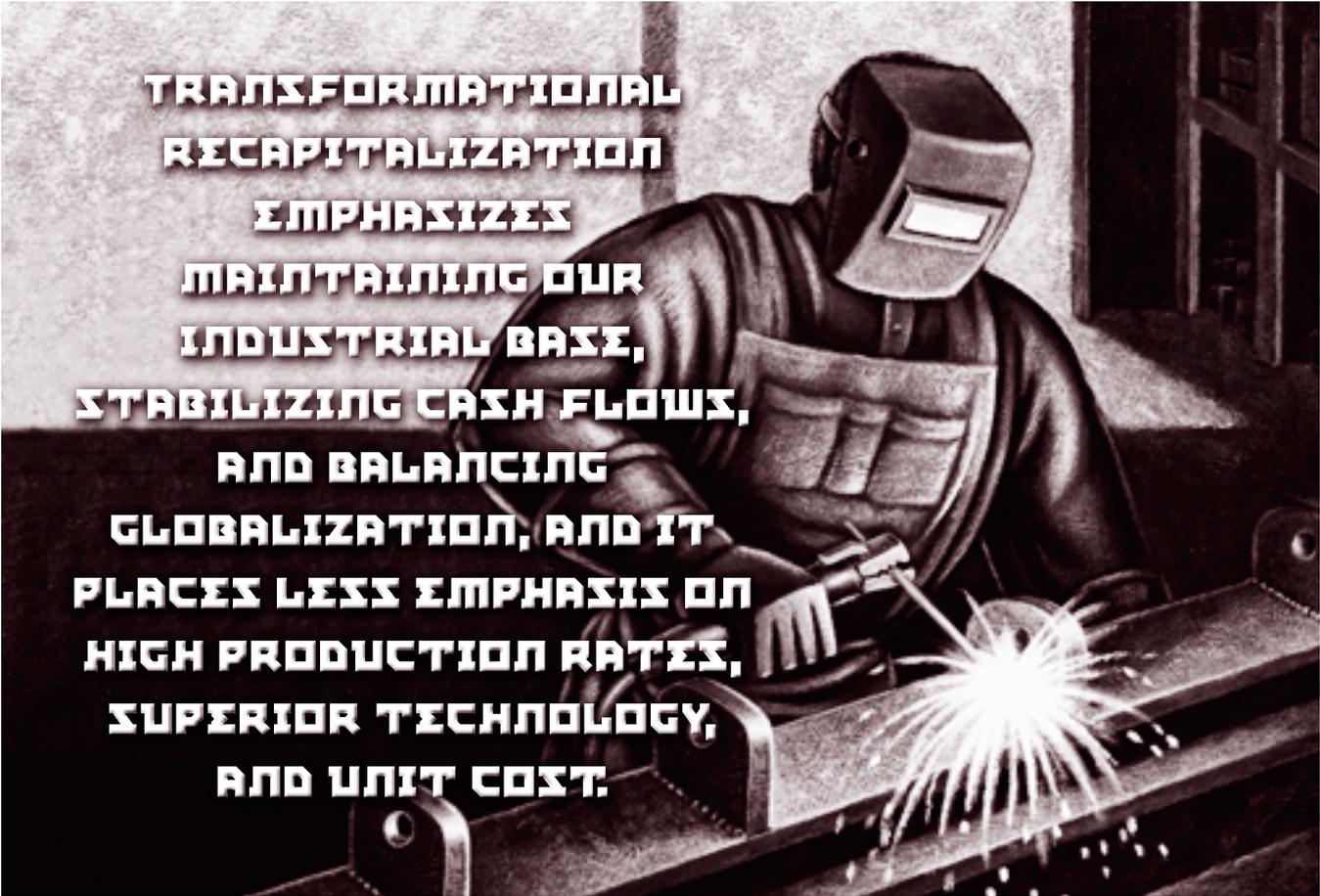
This approach would allow a leveling of production runs with long-term stability of the industrial base as opposed to the peaks and valleys currently experienced. It would also allow technology insertion by controlled spirals versus high-risk new platform development. Finally, the resale value not only provides income, but reduces aging aircraft costs, avoids modification cost, and allows us to provide offsets to foreign governments in the form of maintenance and modification capacity as opposed to high-end production capacity.

How the Strategy Works

To illustrate, let’s apply this strategy to a fictitious Air Force need for a fleet of 300 aircraft. Instead of producing them at a very efficient rate of 75 per year for four years, produce them at a reasonably efficient rate of 20 per year for 15 years. Every four or five years, incorporate a technology spiral upgrade to new aircraft coming off the production line; however, do not retrofit existing aircraft. Near the end of the 15-year production, begin selling the oldest, less capable aircraft while they still have at least half their useful life remaining. Then, instead of closing the production line, continue producing new aircraft to replace those sold. Theoretically, the production line can continue indefinitely until either technology or requirements drive the need to produce an entirely new platform or when demand for the used aircraft dries up.

Although the unit price of each aircraft may be slightly higher, the lower production rate combined with used-aircraft sales revenue should decrease overall cash flow and provide much-needed stability to the budget and our industrial base. In addition, this strategy not only facilitates spiral development, but also ensures that the U.S. military flies the most capable aircraft while avoiding maintenance and operating costs for aging aircraft. Finally, although this strategy does not preclude foreign military sales (FMS) of new aircraft, it does reduce the leverage that FMS customers have for offsets, at the same time increasing the number of potential customers as a result of decreased acquisition cost of used aircraft.

This was not the strategy we employed with most of our current systems. For example, the U.S. Air Force bought over 2,000 F-16s between 1979 and 1993. The average rate was about 150 aircraft per year, with a high of 212 to a low of 118. FMS from 1979 through 2004 accounted for another 1,900 plus aircraft, allowing the production line to continue. But the volatility of the line from a high of 299 in 1987 to a low of 21 in 2002 adds to industrial base workforce instability and increasing unit cost. Since 1994, however, FMS customers, for whom most of the aircraft were produced, were in position to demand sig-



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nificant production offsets. Not only did they get high-end production capacity offsets, they are now flying the newest block aircraft—planes that are more capable than those in the Air Force inventory.

Using today's threat environment and budget constraints, a better strategy might be to produce F-16s at 120 (100 U.S., 20 FMS) per year for 40 years. This would stimulate an FMS demand for used aircraft in addition to the small number of new ones. The Air Force could start selling used aircraft at the 10- to 15-year point and apply the value to the purchase of new, more capable aircraft. If offsets are needed for countries buying used aircraft, those offsets could be in the form of maintenance and modification/upgrade capacity, the foundation of economic stimulus, as opposed to high-end production offsets. The story is similar with the F-15 and C-130, large aircraft fleets with which we now have significant aging aircraft and recapitalization bills looming.

Food for Thought—and Action

To begin now to apply this strategy, it's worth considering the following suggestions. Since production of the highly capable F-22 has already started, it is prudent to continue. However, instead of a buy-to-budget strategy, use a re-capitalization strategy—one that maintains a lower production rate for a longer, stable, multi-year period. The production stability alone should compensate

for the loss of rate efficiency. Begin buying 24 F-22s per year with a 15-year production run. At the 10-year point, begin selling some used aircraft through FMS, allowing the production line to extend to 20 years or more.

For the F-35, maybe the solution is to slow down development of that platform and instead begin buying more F-16s at 50 per year. Then the F-35 can be introduced when ready and affordable instead of being forced into production because of F-16 aging problems.

For the 10-year-old C-17, now is the time to start selling older less capable craft and continue production of new ones for the Air Force. As the last major aircraft production line in southern California, it would be devastating to lose that industrial capacity in 2008 when the 180th aircraft is finished. Reducing the rate to 12 per year and selling off older inventory would not only allow the production line to continue for another 10 years, but applying the resale value and avoiding upgrade modifications would significantly reduce the cost of increasing the capacity of the fleet.

The C-17 also provides an additional incentive in that not only will FMS customers line up to buy a reduced-price, used C-17, but this aircraft has commercial potential as well. Recent studies completed by the Air Force indicate a market for 60 or more commercial C-17s. The problem



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is that the high cost of a new aircraft is too risky for a new business venture. The cost of a used aircraft, however, should be low enough to offset that risk. But the most compelling aspect of commercial C-17s is that the aircraft would still be available to meet our total mobility requirement as part of the Civil Reserve Air Fleet (CRAF). This concept not only satisfies DoD's desire to rely more heavily on the CRAF, but also lowers Air Force aircraft acquisition cost while increasing capacity to meet wartime requirements.

philosophy and policy for re-capitalization, one that stabilizes production over a longer period, introduces technology in smaller, more spiral increments, and disposes of assets while they still have value to commercial enterprises or foreign governments.

The Air Force and DoD need to build on their capabilities-based acquisition movement and include a recapitalization philosophy from the outset of system development planning. This is in alignment with the new Air Force Interim Guidance for Capabilities Based Acquisition System that states evolutionary acquisition (EA) "is the preferred DoD and AF strategy. An evolutionary approach delivers capabilities in increments, recognizing, up front, the need for future capabilities improvements. The objective is to balance needs and available capabilities with resources, and to put capabilities into the hands of the user quickly."

Arthur Cebrowski, OSD director of force transformation, said in a March-April 2004 *Defense AT&L* interview, "Transformation has many elements. Perhaps one of the most important is that it involves creating or anticipating the future. Either you create your future or you become the victim of the future that someone else creates for you. The United States, by virtue of its position in history, has the ability to create a future that furthers the dignity of man and all the values we hold dear."

It is time to expand our critical thinking about the way we procure and support our military's weapon systems with a long-term vision for our future.

In today's world, with no near-peer competitor, the increase in globalization is a two-edged sword. We are still far superior in technology, and our economy is still the largest on the planet. But there are potential cracks in our industrial base that only policy can address. High deficit spending and the outsourcing of jobs in high-end manufacturing and technology may ultimately weaken our economy and military industrial base capabilities irrevocably. The United States needs a new phi-

Editor's note: The author welcomes comments and questions. Contact her at sheilarr@aol.com.