



SKYHAWKS ARRIVE IN BRAZIL

Recently (Newsletter, Spring '98) we reported the purchase by Brazil of the 23 remaining Kuwaiti Skyhawks (20 A-4KU, 3 TA-4KU), with the Boeing Company (formerly McDonnell-Douglas) acting as intermediary, coordinator, and facilitator. The Skyhawks departed Kuwait in early August and arrived in Brazil on 5 September 1998 after a 24-day transit through the Indian Ocean, around Cape of Good Hope, and across the Atlantic.

Re-designated AF1 (former A-4KU) and AF1A (TA-4KU), the Skyhawks are to be used by the Brazilian Navy from the deck of the country's only aircraft carrier, *Minas Gerais* (A-11). The former Kuwaiti A-4s, among the final Skyhawks built by Douglas in El Segundo and delivered in 1977, were selected by



Brazil because of low flight time, excellent physical condition, and a favorable price tag.

The "new" Brazilian Skyhawks were officially added to the Brazilian Navy inventory on 02 October and will be kept in short term preservation while the supporting infra-structure, pilot training, and aircraft maintenance programs are finalized. Pilot training will be conducted in both Argentina and the USA, the latter slated to begin at VT-7 at NAS Meridian, MS in November of this year.

PRIOR TO SHIPMENT FROM KUWAIT, two of the A-4KUs purchased by Brazil were displayed (top photo) in a "before and after" photo-op. The medium gray paint scheme of the Brazilian Navy (left) contrasts with the "desert tan" scheme of the Kuwaiti Skyhawk. Individuals are Steve Pallardy (left) and Rich Hawkins of the Boeing Company's Packaging, Handling Storage, and Transportability Department. In the bottom photo, an A-4KU is crane-lifted onto a flat bed trailer for movement to the Kuwait trans-shipment seaport. (Photos by Boeing Co.).





The AF1 and AF1A *Skyhawks* are currently slated to become operational in August or September 1999. The Brazilian *Skyhawk* squadron, designated VF-1, will be commanded by Frigate Captain Carlos Marcondes.

Acquisition of the *Skyhawks* has caused considerable public interest and excitement in Brazil. That country's annual "Navy Day" celebration, usually held in mid-August, was delayed until 2 October this year in recognition of the arrival of the *Skyhawks*. Prior to the decision to acquire the Kuwaiti aircraft, operation of fixed-wing assets in the Brazilian military has been the domain of the Air Force. Since purchase of *Minas Gerais* (ex-HMS *Vengeance*) from Britain in 1956, Brazil's naval aviation operations have been limited to helicopters. More than 40 years later, the newly acquired *Skyhawks* represent the Navy's first opportunity to operate fixed-wing aircraft from its own aircraft carrier.

Although Brazilian government officials preferred to keep the *Skyhawk* acquisition matter low key, the arrival of the aircraft was well covered by Brazilian local and national news media, and generated e-mail communication with the *Skyhawk Association* by A-4 aficionados in that country. Movement of the newly-acquired aircraft from the arrival sea port to final destination airfield was scheduled to take place under cover of darkness. Nonetheless, the word got out and large, spirited crowds of people lined the streets at one and two o'clock in the morning to cheer and generally celebrate the *Skyhawk* arrival.

MEMBERSHIP HOW-GOZ-IT

As of 30 September, the Skyhawk Association paid membership was 539 against a 1998 membership goal of 600. We've had a membership increase of about 21% so far this year. A net gain of 61 members in the last quarter should be easily attainable.

YOU CAN HELP. A lot of former *Skyhawk* jocks out there aren't members simply because they are not aware of the existence of the Skyhawk Association. But they are **READY** for membership. Experience has shown that *personal contact* with former A-4 driver buds is **THE** most effective recruiting tool. Know the whereabouts of a former *Skyhawk* squadron mate who's not listed in the SA roster? Make a phone call or drop a postcard invitation. Too hard? OK, send the name and address to the Secretary and he'll do the recruiting number.

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The Skyhawk Association is an all-volunteer membership organization open to anyone interested in or with an affinity for the A-4 *Skyhawk* aircraft. The purpose of the organization is Fun and Camaraderie, and the perpetuation of the history, legend, and tradition of the *Skyhawk*.

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Submission of articles – TINS & "There I Was..." sea stories, unusual or amusing personal experiences involving the *Skyhawk*, etc. – by members for possible publication in this newsletter – are both welcome and encouraged. Send to the editor by snail-mail (see last page) or e-mail (address above).



FROM THE PRESIDENT

T.F. "Tom" Brown
(tfbIII@webtv.net)

Our '98 Skyhawk AOM and board meeting are history! You'll notice right off that you have a new President. That's right, I took the lead from Otto Krueger in Reno and am looking forward to working and having some fun together during the next year.

My first order of business is to thank some folks who have served us so well in the past year. First and foremost, of course, is Otto. His relief of Whiz was seamless and he left an indelible mark on our organization. He worked particularly hard on membership and at last count we were right at 539 paid members, a significant increase in the past year. Thankfully, Otto is remaining on the Board and will continue to serve as Membership Chairman. We have set a goal of 750 members by year 2000!

Next is thanks to our Board Officers, each of whom served us faithfully and very professionally throughout the year. Of particular note are the contributions of Bud Southworth and Wynn Foster. They invested countless hours on our Web site and Newsletter respectively, each doing a flat outstanding job! Finally, I want to single out Jack "Puresome" Woodul, Dave "Whizzer" White, Ray Alcorn, and Ernie Laib for their great work in making our AOM and hospitality suite at Reno the tremendous success that they were.

At our annual meeting we elected and installed three Directors for three year terms beginning 1 January 1999: Ernest E. "Grecian Ern" Laib, Ted "Bear" Langworthy, and James "Jim" Ritchie (incumbent). A special thanks in advance to those gents for agreeing to serve our Association in this special way.

It was decided that our 1999 Annual Meeting will be held in the East – at Pensacola, FL. The primary date for our meeting will be in November, in conjunction with the annual Blue Angel celebration. Our back-up date will be in October. Whizzer has volunteered to chair the planning committee and has already done a lot of liaison with the Naval Aviation Museum. Les Jackson and other members in the local (Pensacola) area will be assisting. We plan to continue to have a presence at Tailhook '99, as well as the annual meetings of ANA and MCAA, but the main event in 1999 will be at Pensacola. Will keep you informed as the plans evolve.

Our Association Board is currently organized into the following committees/activities: Membership, Special Events/Projects, Technical-Historical, Web page, Newsletter, Annual Meeting, and Awards-Recognition, plus the Nominating Committee required in the bylaws. For the most part, in the past the committees have been composed of Directors. I plan to modify that so as to get more members involved. So, if any of you would like to get more actively involved in our association, please let us know. You can send an E-mail to me (tfbIII@webtv.net) or write to the address on the back page of this newsletter. We can use your talents and energy!

On a related issue, we would very much like to have Marine representation on our Board of Directors, as well as someone from the Lemoore area. If you are in either of those categories, and are willing to serve as a Director, please contact Puresome, the Nominating Committee Chairman (puresome@flash.net), or me and throw your hat in the ring for next year's nominating process. Thanks in advance.

I attended the second Lemoore Vietnam Aviators Reunion held in Visalia, CA, at the beginning of this month and was happy to see many of you there. What a great weekend! One of the first events was held at Jack Stone's Barn and I'm pleased to say that Jack and Mrs. Stone are still going strong. One of our A-4s is still perched proudly at Welch Park in Lemoore, looking good with Mike Estocin's name on the side. Also, there was another A-4 at the convention center as backdrop for the two main event banquets. Bob Taylor and his gang did a terrific job, from start to finish, in organizing those events.

Finally, I am honored to be President of your Skyhawk Association for the next year. If any of you have ideas on how to improve our operations, please pass them on. I'd love to hear from you. I have just one request for you: Each of you please get one new member during the coming year, hopefully sooner than later. Just one new member each! The four issues of Captain Hook's excellent newsletter alone are worth the \$20 price of admission. Contact one of your old squadron buddies and bring him aboard. I'm certain each new member will enjoy the ride.

Have Happy and safe Thanksgiving and Christmas seasons. We'll be back after the New Year with additional details about the 1999 annual meeting so that you can make plans for a Pensacola adventure. God Bless.

A-4s Forever!

Tom



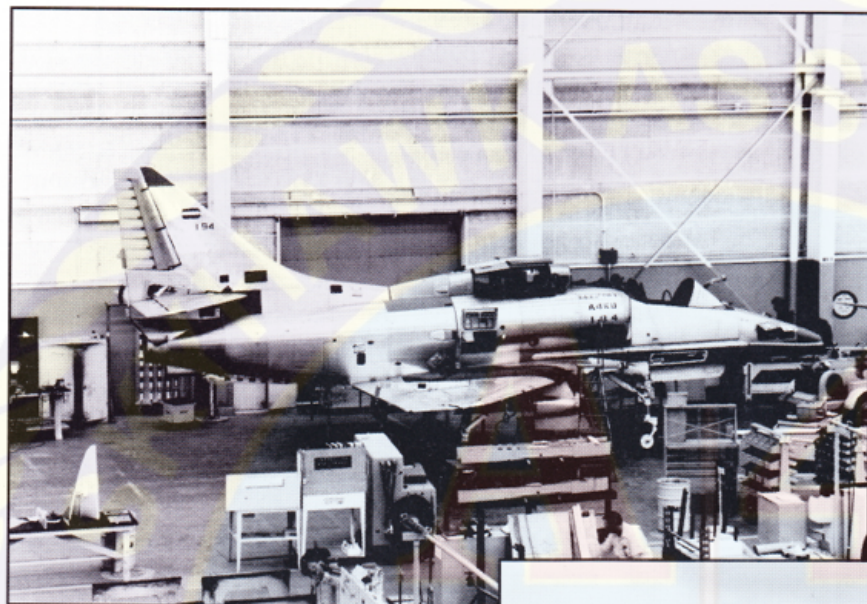
SKYHAWK AFT AVIONICS PACKAGE

by Harry Gann, Association Historian

In 1952 when the Heinemann design team began to put the *Skyhawk* together, they were cautioned by their leader to be mindful that the aircraft was to be kept simple and lightweight. When the XA4D-1 (BuNo 137812) rolled out, it was radical in that some of the then current design trends were reversed.

For one, the new *Skyhawk* was half the weight that the Navy had expected and, yet, was considerably faster. The new A4D-1 (A-4A) *Skyhawk* could carry a "nuke" weapon and deliver it to a target some 400 miles distant. It did not have radar, there was no provision for in-flight refueling, and it had only three wing stations to carry the required ordnance or supplementary (external) fuel.

The second iteration of the *Skyhawk*, the A4D-2 (A-4B), picked up the in-flight refueling capability, added the AN/ASN-19 navigation computer, changed the elevator from boosted to hydraulically powered, and changed the aileron power from a single to a tandem cylinder. A radar altimeter was



added, along with provisions to carry the *Sidewinder* air-to-air missile. Next, the A4D-2N (A-4C) saw the addition of the AN/APQ-19A radar in a longer nose. A major change was made to the A4D-5 (A-4E) with the replacement of the Curtiss-Wright J-65 engine with the P & W J-52 engine. That change provided an additional 800 pounds of thrust over the J-65, and another 800 pounds of thrust were added later. The added power in the E model enabled the addition of two more wing stations for carrying of additional stores. The A-4F version added nosewheel steering and landing spoilers to aid in



ONE OF THE FIRST production Skyhawks to be modified with the aft avionics package was A-4F BuNo 152101, shown (top photo) at the Douglas Palmdale, CA facility prior to its first test flight. (Note: the static pressure sensor mounted on the tip of the in-flight fueling probe.) After company testing and fitting with the "hump back" modification, 152101 was assigned to VX-5 (lower photo) at NAS China Lake, CA (Photo from Harry Gann Collection)



cross-wind landings. Still, overall, the recognizable shape of the *Skyhawk* airframe remained essentially the same as that of the original A4D-1 (A-4A).

The shape of the *Skyhawk* changed noticeably during the Vietnam War when the North Vietnamese anti-aircraft gun and surface-to-air missile capabilities escalated and began to take their mark on our aircraft in Southeast Asia. Countermeasures – masking and electronic wave detection devices –



AN A-4KU SKYHAWK, destined for delivery to the Republic of Kuwait, is shown on the Douglas production line at Palmdale, California, c1977. Note open panels of the aft avionics package "hump" for easy installation and removal of black boxes. (Photo from Harry Gann Collection)

were developed and installed on our aircraft to help confuse or minimize the effectiveness of the enemy systems. Since the *Skyhawk* had been developed with little excess space for installation of additional equipment, the solution was to add the required avionics, wiring, and antennas *outside* of the existing Scooter airframe. The necessary black boxes were added atop of the fuselage, aft of the cockpit, in a streamlined "hump-back" structure called the aft avionics package. The structure was engineered so that the electronic gear could be easily installed or removed.

A group was set up in the Philippines to install the needed electronic equipment in combat-deployed *Skyhawks*. The group project official name was "Project Shoehorn." At the same time, in the

States the A-4Fs were already being delivered to operational squadrons. In order not to delay those deliveries, another group was established, at MCAS El Toro, to retrofit already delivered *Skyhawks*, both A-4Es and A-4Fs. As soon as the factory production line caught up with the retrofitting of aft avionics packages, the out-of-factory groups were shut down.

Subsequent *Skyhawks* that were delivered with factory-installed aft avionics packages were the A-4K (for New Zealand), the A-4M (USMC), the A-4N (Israel), and the A-4KU and TA-4KU (Kuwait). In addition 23 TA-4F aircraft were modified with installed electronic gear to meet a requirement for the USMC "FAST FAC" mission. The latter aircraft were designated OA-4M. To upgrade the capabilities of Navy and Marine reserve forces, their A-4C aircraft were also modified with the aft avionics package and the accompanying supporting equipment. One hundred such aircraft, re-designated A-4L, were produced.

The installation of the aft avionics package was not a sure thing when it came to identifying the various versions of the *Skyhawk*. Some A-4C, -4E and -4F version did not receive the aft avionics package upgrading. Those that did, looked similar to one another

While addition of the aft avionics package in the *Skyhawk* did not meet the aesthetic approval of Ed Heinemann, the solution proved to be a simple and competent means of keeping the *Skyhawks* as effective weapons against the ever-improving enemy anti-aircraft weapons systems.



MISCELLANY

A "GRUNT" SENTIMENT, expressed by a former Marine rifleman in the forum page of a recent issue of *The Aerodrome* magazine, speaks for itself:

"As for A-4s....you betcha! When the pucker-factor goes off the scale, and you want the Snake-eyes to be on target, there ain't anything better than the Scooter. I am still here today because a couple of Skyhawk drivers put their loads where (exactly where!) they needed to go. Any man who ever strapped on a Scooter drinks for free when he bellies up to the bar with me! Semper Fi!"

COPIES OF THE "SKYHAWK TRIBUTE," a lithograph by Arizona artist Roy Grinnel (Newsletter, Winter 1998) may now be purchased, at \$250 apiece, from four sources:

Military Art Gallery, 57 Macomb Place, Mt. Clemens, MI 48043, Tel: 800-362-8567;
Stenberg Aviation Art, 17975 Sky Park Cir., Suite B, Irvine, CA 92614, Tel: 800-270-1943;
Buchanan Aviation, 163 Sunset Hill Rd., Redding, CT 06896, Tel: 800-659-4174; and
Rick Turner, 1730 Maunta Lane, Jackson, MI 49201 Tel: 517-796-0801.

RESTORATION. A-4A, BuNo 142226, is being restored for display at the Carolinas Historic Aviation Museum in Charlotte, NC, and the museum is looking for cockpit instrumentation. Anyone who can help, or can provide a lead to where such equipment might be found, is encouraged to get in touch with George Train of the restoration team, by e-mail (gct3@bellsouth.net), or by snail-mail at 4108 Airport Drive, Charlotte, NC 28208.

AN ALERT MEMBER OF OUR ASSOCIATION reports that, in the third race at Hollywood Park on Saturday, 18 July, a three year old colt named "Skyhawk" led for most of the way but (sigh!) faded in the stretch and ran out of the money. Four days later, another colt – "Captain Hook" – ran in the sixth race on Del Mar's opening day. Alas, the results of the Del Mar race were not reported.

STATISTICS. In what may become a lifetime project, the SA Historical Committee is attempting to track the whereabouts and/or ultimate disposition of all 2,960 *Skyhawks* that were produced. Eventually, in some form or other, we hope to assemble a growing mound of statistics gathered from a number of sources into a useable reference format, perhaps for display in our web site. As a sampler, here are some of the Vietnam War (Feb 1962-June 1973) *Skyhawk* statistics gleaned to date:

- ✓ **Total combat losses:** 211 (199 Navy, 12 Marine Corps). Combat losses are those reported as being a direct result of combat action (Includes three probables listed as "unknown.")
- ✓ **Operational losses:** 121 (86 Navy, 35 Marine). Operational losses include those that may have been combat mission related, but were not recorded as being a direct result of combat action.
- ✓ **Losses by model:** A-4B = 2; A-4C = 81; A-4E = 107; A4F = 19; TA-4F = 1; Unknown = 1.
- ✓ **Losses by cause:** AAA = 130; Auto. Weapon = 3; Own Ordnance = 9; SAM = 36; Small Arms = 12; Air-to Air Combat = 1; Unknown = 20.

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The original A-4 *Skyhawk* logo design, circa 1952, created by the Douglas Aircraft Company.

The color scheme was a patriotic red, white, and blue – a blue hawk with red beak, red claws clutching two low-drag bombs, red lettering, and blue border on a white background.

Incidentally, the design of the low drag bomb was yet another product of the fertile mind of Ed Heinemann, father of the beloved *Skyhawk*.



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