War Eagles Air Museum
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Plane Talk

Volume 21, Number 3

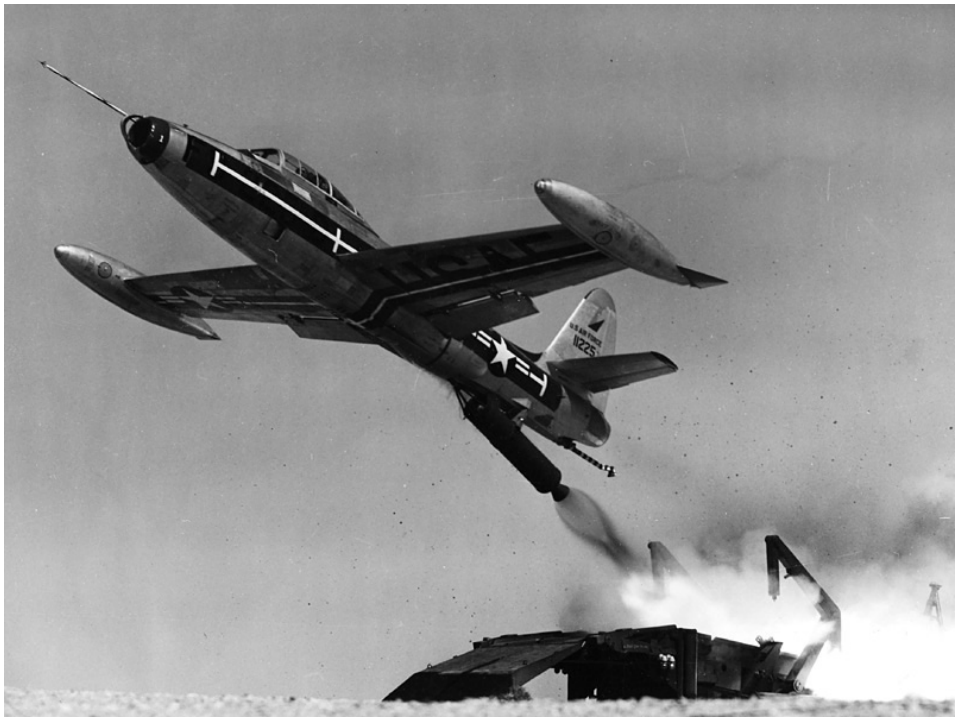
The Newsletter of the War Eagles Air Museum

Editorial

There are several different ways that fans of warbirds, historic aircraft and big, round, noisy engines can satisfy their interest. One way, of course, is to visit War Eagles Air Museum or some of the many other fine aviation museums in the country, where you can see these impressive machines "up close and personal." Another way is to watch contemporaneous movies that feature lots of flying action. Some examples are the classic films *Command Decision*, released in 1948, and *Twelve O'Clock High*, released the following year, which both portray the experiences of American airmen in England and their daring daylight bombing missions over occupied Europe. When these films were made just after World War II ended, plenty of surplus Boeing B-17 *Flying Fortresses* and other wartime aircraft were readily available for the filmmakers to use, so the flying scenes are "the real thing." But what about the small screen? Are any old television shows available for those interested in real historic aircraft action? Yes—there's great news for aviation enthusiasts of all ages with the release on DVD this summer of the outstanding 1958-59 television show *Steve Canyon*.

Steve Canyon was a character created by Milton Caniff (1907-1988), widely regarded as America's finest cartoonist, whose dramatic artistic style and unparalleled storytelling brilliance influenced virtually every cartoonist who followed

Steve Canyon (Continued on Page 5)



▲ ***Project ZELMAL, one of aviation's more unusual projects, involved rocket-launching Republic F-84G* Thunderjets *from a mobile trailer and landing them wheels-up on an inflated rubber mat. This attempt to improve the survivability of NATO aircraft under Soviet attack was not conspicuously successful.***

Featured Aircraft

The Republic Aviation Corporation, of Farmingdale, Long Island, New York, was known for building strong aircraft. Its World War II P-47 *Thunderbolt* could absorb incredible battle damage and still get home. In Viet Nam, its F-105 *Thunderchief* could carry such a huge under-wing bomb load that it seemed unable to fly. In between was the rugged F-84 *Thunderjet*, an airplane with enough structural strength to survive the punishment of a desperate, bizarre, Cold War test program called ZELMAL.

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From the Director

There's much more to War Eagles Air Museum than just airplanes. Our collection of more than 30 historic World War II and Korean War military and civilian aircraft is, of course, the biggest draw for visitors. But many people are surprised to learn that we also display a large collection of classic automobiles. We have more of them, in fact, than aircraft. You could spend hours in the Museum looking at these major exhibits. But there's more to see. If you have the time, be sure to check out all the artifacts, posters, newspaper clippings, documents, aircraft engines, uniforms, scale models, paintings and other memorabilia. Also, as the home of the El Paso Aviation Hall of Fame, we display more than 50 plaques commemorating distinguished inductees. I'm sure you'll be fascinated to read the citations describing the contributions of these aviation pioneers.

Let's not forget our Gift Shop, which carries a good selection of books, videos, DVDs, music CDs, toys and models. You are sure to find a good souvenir of your visit there, and you can also peruse the many laminated newspaper articles about past Museum events and activities. The knowledgeable Gift Shop staff will gladly answer questions, or they'll put you in touch with someone who can help you. Be sure to mention if you would like to become a Museum member, or if you are interested in volunteering, or if you have a donation to offer. Thanks a lot, and I hope you enjoy your visit.

Skip Trammell ✪

Plane Talk

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BACKGROUND

It was early 1953. Europe was divided by what Britain's Prime Minister Winston Churchill famously called the "Iron Curtain." The Cold War was in full swing, and the real shooting war in Korea was in its third year. While armistice talks ground on at a glacial pace, United Nations and Chinese-backed North Korean troops battled in the mud. In the frigid sky high over the Yalu River, American and communist jet pilots sparred.

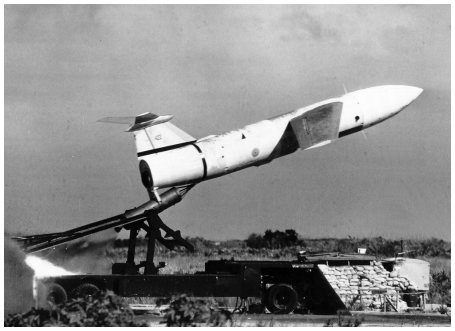
The Communist Party of the Soviet Union seemed set on its putative goal of world domination. The memory of Soviet intransigence during the Berlin Blockade was still fresh. East and West each distrusted the other, and the odds of a military confrontation between the world's only two superpowers seemed very high.

The U.S. Air Force maintained a precarious presence in western Europe. Airfields dotted the Federal Republic of Germany (West Germany). U.S. and NATO (North Atlantic Treaty Organization) aircraft patrolled the skies, or waited on the ground—fueled, fully armed and on hair-trigger alert. Powerful radars ceaselessly scanned eastwards for the first telltale electronic "blips" of a massive aerial attack. At jet aircraft speeds, NATO's airfields were just minutes away from Warsaw Pact bases in Czechoslovakia, the German Democratic Republic (East Germany) and Poland.

Air Force leaders feared that a surprise Soviet attack would catch their aircraft on the ground and destroy them before they could take off. Even if some revetted or camouflaged aircraft survived, their airfields probably would not. One thing they could do was disperse the aircraft off of their permanent bases. In that bygone era before spy satellites and precision-guided weapons, the thick forests just outside the fences of many airfields could conceal and protect entire squadrons of aircraft. But the problem of how to get them airborne remained. NATO's defensive aircraft needed long runways to take off and land. What if the runways were destroyed?

SOLVING THE PROBLEM

Air Force planners didn't have to look far for a possible solution. Under a March 1946 contract, the Glenn L. Martin Company, of Baltimore, Maryland, was building a cruise missile called *Matador*. Resembling a conventional aircraft, *Matador* was fired from a towed trailer called a "zero-length" launcher. The term "zero-length" meant that all of the missile's mounting supports released at the same time when it was fired. The initial *Matador A* version entered Air Force service in late 1952.



▲ ***The Glenn L. Martin Company's TM-61* Matador *cruise missile was essentially an unmanned, remote controlled aircraft.***

Why not, the Air Force thought, use *Matador*-type launchers to get its aircraft into the air after an attack? Getting them back on the ground afterwards, of course, was another matter. One concept to do so had been around since the mid-1940s, when the British Royal Aircraft Establishment (RAE) had looked at eliminating the landing gear from jets to increase their fuel capacity. After considering several ideas, RAE engineers settled on the idea of landing wheel-less aircraft on a giant, inflated rubber mat. When its arresting hook snagged a cable, the plane would be snatched out of the sky and slammed down onto the mat, hopefully with no ill effects other than maybe some scraped paint.

The RAE modified two DeHavilland *Vampires* to prove the concept. It was a good thing they modified two, because one was totally destroyed in the first test (fortunately without injury to the pilot).

Featured Aircraft (Continued on page 3)

Featured Aircraft (Continued from page 2)

The next try, on December 29, 1947, was successful, and within the next ten years nine pilots made over 200 gear-up mat landings. Many of the tests took place at sea on a 142-foot-long, 27-inch-high mat on the flight deck of the Royal Navy carrier *HMS Warrior*. An American Navy pilot participated in the sea trials, gaining some firsthand experience in the pioneering British concept that was useful when the Air Force adopted the idea.

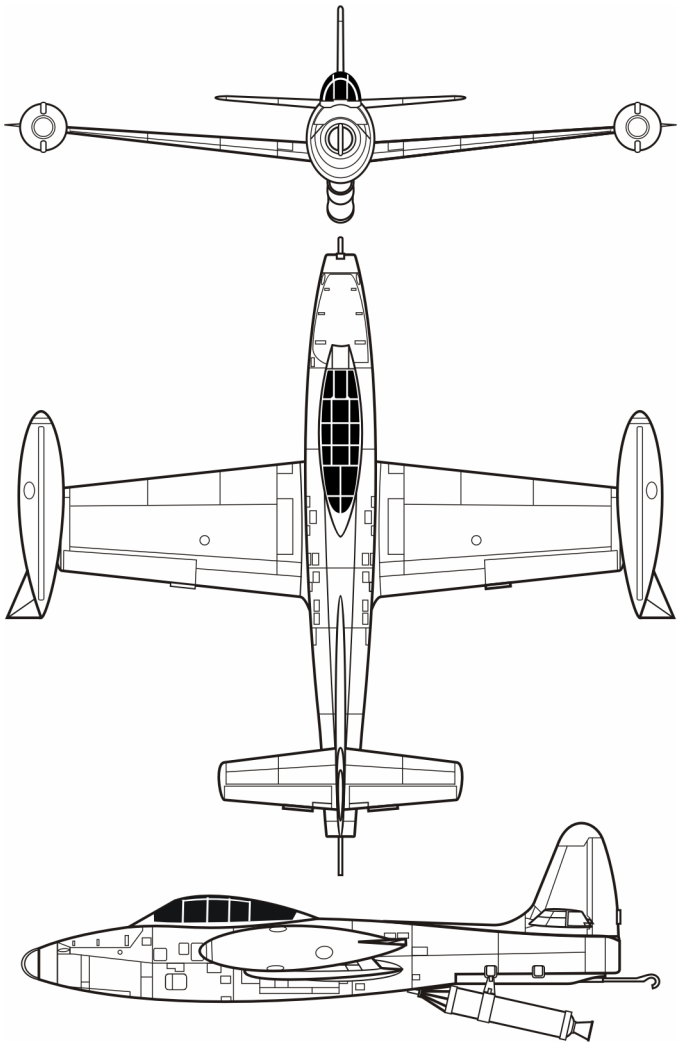
PROJECT ZELMAL

With its *Matador* experience, Martin was the logical contractor to tackle the Air Force program called ZELMAL. The acronym stood for "Zero-length Launch and Mat Landing." The purpose of the program, according to Air Research and Development Command (ARDC) Test Directive 5292-F1, dated September 14, 1953, was "…to determine the feasibility of zero length launching and landing mat recovery techniques and permit exploitation…[of] such techniques to…aircraft weapons designs and tactical operations."

A study of aircraft candidates for the program chose Republic's "plank-wing" F-84G *Thunderjet*, which had been in production since 1951 and was deployed in Asia and Europe as America's front-line tactical fighter-bomber (and the first U.S. fighter designed to carry nuclear weapons). Weighing 18,000 pounds with full fuel, the *Thunderjet* would not overload either the launcher or the landing mat.

***Republic F-84G* Thunderjet General Characteristics**	
Powerplant	One (1) 5,560-pound-thrust Allison J35-A-29 turbojet
Cruise Speed	475 miles per hour
Maximum Speed	622 miles per hour
Service Ceiling	40,500 feet
Length	38 feet 1 inch
Wingspan	36 feet 5 inches
Range	1,000 miles
Weight (empty)	11,470 pounds
Weight (maximum)	23,340 pounds

As defined in August 1953, ZELMAL had three phases, all to be accomplished at Edwards Air Force Base, California. Phase I was one unpiloted launch of a stripped F-84G from a slightly modified *Matador* trailer, with no recovery. Phase II involved 10 launches of piloted "lightweight" *Thunderjets*, each with a conventional landing. Phase III involved 30 piloted launches, at increasing gross weights, with, ideally, also 30 mat landings.



ZELMAL got underway with the arrival of two *Thunderjets* and a *Matador* launcher at Edwards. The EF-84G to be used for Phase I was stripped of extra weight and a 57,000-pound-thrust T-50 JATO (Jet-Assisted Takeoff) rocket motor was bolted under its rear fuselage. The worn-out *Thunderjet* was called the "Junker."

On December 15, 1953, Martin's test conductor intoned the final seconds of a brief countdown. At "zero," he flipped a switch to ignite the T-50 motor. A brilliant flame erupted from the nozzle, kicking sand and stones in all directions like a fusillade of small-arms fire. In a roiling cloud of dense smoke, the Junker roared off the launcher and arced through the desert sky. The rocket motor burned out and the unpowered, unguided "throwaway" *Thunderjet* plunged to earth a short distance downrange. The Junker launch, and with it Phase I of ZELMAL, was history. The stage was set for Phase II—the first piloted launch.

On January 5, 1954, Martin test pilot Robert Turner climbed up onto the *Matador* launcher and strapped into the ejection seat of the F-84G. The launcher elevated to 17 degrees as Turner ran through his checklist. He set the elevator trim to five degrees nose up, aileron trim to zero and flaps to ten degrees. He started the *Thunderjet's* 5,600-pound-thrust Allison J35-A-29 turbojet and stabilized it at idle power. When all was ready, he ran the howling engine up to 100 per cent rpm. The *Thunderjet* trembled like an eager race horse at the starting gate. Finally, the T-50 motor ignited. ZELMAL Phase II was underway.

Turner felt an acceleration of about four "Gs" (four times the force of gravity) at launch, which had an unexpected side effect. His left hand, which grasped

Featured Aircraft (Continued on page 4)

Featured Aircraft (Continued from page 3)

the throttle, was forced backwards, and he inadvertently retarded it to 93 per cent RPM. Quickly advancing the RPM back to 100 per cent, he evaluated the "feel" of the aircraft during the rocket burn. He felt no major trim changes when the motor burned out and dropped off, at which point the *Thunderjet* was 90 feet over the desert and at 175 miles per hour. Accelerating under jet power, Turner retracted the flaps at 190 miles per hour and 2,700 feet, about a minute and a half after launch. The aircraft flew normally, apparently none the worse for wear after its violent departure from the ground. After some test maneuvers, Turner landed on one of Edwards' long paved runways, successfully completing history's first zero-length launch piloted flight test.

The second piloted launch, on January 28, was also successful. Turner flew a different F-84G that had a locking bar to prevent inadvertent throttle reduction. The two launches proved the feasibility of the concept. But the mat landing technique could not yet be proven. Goodyear Tire and Rubber Company was building the 80-by-400-foot, 30-inch-thick mat, but it was behind schedule and would not be ready until April or May.

In the meantime, the launches continued. The Air Force worried that, in combat, ground crews would not be able to mount the rocket motors to the aircraft precisely enough to assure that the thrust went through the center of gravity. Offset motors could cause pilots to have control difficulties. To check "real-world" conditions, technicians mounted the motors to the test F-84G with deliberate misalignments for the rest of Phase II. By the end of February, Turner had flown eight more times, with misaligned motors, and had no controllability problems.

In May 1954, Goodyear finished the landing mat and installed modified Navy Mark V arresting gear at the test site. All seemed ready for the first mat landing.

THE LANDING TESTS

On June 2, 1954, Turner took off in an F-84G to attempt the first mat landing of the ZELMAL program. As he neared the landing area, he saw the black-and-silver inflated mat ahead on the desert in a thicket of cameras and phototheodolites. He approached straight and level, just as he had practiced, and lined up on the tiny landing zone. Everything seemed fine as he soared over the end of the mat a few feet above the ground at 150 miles per hour, engine at idle, landing gear up, flaps down and tailhook extended. The next instant, in less time than it takes to tell, the aircraft struck the mat, bounced, slid, careened off the far end of the mat, hit the desert and came to a grinding stop in a billowing cloud of dust 300 feet away.

Turner and the aircraft both suffered broken backs. His injuries grounded him for several months, and the aircraft, in the words of an Air Force report, was "wrecked beyond economical repair." Martin and Air Force engineers pieced together what had happened. The culprit was a microswitch in the F-84G's tailhook/flap interconnect system. The system was supposed to retract the flaps when the tailhook went to the "up" position as it snagged the arresting cable to prevent the flaps from gouging into the mat. On Turner's landing, the tailhook first hit the mat just short of the arresting cable. It bounced over the cable, then hit the mat and bounced twice more. On its last bounce, the tailhook struck a shallow water-filled depression in the mat, raising a cloud of spray. The water could have shorted the microswitch, or the tailhook could simply have bounced into the "up" position. In any event, the interconnect system thought the tailhook had snagged the cable, so it retracted the flaps. Turner jammed in full throttle to go around, but the jet engine couldn't spool up fast enough. The *Thunderjet* struck the mat very nose-high, straining to fly, but its airspeed was too low.

Martin and Republic fixed the problem on the remaining F-84Gs, and Phase III resumed. The second mat landing was on December 8, 1954. Flown by Martin test pilot George Rodney, the F-84G's tailhook snagged the arresting cable at an airspeed of 161 miles per hour, and the cable yanked the *Thunderjet* out of the sky. The deceleration forces were a high

Featured Aircraft (Continued on page 5)

▲ ***The Project ZELMAL mat landings were not nearly as successful as the rocket-powered launches. This F-84G is obviously bouncing around a lot on the inflated mat as the arresting cable brings it to an abrupt stop. Of the three landings attempted, only one was successful. The others destroyed an aircraft and injured two pilots.***

What's In A Name?

Although they share the same model number, the Republic straight-wing F-84G *Thunderjet*, as used in Project ZELMAL, and the swept-wing F-84F *Thunderstreak* displayed at War Eagles Air Museum, are totally different aircraft. Their fuselages seem the same at first glance, but they have very few common parts. In 1949, Republic grafted a swept wing and tail onto an existing F-84E fuselage to create a "proof-of-concept" prototype for a new aircraft that the Air Force called the YF-96A. Later, with a new engine and fuselage and many other changes, this aircraft diverged greatly from its straight-wing progenitor. In August 1950, the Air Force, in a stroke of bureaucratic genius, renamed it the YF-84F, thus implying that it was a version of the well-known F-84 so that it could take advantage of Congressional funding priorities for the Korean War. ✪

▲ ***This photograph, possibly taken at Glenn L. Martin Company's Middle River factory near Baltimore (note the bridge in the background) shows one of the ZELMAL F-84Gs and the modified* Matador *missile mobile launch trailer. The "hoop" on the nose is probably to prevent the inlet lip from digging into the landing mat.***

Featured Aircraft (Continued from page 4)

but bearable 5.4 "Gs." The mat landing portion of ZELMAL was now proven.

The Air Force tried to repeat its success three days later, with Rodney again at the controls. This time, when the tailhook snagged the cable, things got bad in a hurry. Instead of a powerful but smooth deceleration, the F-84G bounced viciously three or four times before finally coming to rest on the mat. The violent landing forced Rodney's head forward, even though he was securely strapped in, and he struck the control stick a sharp blow with his teeth, actually leaving their impression on the top of the plastic grip. He suffered a severely strained neck in addition to other cuts and bruises.

This was a bad sign for ZELMAL. The tally for the three landings was one aircraft destroyed and two pilots injured. The Air Force prudently put further landing tests on hold while deciding what to do. But there was really no question. The mat landing technique was clearly unsuitable for operational use. The Air Force terminated the ZELMAL program on December 16, 1954.

POSTSCRIPT

The ZELMAL program was one approach to solving NATO's problem of keeping an effective, credible and survivable airborne defense force in place in Europe in the Cold War. Operational ZELMAL units could have given NATO fighters mobility and eliminated their dependence on vulnerable airfields, thus adding some security to the Western side of the standoff. The technical problems with the concept, however, doomed it to being just a footnote in the history of unusual aircraft. While the Air Force still had a need for survivable airborne defense forces, ZELMAL was not the answer. The real answer came years later, when advances in engine, materials and flight control system technologies led to the development of true Vertical Takeoff and Landing (VTOL) aircraft, such as the highly capable vectored-thrust Hawker *Harrier*.

The concept of zero-length launchings of manned aircraft resurfaced briefly in 1958, when North American Aviation conducted the ZEL program (standing for, of course, Zero Launch) at Edwards Air Force Base and Holloman AFB, near Alamogordo, New Mexico. In a series of relatively successful tests that involved only launches, without the mat landings, F-100D *Super Sabres* were blasted into the air from mobile trailers by 130,000-pound-thrust XM-34 rocket motors. You can watch actual film footage of these tests in the "Operation Zero Launch" episode on the *Steve Canyon* preview DVD (see the Editorial in this issue). The influential 1958 *Fighter Weapons Newsletter* summed up the ZEL program's goal: "[z]ero launch means that tactical fighters can be hidden underground, in the woods or moved from place to place, then launched on combat missions after runways have been destroyed by an attacking enemy." The goal of ZEL was the same one that had proven so elusive for ZELMAL five years earlier. The results were also the same. Like ZELMAL, ZEL never became operational. ✪

Steve Canyon (Continued from page 1)

him. Caniff's best-known work is *Terry and the Pirates*, a comic strip set in the Orient that featured two-fisted adventurer Pat Ryan, his plucky young sidekick Terry Lee, a bevy of exotic damsels and legions of nasty villains. The strip ran from 1934 until 1946, when Caniff quit because of a contract dispute with his publishing syndicate (another artist continued to draw *Terry* until 1973). *Steve Canyon*, Caniff's new strip, debuted in 125 newspapers on January 7, 1946. The adventures of the globe-trotting, high-flying pilot ran until just after Caniff's death, the last strip appearing on June 4, 1988.

In August 1957, Caniff and the NBC television network agreed to bring *Steve Canyon* to television as an adult-oriented, live-action show with obscure actor Dean Fredericks (Caniff's personal choice) as the title character. Fredericks was a World War II combat veteran who had been wounded in the invasion of Leyte in the Philippines in 1944. In an unprecedented show of cooperation, considering that it was not a feature-length movie, the U.S. Air Force signed on to fully support production of the series. Air Force pilots even flew dedicated missions solely for the show's cameras—no stock footage here! There are rumors that soon-to-be *Mercury* astronaut the late Leroy Gordon "Gordo" Cooper flew the camera plane for many of the episodes. While the stories and acting are up to the standards of the day, the real stars of *Steve Canyon* are the classic Cold-War aircraft showcased in spectacular aerial photography. Each episode featured now-classic jets such as the North American F-100 *Super Sabre*, Boeing B-47 *Stratojet*, Lockheed F-104 *Starfighter* and Convair F-102

Steve Canyon (Continued on page 8)

Plane Talk on the Web

Archives of *Plane Talk* from the current issue back to the first quarter of 2003 are now available in full color on our website.

Historical Perspectives

by Robert Haynes

The War Eagles Air Museum collection includes a high-performance single-engine jet fighter that looks more like a rocket than an airplane. Its looks are not deceiving. This Soviet-built Mikoyan Gurevich MiG-21PFM is the fastest aircraft in the Museum. It is the second-most-produced aircraft ever, after the Lockheed C-130 *Hercules* transport. We acquired it in 1995. It had been in the East German Air Force. MiG-21s served in 47 nations, including the Democratic Republic of Viet Nam (North Viet Nam).

The use of MiG-21s in Viet Nam offered the U.S. a technological and operational wake-up call. The Viet Nam War itself offered other lessons that, unfortunately, we do not seem to have learned, and thus today we are trapped in another divisive, costly and frustrating war.

Spanish philosopher George Santayana (1863–1952) coined the old adage "Those who do not remember the past are condemned to repeat it." It was never truer than it is today. Consider the disturbing similarities between the fabricated Gulf of Tonkin Incident in 1964, which escalated U.S. involvement in Viet Nam, and the equally fictitious reports of Iraqi "weapons of mass destruction" and "links to al-Qaida" that "justified" our invasion of a sovereign nation 40 years later. The current war has striking similarities to Viet Nam, but also some key differences. For example, the U.S. and the UN had Saddam Hussein well checkmated through sanctions, no-fly zones and large military forces stationed nearby in Saudi Arabia and Turkey. No invasion should have been necessary.

The MiG-15, a MiG-21 progenitor, first appeared in North Korea in the early 1950s. Technically, it was as good as (or, in some areas, even better than) the U.S. North American F-86 *Sabres* that it dueled in combat. But the Communist MiG pilots were not as well trained as U.S. airmen, so the exchange ratio of "kills" favored U.S. forces by as much as 10 to 1. The MiG-21 that U.S. pilots met over Viet Nam was something completely new. An unusual design—most aircraft with delta wings do not have a separate horizontal stabilizer—the latest product of the MiG design bureau could fly faster than Mach 2 and higher than 60,000 feet. The diminutive interceptor was armed with guns, cannons and *Atoll* heat-seeking air-to-air missiles.

The Soviet Union delivered the first MiG-21 to the Viet Nam Peoples Air Force (VPAF) in April 1966. The first "official" MiG-21 kill of the Viet Nam War took place on July 7, 1966, when MiG pilot Tan Ngoc Xiu of the 921st Air Regiment downed a Republic F-105D *Thunderchief*. Both sides later made major operational changes to reduce their losses. The VPAF resorted to hit-and-run tactics. The U.S. Air Force armed its jets with guns, because their missiles alone were not doing the job. The U.S. Navy created the TOP GUN air-to-air combat school to train its pilots on tactics to use against the agile MiG-21s.

Both sides also committed breathtaking bureaucratic blunders. It is ironic, for example, that the U.S. government, which wanted to stop the spread of Communism, ran the Viet Nam War with a stifling, demoralizing, top-down, micro-management style more like that of Soviet-inspired North Viet Nam, rather than rely on good old-fashioned "American know-how." President Lyndon B. Johnson famously boasted that he could control combat operations in Viet Nam all the way down to specifying which buildings to bomb.

Another factor that hampered U.S. military efforts in Viet Nam was the birth of the "computer age." The 1960s saw the development and the start of widespread proliferation of electronic computers—surely one of the most "double-edged-sword" accomplishments in human history. This new technology offered the Government a previously undreamed-of ability to mindlessly process, or "crunch," enormous amounts of data. The war became more a matter of numbers and statistics than of strategy, tactics and leadership. Computers took in raw data from the field and churned out ream after ream of reports, charts and vu-graph presentations, but there was little critical, reasoned and competent human analysis of the information. The over-reliance on technology meant that virtually no one looked at the constantly accumulating material from a strategic point of view to figure out what the numbers really meant, as opposed to how impressive they looked on a spreadsheet. This statistical obsession led to the creation of delusional yardsticks of progress such as "body count," "sorties flown," "ordnance

Historical Perspectives (Continued on page 7)

▲ This Internet-sourced photo shows MiG-21PF number 4324 at the Viet Nam Military History Museum in Hanoi. It wears 14 faded victory stars on the nose representing U.S. aircraft shot down. Since several pilots shared each Viet Nam Peoples Air Force (VPAF) aircraft, it is likely that no single pilot achieved all 14 kills.

Membership Application
War Eagles Air Museum

War Eagles Air Museum memberships are available in six categories. All memberships include the following privileges:

- ✈ Free admission to the Museum and all exhibits.
- ✈ Free admission to all special events.
- ✈ 10% general admission discounts for all guests of a current Member.
- ✈ 10% discount on all Member purchases in the Gift Shop.

To become a Member of the War Eagles Air Museum, please fill in the information requested below and note the category of membership you desire. Mail this form, along with a check payable to "War Eagles Air Museum" for the annual fee shown, to:

War Eagles Air Museum
8012 Airport Road
Santa Teresa, NM 88008

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Will be kept private and used *only* for War Eagles Air Museum mailings.

Membership Categories

☐	Individual	$15
☐	Family	$25
☐	Participating	$50
☐	Supporting	$100
☐	Benefactor	$1,000
☐	Life	$5,000

Historical Perspectives
(Continued from page 6)

delivered" and "villages pacified." Only the most detailed examination of the raw data, which few military or civilian officials were able or inclined to do, would reveal that many sorties simply dropped more bombs on already obliterated villages and added to the body count only people who were already dead.

This robotic mindset and lack of critical thinking not only resulted in wasted action, but allowed for some startling omissions and lack of action as well. For example, the U.S. Air Force's air combat training program at the time consisted of tightly scripted exercises with friendly forces and aggressors using the same types of aircraft and repeatedly flying the same scenarios. A better approach—and one adopted only after it was too late to be effective for Viet Nam—would have been for the aggressors to use different aircraft with different capabilities in non-repetitive, realistic, fast-paced combat scenarios. Instead, the USAF sent their top-of-the-line fighters, such as the McDonnell F-4 *Phantom II*, into air combat armed only with missile systems—they had no guns or cannons. The sophisticated missiles were prone to malfunctions in the hot, humid climate of Southeast Asia, which saddled American pilots with a distinct disadvantage when they faced the newest, most advanced Soviet-built fighters, such as the MiG-21, that had capabilities and characteristics totally different from anything they had previously encountered.

Fortunately for the U.S. Air Force, there were still a few maverick ace pilots on the scene with the knowledge, experience, courage and ability to successfully defy the distant, out-of-touch Washington bureaucrats and force important changes in training and tactics that soon proved to be highly effective against the VPAF. One of those men was Colonel Robin Olds. You'll find his story in the next issue of *Plane Talk*. ✪

▲ ***The diminutive size of the MiG-21 is apparent in this scale drawing that shows it in comparison with two major U.S. aircraft of the Viet Nam War, the McDonnell RF-4C* Phantom II *and the Republic F-105D* Thunderchief.**

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Steve Canyon (Continued from page 5)

Delta Dagger. There were prop planes as well, such as the Boeing KB-50 *Strato-tanker* and Douglas C-47 *Gooney Bird.*

Steve Canyon premiered on Saturday evening, September 13, 1958, in glorious black-and-white, with an episode entitled "Operation Towline," based on an original Caniff plot. It told the story of a fictitious test involving three F-102 interceptors towed behind a KB-50 to increase their range and endurance. The second episode, "Operation Zero Launch," depicted actual tests of an F-100 launched from a mobile trailer in exactly the same way as the ZELMAL F-84G described in this issue's "Featured Aircraft" article.

Unfortunately, despite its interesting stories, top-quality production values and appreciative audience, *Steve Canyon* lasted for only 34 episodes before it was unceremoniously canceled. By the end of the year, schedule changes, rising production costs and vocal complaints by the aircraft companies, whose products the show did not always depict as flawless, had doomed it to an early death. ABC and the Armed Forces Network showed reruns for several years afterwards, but by the mid-1960s *Steve Canyon* had vanished into oblivion—until now.

▲ ***Steve Canyon (Dean Fredericks) watches a North American F-100* Super Sabre *blast off from a mobile trailer in the "Operation Zero Launch" episode of the classic television series. The test is for real; it's not a fake "special effect." Photo used with permission of the Milton Caniff Estate.***

In 2005, California-based film producer/director John Ellis watched an old VHS tape recording of the *Steve Canyon* pilot episode. He was so blown away by the show's quality and timelessness that he immediately came up with the idea of recovering the long-lost series and releasing it on DVD. He soon teamed up with Harry Guyton, Executor of the Milton Caniff Estate (and one of Caniff's nephews). They searched all over the country for original 35mm broadcast master reels of the show. By early 2008, they had located masters for all 34 episodes. A DVD set of the entire series, restored to pristine condition, with special features on the restoration process and interviews with the late Dean Fredericks' family, will be released in the summer of 2008. You can help fund the restoration and production effort by buying the preview DVD, with four selected, crystal-clear episodes, in the Museum gift shop. For more information, check out:

http://stevecanyondvd.blogspot.com/ ✪