

**Ends Versus Means:**

# **The 6th Special Operations Squadron and the Icarus Syndrome**

by

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"Why can't they buy just one airplane  
and take turns flying it?"

Calvin Coolidge

In October 1994, Air Force Special Operations Command (AFSOC) fielded the 6th Special Operations Squadron (6 SOS), the first-ever USAF squadron dedicated to the foreign internal defense (FID) and coalition support mission areas. In the Spring 1997 issue of *Airpower Journal*, the author of this study detailed the underlying concept and development of this unique squadron in an article entitled "Whither Aviation Foreign Internal Defense?", bemoaning the fact that only "two aged UH-1N helicopters—originally en route to the boneyard—have been assigned to the squadron."<sup>1</sup> Now, over a year later, the 6 SOS remains equipped with these same helicopters.<sup>2</sup> The question, then, is why? More importantly, what is the moral of the 6 SOS in terms of the larger implications for Air Force special operations forces (AFSOF) and the US Air Force? The answers to these questions are complex and not encouraging, but can be summed up in what RAND Corporation analyst Carl Builder termed the "Icarus Syndrome."

In his controversial book of the same name, Builder argued that the Air Force has abandoned the concept of airpower as a unifying theory regarding the employment of the air weapon. Albeit limited in its classical sense to the independent and strategic employment of the inherently offensive nature of the airplane, original airpower theory at least provided a sense of purpose greater than simply satisfying the "aviator's abiding love of flight and flying machines." According to Builder, "the theory of airpower—the idea of aviators unified in a cause much larger than themselves—was originally conceived around the airplane as a new means to broad and important ends." Today, however, this guiding principle has been turned on its head.

The Air Force...has identified itself with the air weapon, and rooted itself

in a commitment to technological superiority. The dark side of this commitment is that it becomes transformed into an end in itself when aircraft or systems, rather than missions, become the primary focus....Because of its focus on systems and commands rather than missions and strategies, the Air Force views innovation more as a threat than as an opportunity.<sup>3</sup>

Ironically, the development of the 6 SOS as an aviation-centered FID unit is a remarkable reflection of this dynamic, but with an unusual twist. Focussing on mission and strategy requirements, AFSOC FID planners advocated the procurement of airplanes ideally suited to the aviation-FID mission; however, these aircraft were rejected because they did not comport with the acceptable notion of a front-line weapon system. Consequently, the Mission Need Statement justifying "a family of Air Force, FID-specific aircraft" was rejected by USSOCOM in 1993 and no aircraft were programmed for what was ostensibly a "flying" special operations squadron.<sup>4</sup> Adding insult to injury, 6 SOS designers were accused of attempting to create a "flying club," owing to the "off-the-shelf" and "low-tech" nature of the airplanes requested. And yet every Commander-in-Chief of US Special Operations Command (USSOCOM) since 1990 and a succession of AFSOC commanders have validated the concept of aviation-FID as originally articulated, and reams of studies have demonstrated conclusively that simple, inexpensive, reliable, and "alternative technology" platforms are best suited for the aviation-FID mission. In that light, the purpose of this essay is to re-assert the need for appropriate aircraft for the 6 SOS.

### **The 6 SOS Mission Area Defined**

The 6 SOS has its roots in special air warfare dating back to the Vietnam War and the need to advise, train, and assist foreign air forces in the application of airpower to combat internal threats and facilitate internal development. Since its inception in 1994, however, post-Cold War mission requirements have dictated that the squadron evolve beyond exclusively aviation-FID to address an array of operations subsumed within the construct of coalition support.<sup>5</sup> Nevertheless, the core mission remains intact: inculcating in foreign air forces the idea of the utility of airpower across the conflict spectrum, but especially operations falling within the rubric of "low intensity conflict" (LIC).

AFSOC FID planners modeled the 6 SOS on US Army Special Forces (SF), creating a combat advisory unit supporting the theater combatant commanders' training and advisory needs during crisis, contingency, and war. 6 SOS personnel are area-oriented and foreign language-trained aviation experts comprising a wide variety of air force specialties, to include fixed and rotary-wing pilots, other aircrew personnel, maintenance and logistics troops, and a host of other specialties. Similar to SF operational detachments, or "A" teams," 6 SOS personnel deploy in task-organized operational aviation detachments (OAD) which co-locate with host-nation aviation forces. Although the 6 SOS is not the only unit capable of advising foreign forces, it is the only Air Force unit specially trained to accomplish this mission. OADs train and advise foreign air forces at the squadron, wing, and headquarters levels on how to employ and sustain airpower in support of internal defense and development strategies, or to participate in combined operations with US forces. Regarding the latter, 6 SOS OADs coordinate operational and tactical closure between coalition aviation units and US forces. Nevertheless, imparting a sense of "airmindedness" and bequeathing a fundamental grasp of "airpower" to foreign air forces remains at the heart of the 6 SOS mission. And airpower means airplanes.

But airpower is more than simply airplanes for their own sake. As Admiral Arthur Radford, World War Two carrier aviator and one-time Chairman of the Joint Chiefs, once remarked: "airpower is the ability of a nation to exploit airspace for its own purposes."<sup>6</sup> The key, then, is to select appropriate airplanes in terms of the desired objectives. Failure to match the right means to the end in mind invites failure of airpower to support a country's national strategy. It is in this regard that the Thai experience in the 1960s proves instructive.

### **Misplaced Means to an End: The Case of Thailand, ca. 1970**

The historian's basic questions are simple: What happened? And what forces or developments shaped this action? Thucydides understood the usefulness of this line of questioning when he argued in his history of the Peloponnesian Wars that his purpose was to enable future decision-makers to act wisely when faced with similar choices. In effect he wrote for "those inquirers who desire an exact knowledge of the past as an aid to the understanding of the future."<sup>7</sup> The usefulness of the historian's perspective to our purposes here is therefore tied directly to Santayana's dictum that those who do not learn from history are condemned to repeat it.<sup>8</sup> The warning for us today, however, is bound up more in Arthur Schlesinger's reversal of Santayana's maxim: "Those who can remember the past are condemned to repeat it."<sup>9</sup>

According to the original FID study conducted by AFSOC in 1991, a majority of Third World air forces either do not possess the appropriate aircraft or are unable to maintain the aircraft they do have. Moreover, "they have equipped their air forces to fight external wars, often with fast-moving jet aircraft entirely unsuited to counter-insurgency, counternarcotics, and nation-building operations." These aircraft tend to be expensive, maintenance intensive, and possessing limited to no capability to access remote areas. Accounting for this tendency is the fact that foreign air forces tend to look to the US Air Force as a model and mentor. Unfortunately, since the US Air Force has "concentrated on developing sophisticated tactical and special operations weapons systems for US war-fighting requirements, its aircraft are far too expensive and complex for use by Third World governments."<sup>10</sup> Yet the innate tendency of the US Air Force is to encourage Third World air forces to buy these very systems. And very often, small foreign air forces acquire these self-same systems more for "prestige" purposes than military necessity. Such was the case in Thailand.

From 1955 to the end of the Vietnam War, aircraft deliveries represented the single most costly transfer of US military hardware to the Royal Thai Armed Forces. The US provided over 800 aircraft of more than two dozen types by 1970. More than half of the aircraft supplied during this period were fighters—over 200 F-8s in the 1950s, followed by 30 F-84Gs, 60 F-86s, and finally a squadron of F-5s. But as a 1971 Advanced Research Projects Agency (ARPA) study concluded, supersonic jet fighters were wholly unsuited to the strategic needs of Thailand. An earlier General Accounting Office (GAO) review in 1969 similarly concluded that the jet fighters furnished to the Royal Thai Air Force (RTAF) had not "contributed greatly to the realization of primary US objectives" in the region. Perhaps the most illuminating aspect of this episode, however, is the fact that the Thais rejected an additional squadron of F-5s and elected to purchase, with

their own funds, a squadron of turboprop counterinsurgency aircraft.<sup>11</sup> How this came about is especially relevant to the mission of the 6 SOS today.

It must be stated up front that many senior officers in the RTAF wanted the F-5s from the very beginning, driven largely by their desire for a prestige weapon system. In 1965, both Morocco and the Philippines were flying the F-5. The Thai Deputy Minister of Defense, Air Chief Marshall Dawee, noted that the RTAF was still flying obsolescent F-86s. In May of that same year, he complained to US Defense Secretary Robert McNamara about the matter. McNamara, concerned about basing US combat aircraft in Thailand to support ongoing US efforts in Vietnam, was persuaded. Consequently, the Pentagon transferred eighteen F-5s to Thailand by grant in early 1969 under the auspices of the Military Assistance Program (MAP). Following delivery of these aircraft, the RTAF expressed its desire to explore the possible purchase of an additional squadron of F-5s to replace the aging F-86s.<sup>12</sup>

As often occurs in such transfers, military necessity took a back seat to politics. The Conte-Long Amendment had earlier been passed by the US Congress, designed to prevent the unnecessary transfer of sophisticated military equipment to developing countries, thus providing for a reduction in US aid equivalent to the amount a developing country spent on "sophisticated weapons systems." Such a penalty could, however, be waived by the President provided alternative solutions were adequately explored. But the alternatives considered by the Pentagon were the F-4 "Phantom," a "stripped" version of the F-4, the CL-1195, the F-5-21, and the F-100D. All were rejected due to their expense (e.g., a squadron of eighteen F-4s would cost approximately \$50 million as opposed to \$22 million for F-5s) rather than the fact that they were inappropriate to Thai strategic requirements. Defense Department officials therefore pressed forward with the sale of the F-5s and secured State Department cooperation in order to avoid the penalty of the Conte-Long legislation. The President subsequently approved the waiver.

The Thai government, facing a nascent insurgency, wished to evaluate platforms more appropriate to their counterinsurgency requirements and commissioned Northrop Aviation, the manufacturer of the F-5, to make a systematic evaluation of appropriate aircraft. Not surprisingly, Northrop suggested three squadrons (one each for reconnaissance, air defense, and close air support) consisting entirely of F-5s. The RTAF rejected this "hard-sell" and asked Northrop to consider a mixed force of T-28s, A-37s, and OV-10s, as well as F-5s. What is remarkable about this decision is the fact that the Thais suggested alternatives (T-28, A-37, OV-10) not even considered by US analysts

(F-4, CL-1195, F-5-21, F-100). The Thais were more realistic, evaluating airplanes they were better suited to logistically support and more attuned to the counterinsurgency environment. With the exception of the A-37, these aircraft were far less expensive, propeller-driven aircraft—in contrast to the expensive supersonic fighter-interceptors considered by US officials. Although aware that the Thais had expressed earlier interest in the less sophisticated aircraft, the Thai decision to purchase low-tech counterinsurgency aircraft as opposed to jet fighters came as a surprise to Pentagon officials. The US Embassy later observed that the RTAF "had not changed its plans

lightly." They clearly believed "that they should put a higher priority on a plane that, in their judgment, [had] greater relevance to Thailand's security problem."<sup>13</sup> Nevertheless, Pentagon analysts continued to insist that the F-5 was the aircraft best suited for the RTAF and pressed the Thai government to overrule the RTAF decision.<sup>14</sup> According to the ARPA study:

The original United States decision to provide Thailand with F-5s through the military assistance program was made largely on political grounds and, given US policy priorities at the time, probably would have been very difficult to avoid. However, this does not alter the fact that the F-5 mission—or, more generally, the mission for any jet fighter-interceptor for the Royal Thai Armed Forces—was highly questionable....There has never been any operational use of Thai jet fighter-interceptors in combat conditions: they are of virtually no use in counterinsurgency, and there has never been any need to employ them against a conventional threat....The Thai, [therefore], were not ready to expend their scarce resources against an unrealistic threat, even if they had felt the need to acquire modern weapons systems for political or prestige purposes. [But] US personnel were more concerned about an orderly flow of goods and services....Once the United States began to supply Thailand with F-86 jet fighters, it seemed logical to replace them [with F-5s]. Until the Thai had decided instead to buy counterinsurgency planes, US analysis of alternatives focussed narrowly on other, less desirable, jet fighters such as the F-4 and F-5-21....[Consequently], this case illustrates the manner in which, in the absence of coherent planning, adequate data support, and timely and objective technical analysis, a series of randomizing factors can become overriding in MAP programming decisions....If it had been up to the US government, the Royal Thai Air Force would have wasted over \$20 million on unneeded F-5s...not because we pushed them into a decision to buy F-5s, but because we did not weigh in with sound, timely advice on alternatives.<sup>15</sup>

The inability of Pentagon analysts at the time—no doubt US Air Force officers—to recommend appropriate alternatives was arguably the result of an institutional predisposition toward sophisticated, conventional platforms. Such a predisposition remains paramount today, as evidenced by the continuing quest for the next generation of fighter, bomber, etc. This is not necessarily wrong, especially with respect to meeting the challenge of future conventional threats in high intensity warfare with a peer competitor. But the commitment to the conventional warfare paradigm and the concomitant tendency to seek high-tech platforms is often a debilitating one in LIC. It was for this reason that USSOCOM was created in 1987. Congress intended for the new command to pursue appropriate solutions relevant to the LIC environment. But since its creation, USSOCOM has placed greater emphasis on direct-action missions, necessitating high-tech weapons and platforms.

The specialization of AFSOF aircraft such as the AC-130, MC-130, MH-53J and now the CV-22 reflects the emphasis on direct-action, making them particularly expensive,

complex, and logistically demanding. If it is the tendency for conventional aviators is to think in terms of high-tech conventional platforms, then it should come as no surprise that special operations aviators similarly think almost exclusively in terms of their own specialized platforms. Recognizing the flaw in this thinking with respect to FID, a handful of AFSOC planners created the 6 SOS to address appropriate aviation technology in the LIC environment. But it is here that the "Icarus Syndrome" emerges with respect to aviation-FID: USAF, USSOCOM, and AFSOC leadership are constrained by their respective institutional cultures to think in terms of unique, one-of-a-kind weapon systems that fit into their particular worldview. The idea that an Air Force squadron—even a special operations squadron—would wish to acquire low-tech platforms is anathema. Hence the apparently obstreperous resistance to the 6 SOS acquiring airplanes relevant to its aviation-FID mission.

### **The Propeller Versus Jet Controversy**

One would think that AFSOF leaders would be predisposed to favor unconventional thinking and unconventional aircraft, particularly in light of the special operations aviation experience during the Vietnam War. But one would be wrong. Indeed, AFSOF units in Southeast Asia employed low-tech general purpose tactical aircraft of World War Two vintage at the outset of the war, but this was due to the early emphasis on training Vietnamese, Cambodian, and Laotian pilots to fly these very same aircraft in combat. Early "Air Commando" efforts (e.g., "Jungle Jim") therefore focussed solely on training Third World pilots in the use of low-tech aircraft for counterinsurgency purposes. But after the ground war in Vietnam heated up in 1965 with the introduction of US ground combat forces, AFSOF operations became more concerned with supporting surface forces and interdiction than providing training assistance to the South Vietnamese and other air forces in the region.

Nevertheless, Air Commando leaders such as Colonel Harry C. "Heinie" Aderholdt argued forcefully (and at some risk to their careers) that propeller-driven aircraft, with their long-loiter times and ability to deliver ordnance more precisely, were better suited to the counterinsurgency environment. World War Two-vintage A-26 aircraft had amassed an impressive record in interdicting the Ho Chi Minh Trail and supporting troops on the ground. More importantly, Aderholdt and other Air Commandos argued that such low-tech aircraft as the T-28 "Trojan" were ideally suited to producing "native" combat pilots.<sup>16</sup> But despite considerable evidence to buttress these arguments, senior Air Force commanders remained "committed to a totally modernized, all-jet Air Force," believing that jets were more survivable and logistically less burdensome.<sup>17</sup>

Early in the war, AFSOF leaders proposed a modification to the piston-engined T-28, a reliable and uncomplicated aircraft that was first delivered to users in 1959, as an interim "fix" until a purposefully designed counterinsurgency aircraft could be fielded. The original T-28 was a trainer, but the T-28D attack version could carry 3,000 pounds of ordnance, was armed with two fixed forward-firing 50-caliber machine guns, and boasted a 1300 horsepower engine (as opposed to the original 800 horsepower engine). The T-28D could be used for close air support and reconnaissance, as well as for training. More importantly, the simplicity and reliability of the T-28 made it particularly

well suited for developing countries with limited technical capabilities. The AFSOF-proposed "growth model" of the T-28D would include the installation of the R-1820-26 engine rated at 1,425 horsepower, a greater payload, and a photo-reconnaissance capability for intelligence purposes. In fact, a turboprop version of the T-28 was envisioned and a prototype constructed, the YAT-28E, equipped with a T-55 turboprop engine rated at 2,450 horsepower.<sup>18</sup>

In early 1962, the Department of Defense Director of Defense Research and Engineering (DDRE) advocated procurement of a light attack airplane specifically built for counterinsurgency operations. "Based on a [US Marine Corps] standard operational requirement...the aircraft would have two turboprop engines, a maximum gross weight of 6,500 pounds, the ability to take off over a 50-foot obstacle within 500 feet, a maximum cruise speed of 300 knots, and a combat radius of 50 miles (with a loiter capability of two hours)." But in November of that same year, Chief of Staff of the Air Force General Curtis LeMay informed Secretary of the Air Force Zuckert that the DDRE proposal was unacceptable.

LeMay...had serious reservations on committing significant resources to developing a specialized aircraft that had no potential for other than counterinsurgency operations. LeMay pointed out that (1) the proposed aircraft, except for takeoff characteristics, possessed less performance than could be obtained in any existing primary jet trainer modified for carrying weapons; (2) there was serious doubt on the validity of the estimated research, development, and procurement costs; (3) a completely new system would create new and distinct training and logistical requirements; and (4) most MAP countries would not want a turboprop aircraft because it lacked the prestige appeal of a turbojet."<sup>19</sup>

Not surprisingly, the Air Force subsequently proposed a modification to the T-37 jet trainer (YAT-37), calling for a new engine, six external pylons to carry up to 3,000 pounds of conventional ordnance, self-sealing internal fuel tanks, fixed forward-firing nose guns, a simple fixed gunsight, and other applicable modifications. Shortly afterward, the Air Force canceled further development of the "growth" and turboprop versions of the T-28, as well as the DDRE proposed counterinsurgency aircraft, and modified the T-37 jet trainer as an attack platform.<sup>20</sup>

What is remarkable about the "propeller versus jet" controversy is how closely the arguments against turboprop platforms as potential replacements for the T-28 anticipate those levied by critics of the 6 SOS regarding "unconventional" turboprop aircraft for the aviation-FID mission—except that criticisms directed at the FID initiative were coming from AFSOF leaders. Some in fact averred that FID planners wished to return to the "good old days" of a propeller-driven "junkyard air force." Regrettably, this myopic perspective played right into the hands of US Army officers at USSOCOM, who were convinced that the 6 SOS was a threat to Army special operations helicopter modernization programs—particularly efforts to upgrade the 160th Special Operations Aviation Regiment with the MH-47E and the MH-60K. When the senior US Air Force general officer on the USSOCOM staff accused AFSOC of pursuing a "flying

club," efforts to acquire suitable aircraft for the 6 SOS shut down and aviation-FID planners were forced to seek "non-material" alternatives (what one AFSOC planner termed "creative ventures").<sup>21</sup> The proximate cause of the "flying club" accusation was the request for three unique aircraft for the aviation-FID initiative: the Basler Turbo (T)-67, the Pilatus "Porter", and the Ayres "Vigilante."

### **Aviation-FID Aircraft**

The original FID study in 1991 focussed on realizing a unit capable of supporting then Defense Secretary Dick Cheney's contention that "our role is not to shoulder the burden ourselves, but to assist others in defending themselves."<sup>22</sup> AFSOC FID planners therefore set about to comply with Section I of Defense Planning Guidance, FY1990-1994, which stipulated that the United States should give "increased attention to developing or strengthening capabilities relevant to the range of third world challenges." (emphasis added).<sup>23</sup> Consequently, AFSOC FID planners advocated a "family of aircraft" for the 6 SOS representative of those found in, and more importantly useful to Third World air forces. The candidate aircraft were examined according to very specific criteria.

First, these aircraft should enable 6 SOS crews to develop and perfect the tactics, techniques, and procedures required to advise, train, and assist Third World air forces in the employment of their existing aviation assets. 6 SOS pilots and other crewmembers would necessarily have to be active flyers, current and qualified in "like" systems. Without currency and proficiency, aviation-FID advisors would lack all-important credibility with the foreign commanders and crews they would be expected to advise and train. Moreover, 6 SOS maintenance personnel—aviation-FID advisors and trainers in their own right—would similarly require "hands-on" experience with aircraft comparable to those found in the developing world. More importantly, few if any countries will seriously consider recommendations regarding off-the-shelf platforms if the US Air Force does not itself possess representative types of the very aircraft we are advising them to use. A perfect example of this reticency was reflected in the failure of the Northrop F-20 program, an aircraft which was designed from the ground up to be an export fighter. Not one country bought the F-20 for the simple reason that the US Air Force did not own and operate the airplane.<sup>24</sup> 6 SOS ownership of alternative technology platforms serves as a strong role model for air forces in the developing world. Moreover, ownership of such aircraft can contribute significantly to other USSOCOM missions, particularly covert and unconventional warfare operations.<sup>25</sup>

But the propeller versus jet controversy has persisted. In 1986, Dr Bill Olsen, a former assistant secretary of state and a major figure on the staff of the Assistant Secretary of Defense for Special Operations and Low Intensity Conflict, argued in an Air University Review article that the Air Force finds the idea of low-performance aircraft to be "embarrassing."

The tendency is to develop sophisticated jets—manifesting the "zoom-zoom" syndrome—and to encourage other states to acquire them regardless of whether these nations have the material base, technical

expertise, or strategic need for such systems. In fairness, other states want them, but we offer few alternatives. In some cases, we build ourselves out of the market. Unfortunately, however, our interests and those of our international friends mean that we are still called on for assistance, and our predilections often lead us into offering bad advice or assistance inappropriate to the local need.<sup>26</sup>

This proclivity remained fully entrenched in 1991 when the FID initiative began, but with a peculiar emphasis on leading-edge special operations technology. Alternative technology such as the Basler T-67 and Pilatus Porter simply do not fit into USSOCOM and AFSOC orthodoxy; thus prompting the 16th Special Operations Wing Commander, while observing a Basler T-67 performing a demonstration flight over Hurlburt Field, Florida, to declare: "they'll never get that airplane if I have anything to say about it."<sup>27</sup> But despite unyielding prejudice from above, FID planners remained convinced that appropriate platforms of three basic aircraft types are relevant to Third World air forces and the aviation-FID mission: tactical airlift, strike, and reconnaissance/surveillance.<sup>28</sup> Accordingly, candidate systems must be inexpensive, simple, rugged, reliable, easy to maintain, and capable of STOL (short take-off and landing) performance.

Tactical airlift is the basic requirement in LIC and AFSOC research regarding British Royal Air Force air operations in Oman and Malaya substantiated the need for medium and light-lift STOL-capable aircraft.<sup>29</sup> In Central and South America, for example, C-130s can operate from only a little over 5% of all runways (540 of the 10,400 airstrips). In contrast, a STOL-capable medium airlift aircraft can access 83%.<sup>30</sup> In Africa, only 15% of available runways are accessible by C-130s.<sup>31</sup> Albeit helicopters are very useful in these circumstances, FID planners considered the expense of operating and maintaining a fleet of helicopters as mitigating against promoting rotary wing solutions for challenges that can be overcome by less expensive fixed-wing aircraft. For example, ARPA research in 1970 determined that the Pilatus Porter could "pick up many missions ...now performed by helicopters."

Its acquisition cost is low (\$220,000, roughly comparable to the cost of the T-28D), and its operating costs (not including savings on airfields) are very low, at \$22 per hour. As the [DDRE] comment indicates, the Porter can duplicate many of the missions of the UH-1 helicopter (which costs \$250,000 to acquire and \$125/hour to fly).<sup>32</sup>

Although the dollar figures have changed over the years (mostly upward), the expense ratio has not.

Not surprisingly, strike aircraft requirements in the AFSOC study similarly placed a premium on low cost, reliability, and ruggedness. But as Dr Olsen pointed out in his 1986 article:

[USAF] tactical air doctrine and the attending force structure are designed for conventional wars against conventional enemies. In most low-intensity conflict situations, control of the air is established by default, while

isolation of the battlefield, where there are few and fleeting fixed battles, is a non-sequitur. The use of high speed, high-performance aircraft and heavy ordnance, like the indiscriminate use of long-range artillery, is counterproductive. Targets are difficult to identify, distinguishing friend from foe is largely a matter of chance, and time on station is too ephemeral. What are needed are slow planes that can be directed discriminately by ground observers who have an understanding of the situation. The air platform needs to be stable, tough, inexpensive, and easily maintained and operated in an austere environment.<sup>33</sup>

Surveillance and reconnaissance aircraft are used primarily to detect and monitor threat activity. These aircraft must have long endurance (approximately 5-7 hours) and be capable of night operations and electronic intelligence gathering. FID research regarding the air war in Oman revealed that aerial reconnaissance, along with airlift, formed the main contribution to the counterinsurgency effort. And in Malaya, the overall photographic reconnaissance effort was described in one research report as "vital" to the planning and success of ground force operations.<sup>34</sup> Once more, FID research established that such aircraft must be inexpensive, reliable, and rugged with a STOL capability.

Having outlined the basic requirements, AFSOC FID planners meticulously researched commercially available platforms in terms of their ability to meet two tests: First, the aircraft must be useful in perfecting the necessary skills of aviation-FID crews and maintenance personnel to advise and train foreign air forces in the application of airpower in LIC; and second, the aircraft selected must be multi-dimensional, i.e., able to demonstrate the flexibility of airpower in LIC. Sophisticated, high-tech aircraft were rejected early as simply too expensive and inappropriate for the 6 SOS mission. Other, stop-gap aircraft such as the UH-1 helicopters currently operated by the 6 SOS, were viewed as a sop—a conciliatory or propitiatory bribe useful only to keep AFSOC FID planners in their place.<sup>35</sup> But as the 1995 AFSOC Mission Area Plan for FID asserted:

Of all the deficiencies described...the ones that deal with the requirement for aircraft have the potential to be the hardest to overcome. This is due in part to institutional biases against bringing low-tech, slower, and older aircraft into the USAF inventory....[But] without the ability to conduct tactical flying training, any unit would be largely unqualified and of limited value for performing tasks of combat advising in the joint and multi-national arena (emphasis added).

And that is the whole point. How we train must be grounded in a firm notion of what we are training for. Without proper aircraft, suitable for self-training and demonstration of airpower concepts appropriate to Third World conditions, the 6 SOS can not effectively perform its mission.

### **The Right Means for the Desired End**

As mentioned previously, three aircraft were deemed best suited to meet the stated requirements of low cost, simplicity, ruggedness, STOL-capability, and multi-dimensional utility: The Basler T-67, the Pilatus Porter, and the Ayres Vigilante.

The Basler Turbo-67 is a conversion of the venerable Douglas C-47 (DC-3). The airplane is disassembled and reassembled in "like-new" condition, resulting in an FAA Part 25 certified twin engine turbo-prop, STOL-capable aircraft. Basler zero-times the airframe, "remanufactures" the wing according to a new design (giving the airplane a true STOL capability), adds a three-foot plug in the fuselage (increasing the payload), replaces all fabric control surfaces with metal, adds new on-board systems, and re-engines the airplane with twin Pratt and Whitney PT6A-67R engines with Hartzell five-bladed propellers. Basler claims the T-67 exhibits a 76% improvement in performance at 50% of the original C-47 operating cost. In effect, the T-67 retains the reliable capability of the original airplane, but adds new technology to improve performance, boost payload, and provide for ease of maintenance. Imminently capable of operating in austere environments, the T-67 is at home on unimproved airstrips as much as asphalt runways. Multi-dimensional in every sense of the word, the T-67 can be configured as a side-firing gunship, side-looking FLIR platform (forward-looking, infrared radar), troop transport, command and control platform, PSYOP platform, air ambulance, as well as perform an array of developmental functions ranging from medical and agricultural support, to aerial photography, rodent and pest control, firefighting, and maritime operations. The T-67 can also be used to support democratization programs by delivering voting materials to remote rural populations inaccessible by overland transportation. The airplane can be purchased for under \$4 million and costs \$92 per hour to operate with a 98% operational ready (OR) rate. An additional cost of \$100,000 is incurred to improve survivability in non-permissive environments (e.g., radar warning, chaff and flare dispensers, ALQ 144 AV1, etc.).<sup>36</sup>

The Pilatus PC-6 Turbo Porter is another venerable design that was used extensively during the Vietnam War, including by such covert units as Continental Air Services and Air America. A high-wing, "super-STOL-capable" airplane powered by a single Pratt and Whitney PT6A-27 free turbine turboprop engine, the PC-6 has been the premier light utility aircraft in the world for over 30 years. It can be equipped for almost any mission from sidefiring gunship to air ambulance. During the Vietnam War, the

AU-23A "Peacemaker," the military version of the PC-6, was used by US and other countries as a gunship, and "slick" versions of the Porter were used in covert operations in Laos, mostly for forward air control and infiltration missions. Just under 1000 of the airplanes have been produced, currently serving in over 50 countries, with another 120 countries operating the Pilatus Britten-Norman line of the PC-6. Inexpensive at \$600,000, the Porter costs \$145 per hour to operate with a 98% OR rate. Like the T-67, survivability equipment improvements increase the cost per airplane by an additional \$100,000.<sup>37</sup>

The Ayres V-1-A Vigilante is a two-seat conversion of the proven Ayres "Turbo-Thrush" cropduster, a rugged, reliable, easy to maintain, and STOL-capable aircraft. Billed as a low-wing attack platform with fixed gear and no hydraulics, the Vigilante is powered by

a single Pratt and Whitney PT6A-65AG turboprop engine with a low-noise five-bladed propeller. The Vigilante can achieve a top speed of over 200 knots, or loiter as slow as 50 knots. It is capable of carrying bombs, rockets, and cannon or machine guns and comes with a gyro-stabilized FLIR, which can down-link video information to a receiving ground station over 100 nautical miles away. The aircraft can also incorporate multispectral low-light television and laser-gate low-light television cameras for reconnaissance and surveillance missions. The purchase price is relatively inexpensive at \$1.5 million, with an operating cost of \$75 per hour and a 99% OR rate. Again, an additional \$100,000 would be necessary to upgrade survivability, but the airplane already has Class A provisions for the necessary equipment.<sup>38</sup>

These aircraft are an innovative and affordable solution to the unique aircraft requirements of the 6 SOS and represent the very type of low cost, off-the-shelf, multi-dimensional platforms most appropriate for air forces in the developing world. Moreover, they exhibit flight and maintenance characteristics representative of existing aircraft in Third World air forces. From a maintenance standpoint alone, such a mix of aircraft is a mechanic's dream: all of the airplanes use a common engine, are very reliable, and use commercially available parts. Although purchasing these aircraft requires adequate funding, a notional squadron of an appropriate mix of these systems is genuinely inexpensive in relative terms (according to one wag, the Porter can be purchased for roughly the price of a FLIR-ball on an MH-53J "Pave Low" helicopter).<sup>39</sup> Moreover, there are no sunk costs associated with research and development. Basler can service its aircraft sales wherever they operate with engine overhaul and heavy maintenance shops worldwide, and Pilatus and Ayres similarly claim repair facilities and dealers throughout the developing world. Were these aircraft made available through foreign military sales or foreign military financing programs, US security assistance organizations worldwide could easily and cheaply establish the logistical and support infrastructure necessary to sustain these assets. Once in place, the 6 SOS would become the prime instrument to teach foreign air forces how to exploit these platforms in support of US objectives throughout the range of military operations, from operations other than war to major regional conflict.

### **Airpower, Not Airplanes**

In his seminal work, *Winged Defense*, Brigadier General William "Billy" Mitchell wrote that a principal requirement "in the organizing of air power is the [procurement] of suitable aircraft and equipment for the men that have to fly them."<sup>40</sup> With respect to the aviation-FID mission and the 6 SOS, this proposition rings true on two levels. First is the need for aircraft representative of those found already in the Third World, in order that 6 SOS crews and maintenance personnel will have access to training platforms relevant to the squadron's mission. But on another, broader, and more important level is the need for aircraft that exemplify the multi-dimensional characteristics most useful to Third World air forces in the exploitation of airpower. Success on one level is inextricably tied to the other.

The most significant problem associated with realizing the original vision of aviation-FID is currency and proficiency training for 6 SOS crews. Although the 6 SOS is

successfully fielding training and advisory teams worldwide, it continues to employ "work-around" solutions to keep its crews current and proficient. For example, 6 SOS fighter pilots "purchased" (for the price of fuel) A-37 flying time in El Salvador to maintain their currency.<sup>41</sup> Before the UH-1 helicopters arrived in the squadron, 6 SOS rotary-wing pilots similarly obtained flying time in Venezuela, Ecuador, El Salvador, from other US Air Force organizations flying the UH-1, and from the US Army. 6 SOS airlift pilots have maintained their currency by flying the Basler T-67 and other aircraft with the North Carolina Forest Service and by "begging" time from other AFSOC squadrons flying variants of the C-130.

Clearly this is an untenable situation. Having no aircraft of his own, the 6 SOS Commander has no means of controlling or evaluating the safety and proficiency of his flight crews. This is especially true with respect to instruction and check rides provided by foreign air forces. The quality of instruction is questionable, and having no access to schedules, operational standards, maintenance records, or risk management procedures, the 6 SOS Commander is in a precarious position with respect to safety. In fact, following a tragic mishap in Ecuador in which a US Navy helicopter pilot on loan to the 6 SOS lost his leg and an Ecuadoran pilot lost his life, the Safety Investigation Board report concluded that "the [6 SOS] training and qualification process is contestable and has produced crewmembers with questionable flying and tactical skills."<sup>42</sup> The accident investigators did not question the mission of the 6 SOS but did seriously question the Command's commitment to the aviation-FID mission owing to the lack of appropriate training platforms necessary to keep 6 SOS crews current and proficient.<sup>43</sup>

6 SOS crews must be "qualified and current to fly legally and safely and they need be proficient to fly skillfully and credibly."<sup>44</sup> Availability of suitable training aircraft is therefore the key issue in fulfilling the aviation-FID vision. As the 1995 Mission Area Plan similarly asserted, "the lack of training platforms directly affects readiness by making it extremely hard to keep aviation-FID crews current, credible, and safe, and also to keep maintainers proficient in their areas of expertise. If currency and proficiency were not problems, there is still a problem in that lack of aircraft does not allow for developing tactical solutions to specific situations where the host nation's aircraft do not have the operational capabilities of USAF aircraft."<sup>45</sup> In short, without suitable aircraft, the 6 SOS can not perform its mission effectively.

However, in that the mission of the 6 SOS has evolved beyond aviation-FID exclusively, the aircraft described earlier in this essay (Basler, Pilatus, Ayres) may no longer be the best choices. After all, the original research was conducted in 1991. Other aircraft may better suit the expanded mission of the squadron, to include jet aircraft.<sup>46</sup> Nevertheless, the need for suitable aircraft remains paramount. But selection must not be driven by US Air Force orthodoxy regarding high performance characteristics, or even AFSOC orthodoxy regarding special operations sophistication. Where instructor skills are required for a specific aircraft not in the 6 SOS inventory, aircrews can "spin-up" in that aircraft, but only if they are already current and proficient in a "like" aircraft. For example, in preparing for a mission to Tunisia, 6 SOS helicopter pilots secured H-3 flight evaluator requalification and recurrency from the US Army Aviation Center at Fort Rucker, Alabama. In the end, reliable access to "representative" training aircraft

establishes the foundation for developing and perfecting the skills crucial to the 6 SOS mission. And in that sense airplanes remain crucial to the airpower advisory role which is at the heart of the aviation-FID concept.

The ability of the 6 SOS to perform flying and maintenance training at the tactical level is often the entrée to providing advisory assistance at the operational level. In other words, providing technical assistance and tactical training is often the necessary first step to gaining influence in a fashion enabling 6 SOS advisors to effect systemic change in foreign air forces with respect to airpower employment at the operational level—and perhaps at the strategic level as well. Billy Mitchell argued that, "to follow blindly what another nation does is merely to invite disaster, because every nation has its own particular problems to handle."<sup>47</sup> In this sense, the innate tendency of Third World air forces to blindly purchase front-line or even obsolete but nevertheless complex weapon systems (either for prestige purposes or simply because suitable alternatives were never offered) is at the root of airpower employment problems in the LIC environment. Admittedly, the Royal Thai Air Force in the 1960s overcame this tendency, but it was an exceptional case of good judgment—especially in the face of strong US pressure to acquire the US-recommended systems. The 6 SOS was created to encourage such good judgment and to assist foreign air forces in the selection and employment of appropriate technology.

Strengthening host-nation self-sufficiency in airpower employment reduces the likelihood of direct US involvement and increases the options available to theater combatant commanders in terms of campaign planning and joint and combined operations. Unfortunately, many countries remain dependent upon US airpower for certain forms of air support in crisis, contingency, and war. Such dependency is contrary to the stated US policy of encouraging foreign governments to handle their own affairs and may increase the likelihood of direct US intervention. Lacking a credible capacity to advise and train foreign air forces in the employment and sustainment of their organic airpower assets reduces the options available to national command authorities and responsible theater combatant commanders. The 6 SOS was designed to fill this gap by deploying politically aware, culturally astute, and foreign language-trained aviation experts able who can recommend appropriate airpower solutions and provide necessary training assistance. But this capability is wholly predicated on fully qualified 6 SOS personnel, current and proficient in aircraft representative of those appropriate to the LIC environment. This is not a new idea, but as Hegel reminds us, "we learn from history what we do not learn from history."

## Notes

1. Wray R. Johnson, "Whither Aviation Foreign Internal Defense?", *Airpower Journal* 11, no. 1 (Spring 1997): 66-85.
2. The 6 SOS has in fact received two CASA 212 light airlift aircraft in addition to the UH-1s. However, these aircraft were specifically rejected by FID researchers as inappropriate to the aviation-FID mission. Moreover, they were made available to the 6 SOS only because another unit flying the CASA 212 had been disbanded. In effect, the 6 SOS was given "hand-me-down" aircraft no longer in

the US Air Force inventory (with the attendant problems associated with maintenance and sustainment of these platforms) and amount to no less than sops to the aviation-FID mission.

3. Carl Builder, *The Icarus Syndrome* (London: Transaction Publishers, 1994), pp. 32, 29, 6, 7.
4. HQ AFSOC/XP, Mission Need Statement (MNS) for a Family of Air Force FID-Specific Aircraft, 4 August 1992. A second MNS was similarly rejected in 1996. (HQ AFSOC/DOOD, Mission Need Statement for a Capability to Sustain Aviation-Foreign Internal Defense (Aviation-FID)/Coalition Aircrew and Maintenance Personnel Aircraft Proficiency, 5 February 1996).
5. The 6 SOS was originally constituted as the 6th Fighter Squadron (Commando) in September 1944 as part of the 1st Air Commando Wing flying the P-47D "Thunderbolt" and later the P-51 "Mustang." It was deactivated in November 1945 but reconstituted in April 1962 at Hurlburt Field, Florida, flying the B/RB-26, U-10, T-28, and in 1963, the A-1E, training Vietnamese Air Force and other Third World pilots. All of the aircraft, with the exception of the T-28, were reassigned elsewhere in July 1963 and many of its personnel were similarly reassigned to form new special operations units. In 1964, the squadron deployed to Udorn Air Base in Thailand to train Thai Air Force personnel in counterinsurgency operations. In 1966, the unit returned to England Air Force Base in Louisiana but redeployed to Pleiku Air Base in South Vietnam as the 6th Special Operations Squadron, conducting combat missions until deactivation in November 1969. The unit reactivated in 1970 to train replacement pilots in A-37B aircraft and was redesignated the 6th Special Operations Training Squadron until September 1974 when the squadron was deactivated once again. In the Spring of 1991 HQ AFSOC created a FID office to explore the creation of a dedicated aviation-FID unit within USSOCOM. In 1993, an active unit was created for FID, Detachment 7. In April 1994, Det 7 was renamed the 6th Special Operations Flight and on 1 October 1994 became, once more, the 6 SOS. In October 1996, the 6 SOS received two UH-1N helicopters and on 20 December of that same year marked its first flight in 27 years. (Telephone interview, Mr Jerome Klingaman, 6 SOS, 30 October 1998).
6. Charles Westenhoff, *Military Airpower: The CADRE Digest of Air Power Opinions and Thoughts* (Maxwell Air Force Base: Air University Press, October 1990), p. 21
7. Robert Strassler, *The Landmark Thucydides: A Comprehensive Guide to the Peloponnesian War* (New York: The Free Press, 1996), p. 16.
8. George Santayana, *Life of Reason* (New York: Charles Scribner's Sons, 1953), p. 82.
9. Arthur Schlesinger, *The Bitter Heritage: Vietnam and American Democracy, 1914-1946* (Greenwich: Fawcett Crest, 1967), p. 102.
10. AFSOC Foreign Internal Defense (Hurlburt Field: HQ AFSOC, July 1991), pp. 10-11. In a classic example of this tendency, the Commander of the Colombian Air Force visited Hurlburt Field to examine AC-130H gunship operations. The Colombian General made it clear from the outset that his purpose was to acquire AC-130s for the Colombian Air Force (Fuerza Aerea Colombiana, FAC), despite the fact that the FAC is barely able to maintain its small fleet of AC-47 gunships.

Fortunately, members of the 6 SOS were able to dissuade the FAC Commander from pursuing this purchase through security assistance channels.

11. Robert L. Solomon, United States Security Assistance to Thailand: Case Studies in Military Interaction, WN-7257-1-ARPA, sponsored by the Advanced Research Projects Agency (November 1971), pp. 78-80. (Secret) Declassified December 31, 1980.
12. In December 1962, seventeen F-86L aircraft were provided to the RTAF. By November of the following year, only two remained in-commission and three had never even been assembled. Another squadron of F-86F aircraft were not rated operationally ready in nine of eleven quarterly assessments from the time the aircraft had been delivered. In 1967, a US Army Audit Agency report declared that "as of 30 June 1966, the [F-86L] squadron had never been rated operationally ready for combat since the receipt of the aircraft in December 1962." Solomon, US Security Assistance to Thailand (note 10), pp. 80-81.
13. Solomon, US Security Assistance to Thailand (note 10), p. 92.
14. The Pentagon pressed forward with the sale despite the fact that both the US Military Assistance Command Thailand (MACTHAI) and the Joint US Military Assistance Group (JUSMAG) had declared that "F-5 jet fighters...[have] no application in Thailand." Moreover, "according to MACTHAI/JUSMAG, the insurgents were equipped only with small arms and, until such time as they acquired anti-aircraft weapons, the most effective air support would be slower propeller-driven aircraft, such as the T-28, which has the ability to stay over targets for longer periods." Solomon, US Security Assistance to Thailand (note 10), p. 81, citing GAO Report B-133258, pp. 32-33.
15. Solomon, US Security Assistance to Thailand (note 10), pp. 93-97.
16. The suitability of the T-28 in this regard is best illustrated by the fact that Air Commando instructors graduated nineteen illiterate Hmong tribesmen as combat pilots. "The best of them, Ly Lue, went on to become one of the most famous strike pilots in all of Indochina." Hmong pilot trainees were ignorant of basic mechanical concepts, did not read or write English, and were so short in stature that thick pillows were required to elevate the trainees in the cockpit and blocks of wood were wired to the rudder pedals. Nevertheless, the Hmong pilots were brave and became highly skilled combat aviators, due in large part to the simplicity of the T-28. Michael Haas, Air Commando! 1950-1975: Twenty-five years at the Tip of the Spear (Hurlburt Field: HQ AFSOC, undated), p. 50.
17. Haas, Air Commando! (note 15), p. 59-61.
18. Solomon, US Security Assistance to Thailand (note 10), p. 100, and Charles Hildreth, USAF Special Air Warfare Doctrines and Capabilities, 1963 (Washington, DC: USAF Historical Division Liaison Office, August 1964), p. 51. (Secret) Declassified 7 November 1983. The cost to convert a T-28 to the attack version amounted to \$200,000, one-half to one-third of the cost of a new A-37 or turboprop OV-10. Moreover, the T-28D cost, at the time, approximately \$38 per hour to operate as opposed to \$77 for the A-37 and \$57 for the OV-10. Only the Pilatus Porter was comparable at \$220,000 to purchase and \$22 per flight hour. (Solomon, Thailand, p. 100).
19. Solomon, US Security Assistance to Thailand (note 10), pp. 39-40

20. Ironically, pending the decision to select either the "growth model" of the T-28, the YAT-28E, YAT-37, or the DDRE aircraft, the Air Force settled on the US Navy's multipurpose A-1E "Skyraider" as the best possible "interim" aircraft. Only 30 miles per hour faster than the T-28, the A-1E (and its single-seat A-1H variant) was easily maintained, moderately easy to fly, and an excellent gun platform. The airplane could be converted to twelve combat versions, including day and night attack, photo-reconnaissance, troop carrier, and air ambulance. With minor modifications, the A-1E was capable of carrying all conventional ordnance in the 2,000 pound class or smaller, and was capable of carrying up to 8,000 pounds of bombs, rockets, torpedoes, mines, and other stores on external racks in addition to four organic M-3 20mm cannon in the wings. On 25 April 1963, General LeMay approved replacement of two T-28 squadrons with the A-1E. The fact that the piston-engined T-28 was replaced by the piston-engined A-1E should not be lost on the reader, particularly in light of the outstanding performance of the Skyraider during the Vietnam War. (Hildreth, USAF Special Air Warfare (note 17), pp. 53-4.
21. The officer later recanted his remark, but the damage was done. When a newly arrived AFSOC Commander was briefed on the aviation-FID initiative for the first time, he made a similar quip at the outset of the briefing, alerting the AFSOC staff and the FID planners present that he was no more enamored with the idea of non-standard aircraft than the previous commander.
22. AFSOC Foreign Internal Defense (note 9), p. 8.
23. Cited in HQ AFSOC/XPF, "AFSOC FID Capability," position paper, 25 November 1991.
24. Even if the host-nation air force is amenable to less sophisticated alternatives, the typical US Air Force officer assigned to security assistance organizations overseas is either ill-prepared to recommend suitable aircraft or is predisposed himself to suggest "front-line" weapon systems or sophisticated, albeit obsolete systems leaving the US Air Force inventory. This sentiment was reflected in a 1986 study which recommended, in addition to a squadron of A-10s, that the proposed "low-intensity conflict center" include a squadron of F-20 "Tigersharks" because the F-20 was being "pushed as the future fighter for many Third World countries." The author subsequently asserted that "it is very hard to convince commanders of a Third World air force that they should buy an F-5 or F-20 when they see that the US Air Force has neither aircraft in its inventory. An F-20 unit as part of the US Air Force Low-Intensity Conflict Center would perhaps make selling the F-20 abroad a good deal easier." (David Dean, *The Air Force Role in Low-Intensity Conflict* (Maxwell Air Force Base: Air University Press, October 1986), pp. 117-18). Although the author's underlying logic was sound, his proposal to equip the center with jet fighters reflected General LeMay's earlier view that only jets will suffice and that Third World air forces prefer jets to begin with. Consequently, even though the author was advocating a dedicated LIC capability in airpower employment, the commitment to the turbojet remained intact.
25. Foreign-language trained, experienced in Third World operations, having flown regularly in unfamiliar airspace, and being politically and culturally attuned to specific areas of the globe, 6 SOS pilots and crews would be an invaluable resource in this regard. 6 SOS support of unconventional warfare operations

would include airlift and logistical support to surface forces engaged in guerrilla or partisan warfare, supporting escape and evasion nets in denied territory, and discrete direct-action operations. Moreover, 6 SOS personnel could advise and train foreign nationals conducting clandestine or covert air operations supporting US national security objectives in the region, or participate directly in such operations if authorized by national command authorities. (6th Special Operations Squadron: Concepts and Capabilities, 1 August 1995), p. 3.

26. William Olsen, "Air Power in Low-Intensity Conflict in the Middle East," *Air University Review* (March-April, 1986), as cited in *Low-Intensity Warfare, Associate Studies, Vol. II (Military Strategy and Aerospace Power)*, Ch. 10 (Maxwell Air Force Base: Air War College, December 1986), p. 52. The one aircraft cited by Dr Olsen as useful in LIC was the AC-130 gunship; however, "because it is so expensive and difficult to maintain or operate from remote or poor facilities, it is a bad choice for most low-intensity conflicts." (Olsen, "Air Power", 52).
27. This incident was related to the author by a crewmember of a 9 SOS MC-130. While flying with the crew, the 16 SOW Commander observed the Basler T-67 in the pattern performing a series of demonstrations for AFSOC staff officers. The Wing Commander had resisted inclusion of the 6 SOS in the Wing and only relented after the AFSOC Commander stated he would direct the squadron to report to him if that's what it took to get the initiative off the ground. (Author's notes, aviation-FID briefing to AFSOC/CC, 18 January 1995).
28. Corroboration regarding the utility of these basic air missions can be found as far back as the Marine Corps Small Wars Manual, written in the 1930s as a result of the Marines' experience fighting guerrillas in Central America and the Caribbean. According to the manual, a "composite group of aircraft" representing reconnaissance, combat (pursuit, attack, and bombardment), and transport is best suited for small wars. *Small Wars Manual* (1940; reprint, Washington, DC: Department of the Navy, 1987), pp. 9-1-1 to 9-36-24.
29. According to Robert Komer, who at one time directed US pacification efforts in South Vietnam, airlift in Malaya "was indispensable. It gave the security forces an enormous advantage over the guerrillas in jungle operations." (Robert Komer, *The Malayan Emergency in Retrospect: Organization of A Successful Counterinsurgency Effort*, R-957-ARPA (Santa Monica: RAND Corporation, February 1972), p. 52. And according to Major General John Akehurst, commander of British forces during the Dhofari insurgency, airlift was the key to victory over the Marxist insurgents in Oman as well. Not surprisingly, the nature of the terrain dictated rugged, reliable, and STOL-capable aircraft. "Throughout Dhofar there were rough short airstrips used for delivering supplies or picking up passengers. The very nature of the strips demanded really rugged aircraft with a genuine short take-off and landing capability. The supply aircraft in Oman with these characteristics was the Short Skyvan, an ungainly-looking great box with stubby wings that seemed to defy most of the rules of flight but was nevertheless tough, reliable and versatile." (John Akehurst, *We Won a War: The Campaign in Oman, 1965-1975* (The Chantry: Michael Russell (Publishing) Ltd, 1982), pp. 39-40).

30. In Ecuador alone, only one out of seven airfields (19 out of 136) are capable of C-130 operations.
31. AFSOC Foreign Internal Defense (note 9), p. 37. According to the Defense Mapping Agency, roughly 443 out of 8,224 runways in South America are capable of supporting C-130 operations. In Africa, only 642 out of 4,274 are capable of the same. However, some 2,038 runways in South America and 243 in Africa are of "an unknown weight-bearing capacity" and are therefore excluded from these figures. Nevertheless, "a fully-loaded light STOL aircraft such as the Pilatus PC-6 Turbo-Porter" can operate from over 90% of the runways in South America and the Basler T-67 can operate from over 44% of the runways. (Michael Koster, Foreign Internal Defense: Does Air Force Special Operations Have What It Takes? Research Report No. AU-ARI-93-2 (Maxwell Air Force Base: Air University Press, December 1993), pp. 19, 24).
32. Solomon, US Security Assistance to Thailand (note 10), pp. 106-7
33. Olsen, "Air Power" (note 25), p. 51.
34. Thomas Cartwright, "The Roles of Airpower," excerpted from a 1972 Air Command and Staff College special project entitled "USAF Response to Insurgency in Developing Countries During the 1973-1983 Time Period," in *Low-Intensity Conflict: The Hidden Challenge [Warfare Studies]* (Maxwell Air Force Base: Air Command and Staff College, February 1986), p. 243.
35. One must admit, however, that the UH-1s have fulfilled two important roles for the 6 SOS. First, they have, for the most part, kept 6 SOS helicopter crews current and proficient. And since the 6 SOS has been called upon repeatedly to provide aviation-FID assistance in rotary wing operations in such countries as Sri Lanka, El Salvador, Ecuador, and others, the UH-1s have proven indispensable.
36. AFSOC Foreign Internal Defense (note 9), p. 45, and Koster, Foreign Internal Defense (note 28), pp. 62-63.
37. AFSOC Foreign Internal Defense (note 9), p. 40, and Koster, Foreign Internal Defense (note 28), p. 58.
38. AFSOC Foreign Internal Defense (note 9), p. 43, and Koster, Foreign Internal Defense (note 28), pp. 56-58
39. The 6 SOS could field a fully operational squadron of three Baslers, three Vigilantes, three Porters, and two UH-1 helicopters with change to spare for two or more A-37s for less than one-half the cost of a single AC-130U (approximately \$80 million).
40. William Mitchell, *Winged Defense: The Development and Possibilities of Modern Air Power—Economic and Military* (1925; reprint, New York: Dover Publications, Inc., 1988), p. 181.
41. Currency and proficiency for fighter pilots assigned to the squadron has proven the most daunting challenge (missed "gates", etc.). One F-16 pilot assigned to the 6 SOS was killed in a training accident in El Salvador, another pilot qualified in the F-86 (exchange tour in Honduras), A-37, and F-4G retired, and a second F-16 pilot also qualified in the A-37 (exchange tour in Colombia) has separated from the Air Force. But owing to the lack of appropriate training aircraft and problems associated with currency obtained from foreign sources, the 6 SOS has declined to fill its fighter pilot authorizations.

42. Department of Defense, Report on Investigation, Analysis, Findings, and Recommendations, SA-342 Gazelle Helicopter Class B Miscellaneous Air Operations Mishap (Hurlburt Field: HQ AFSOC, 1996), Tab T, p. T-43.
43. As one investigator wrote in an unpublished study for the Naval War College, the "problem is that the current Joint [aviation-FID] philosophy requires advisors to be experts in aviation; however, the unit lacks aircraft to properly train advisors. The unit owns two UH-1N Huey helicopters, but has no cargo, fighter, or light aircraft. This has led to US pilots teaching and advising host nation aviators in aircraft they are unqualified in. In addition to credibility issues, this practice is unsafe." Moreover, "there can be strategic ramifications associated with providing inadequate products to host nation leaders. Aircraft and pilots are normally considered national assets to host nation governments. If host nation aviator leaders were aware the US was sending them unqualified aviators, they would probably not allow the US to influence their air forces. Since host nation aviation leaders may also be senior government officials, this credibility issue could have major strategic ramifications." (John W. Blumentritt, "Joint Aviation Foreign Internal Defense: Time to Get Serious," (Thesis paper, Naval War College, 17 May 1998), pp. 4, 12.
44. "6th Special Operations Squadron Required Strength and Capabilities: A White Paper" (6 SOS, Hurlburt Field, undated, Typescript), p.5.
45. Air Force Modernization Plan: Mission Area Plan: Foreign Internal Defense (FID) (Hurlburt Field: HQ AFSOC/XPP, 3 October 1995), pp. 20-21.
46. For example, 14 of 16 air forces in Latin America fly the A-37. Many fly older US aircraft (AT-33) and comparable foreign aircraft (MK-89 "Strikemaster," etc.). Virtually every air force in the Third World flies helicopters. Thus, the appropriate mix for the 6 SOS might include light lift helicopters (Bell 212), light airlift (Pilatus Porter), medium airlift (Basler T-67), and light turbojet trainers or attack platforms (A-37), a truly composite structure anticipated by the first composite special operations squadron assigned to Panama as part of the Special Air Warfare Center in the 1960s. Detachment "Bold Venture," comprising 75 personnel and 13 aircraft of different types, deployed to Panama in 1961 to "train indigenous air force personnel, supported by Army Special Forces." This detachment served as the cadre for a permanently assigned squadron (T-28, B-26, C-47, and U-10) which was stood up in 1962 (Charles Hildreth, USAF Counterinsurgency Doctrines and Capabilities 1961-1962 (Washington, DC: USAF Historical Division Liaison Office, February 1964), pp. 44, 46. (Secret) Declassified 7 November 1983.
47. Mitchell, Winged Defense (note 36), p. 181.