

THE A-4 EVER

SKYHAWK ASSOCIATION JOURNAL VOL 23-2



Contents:

Heinemann's Hot Rod

McDonnell Douglas Skyhawk TA4J 156925

Weapons: Memories of the weapons we used in 1967

Light Attack Reunion

Skyhawk Reunion
September 7-10, 2017
Sparks, NV

Summer 2017

<http://a4skyhawk.info>



THE PREZ SEZ

By Pete Cole

As I previously reported in the Spring issue of the Journal, the A-4 Skyhawk Association Midyear Board of Directors Meeting concluded on Saturday, 11 March, with a well-attended A-4/A-7 Light Attack Reunion at the Haller Air Park hosted by Director Dave "Hide" Dollarhide and the "Dream Land Squadron." Hide's article on the Light Attack Reunion is included in this issue, but I do want to congratulate Hide, once again, for organizing an **Outstanding** event that was attended by almost 200 old A-4 and A-7 drivers, wives and significant others. If you were there, you met old friends and enjoyed great camaraderie, as well as an outstanding air show; if not, look forward to the next, or better yet, join us in the Attack Ready room at Hook '17 in September. There won't be an air show, but we will have A-6, A-4 and A-7 Bubbass, and even some Fighter pukers there. **BZ**, again, Hide on a great event!

Skyhawk Association Business

Membership: The Association currently remains a little over 800 strong. Recruiting and retention remain high on our list of goals, and we are always looking for recruiting opportunities. Once again from my "soap box," **you** can help! Find your squadron mates out there that need the cattle prod, or at least the reminder! It's your Association, let's keep it vibrant, alive and well.

Once again, a reminder to PLEASE let us know if you have a change in your email, address, or phone number, so we can keep our records up-to-date. Send changes to our Secretary at skyhawkasn@gmail.com.

SDOs: Our Squadron Duty Officers (SDOs) are key people in keeping us connected and helping to get the word out when required. The official list of squadron SDOs is posted on the Skyhawk website 'FAQ - Research - Contact' page, <http://a4skyhawk.info/page/faq-research-contact>, and while the majority of these slots are filled, there are still some units that need an SDO. Once again, I ask all members to please review the list on the website and see if there are any open units for which you would consider accepting the SDO responsibility. Several of our SDOs have agreed to host more than one unit, and we greatly appreciate their additional efforts. For Navy units please contact George Blosser, VP Navy, george.blosser1@gmail.com, and for Marine and Foreign Service units contact Steve Linder, VP Marines, steve.linder@1969.usna.com.

Website: Webmaster Gene Atwell, his assistant Dave Weber, and their volunteer web team have been working tirelessly. However, more volunteers are needed to assist with simple updates. If you would like to help, contact Dave Weber, twidget55@darw.com. Also, we ask you to once again take a look at your squadron's web page. If you can add or correct information, that would be greatly appreciated.

Skyhawk Losses Journal Feature Assistance: I recently sent out a call in the "President's Podium" section of

the website Ready Room page for members to assist Gary Verver in his effort to fully document Skyhawk losses (see his feature article in this and future issues). Gary, gp@verx2.org, is the author of the Journal feature and our keeper of the "List of Unknowns," i.e., the Who, What, When, and Why that are not always completely documented. Contact Gary with any information you might have. In addition, we need volunteers to help Gary maintain the data base. If you would like to assist Gary, please contact him, as I am sure he would appreciate any and all help!

Events, NOTAMS, and R&I

Now Hear This!

The word on upcoming events and dates of note:

- The Squadron mates of the **VA-64 Black Lancers** are planning a reunion at the Nugget Hotel and Casino September 7-10, 2017, in conjunction with the 2017 Tailhook Reunion. All former members of the Black Lancers are asked to contact Jim Murphy at jmurphyhia@verizon.net for more information. The Black Lancers served with distinction with Carrier Air Wing 6 aboard the USS *Enterprise* and the USS *America* through the 1960s.
- The **Skyhawk Association Reunion** will also be at the Nugget Hotel and Casino September 7-10, 2017, in conjunction with the 2017 Tailhook Reunion. The Annual Luncheon and Members Meeting will be held 8 September at noon at the Poolside Chalet Terrace (see ad this issue). Our speaker will be LCDR Terry Wolf, reporting on the *Skyhawk Association and the IAF*. He will report on our upcoming (end of June) trip to Israel, featuring a visit with the Israel Air Force and a reunion dinner with 116 Squadron members from the Yom Kippur War (Oct '73), which will be held at Tel Nof IAF Base. He will also talk about the 2015 trip to Israel.

Skyhawk luncheon reservations can be made by sending a \$30.00 check to Mark Williams, 400 Howell Way #102, Edmonds, WA 98020. The Attack Ready Room, brought to you by Jack "Youthly Puresome" Woodul, will be open every day.

- **Early Notice:** The Marine Skyhawkers are working on a 2018 reunion in Pensacola, FL. Tentative dates are 1-4 November 2018, on the Blues Homecoming and the Florida Arts Festival weekend. The Pensacola Grand Hotel has been selected. Planning is in the initial stages; more details to follow. POCs are Directors Todd "Hun" Frommelt and Mark "Senator" Williams. *continued on page 4...*



The Prez Pete Cole



IN MEMORY OF
M. DAVIS "WHIZZER" WHITE, D.D.S.
(1939-2007)
FOUNDER OF THE SKYHAWK ASSOCIATION

◆ ◆ ◆
SKYHAWK ASSOCIATION, INC.
Officers and Directors

Pete Cole
President and Director (FY 18)
pete_cole@verizon.net
George Blosser
VP (Navy) and Director (FY 18)
george.blosser@gmail.com
Steve Linder
VP (Marines) and Director (FY 17)
steve.linder@1969.usna.com
Terry Cooney
Secretary and Director (FY 17)
skyhawkasn@gmail.com
Mark Williams
Treasurer and Director (FY 18)
rogerwilco14@gmail.com
Gene Atwell
Webmaster and Director (FY 18)
geneatwell@gmail.com
Dave Dollarhide
Director (FY 17)
davedollarhide@msn.com
Mike Eberhardt
Director (FY 19)
thebuick@aol.com
Bill Egen
Director (FY 19)
zerocep@ec.rr.com
Todd Frommelt
Director (FY 17)
toddfrommelt6913@att.net
Ed Jobin
Director (FY 18)
edjobin47@gmail.com
Ted Langworthy
Director (FY 19)
FLYBEAR@peoplepc.com
Bill Ravgiala
Director (FY 19)
gunnyrav@gmx.com
Joe Turpen
Director (FY 19)
forrestal@fewpb.net
Terry Wolf
Director (FY 18)
tairwolf@comcast.net
Skyhawk Association, Inc.
2421 Clubside Drive
Beavercreek, OH 45431
skyhawkasn@gmail.com
Website: www.a4skyhawk.info

BOMBS AWAY!

• Summer 2017 •

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JOURNAL STAFF

THE A4 EVER

Bob "Raven" Hickerson – Chairman/Co-Editor.

Dave Dollarhide – Co-Editor.

Gene "Blade" Atwell – Webmaster.

Feature Contributors: George Blosser, Bill "Jigger" Egen, Todd "Hun" Frommelt, Peter Mersky, Boom Powell, Joe Turpen, Gary Verver, Mark "Senator" Williams, Jack "Puresome" Woodul.

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Contributions

We actively seek contributions from members, including news, photos, historical documents, anecdotes and other items of interest. Submissions may be edited due to space limitations in the newsletter. Contributions may be emailed to the Journal Editor at sa-journal-editor@a4skyhawk.net or mailed to Bob Hickerson, 1222 Balcones Drive, Fredericksburg, TX 78624.
Stephanie Davis, graphics, skyhawk@ncflight.com. Printed by NCCOAST Communications, Morehead City, NC.

On the Cover: Flight of VA-127 aggressors. Photo provided by Michael L. "Rob" Roberts, author of *Aircraft Histories of the Ling-Temco-Vought A-7 Corsair II*. Believed to be a US Navy photo.

THE PREZ SEZ continued. from page 2..

VA-163 and VA-164 Saints/Ghost Riders Reunion: VA-163 and VA-164 held a reunion at the Nugget Casino in Sparks, NV, on 3-5 May 2017. As reported by Ed Copher, ecopher@satx.rr.com, the VA-163 SDO, in his June newsletter, the "VA-163 Saints Gram:"

"The Saints Reunion was a great success. A big thank you for all that were involved in organizing it, and especially Ode (ed., Richard Odegaard). The banquet was especially enjoyed



VA-163 Squadron Mates Enjoying the Reunion at the Nugget (photo via Ed Copher)



Brian Compton, Former Skipper of VA-163, (right), and Ed Chadwick on Lake Tahoe (photo via Ed Copher)

by all, very emotional touching speakers. The NAS Fallon tour was a lot of fun, very nice air park. Top Gun is there now! Oldest member attending was Brian Compton at age 89. The Nugget was very nice, and accommodating, most rooms were like brand new and first class. When is the next one???"

If you have a reunion coming up, please send a short description to me or the Journal editor so that we can list it in *The A-4Ever* Journal.

A-4s Forever! 

Read?

you think
we read?

WAVE-OFF! A HISTORY OF LSOs AND SHIP-BOARD LANDINGS

Robert R. "Boom" Powell, Commander, USN (Ret).
Specialty Press, Forest Lake, MN. 2017.
192 pp. Ill. \$39.95.

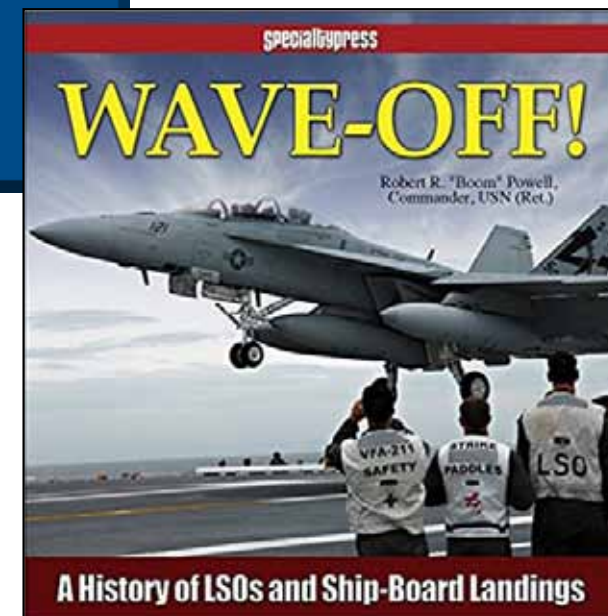
Reviewed by Cdr. Peter B. Mersky, USNR(Ret.)

Retired Cdr. Boom Powell is well-qualified to write this beautifully illustrated account of one of the carrier navy's most iconic individuals, the Landing Signal Officer, or LSO. An experienced Naval Aviator and former LSO, himself, Powell flew A-4s and RA-5Cs in Vietnam and has written several books and articles, including a book for Osprey on the RA-5C Vigilante's service in Southeast Asia. He is also known for his long-running column, "The Catwalk" for *The Hook*, the quarterly magazine for the Tailhook Association.

His new book's photo selection is excellent with many color and black-and-white images showing the scope

of his subject from the first attempts to fly from ships, and the development of such a dangerous exercise from World War I, through the interwar decades, then World War II and Korea, the following periods of Vietnam and the 1970s through the 1990s, and what promises a highly interesting time after the turn of the century.

The writing is crammed with dates, personalities and exciting stories, although I wish more care had been taken in editing and proofreading with the photo captions, which contain errors that should have been caught when the production process was completed. One odd mistake shows up on page 88 when he declares WWII Navy ace Swede Vejtasa was an enlisted aviator. He might be referring to Swede's time as a student aviator before commissioning, but that really isn't a correct reference. Vejtasa received his gold wings and ensign commission at the same time.



There are several sidebars and tables that highlight specific subject areas and are full of interesting details apart from the main text. International LSO developments as well as shipboard operations, especially in Britain, Japan, and France, are also covered in detail.

Mistakes and publishing hiccups aside, this book is a true labor of love and will be well received by both the enthusiast and former Naval Aviators. I can't think of one aspect of this demanding world that Powell has not covered in the text, photos and graphics.

NEW MEMBERS

Adams, Steve • Bedford, Bedfordshire, UK
Bailey, Douglas • Warren, ME
Kirby, Nick • Lillian, AL
Klein, Barbara • San Jose, CA
Lomba, Robert • Fort Myers, FL

Moore, Johan (Jack) • St. Louis, MO
Turner, Glen • Bulls, Rangitikei, NZ
Wilson, John • Leeds, West Yorkshire UK

Join or renew, and give
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membership for \$20 more.

Contact Terry Cooney at
skyhawkasn@gmail.com or at
2421 Clubside Dr., Beavercreek, OH 45431



SKYHAWK ASSOCIATION REUNION

Hook '17 - Nugget Hotel - Sep 7 thru 10



Exhibit Booth 722 - a4skyhawk.info



LUNCHEON
Friday, 8 Sep Noon
Poolside
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SPEAKER
LCDR Terry Wolf
"Skyhawk
Association and
the IAF"

RESERVATIONS
Mail \$30
Mark Williams
400 Howell Way #102
Edmonds, WA 98020

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TAKE NO PRISONERS

Letters to the Editor

sa-journal-editor@a4skyhawk.net

■ To the Editor:

I must respectfully disagree with Dave Dollarhide's answer to the trivia questions in the Spring, 2017 Skyhawk Journal concerning the loading of triple ejector racks on the A-4E and F.

He states that a MK82 500-pound bomb couldn't be loaded on the in-board station of the TER due to landing gear door clearance. I flew the A-4E in 1967 with VA-212 on the *Bon Homme Richard*, CVA-31, during deployment to the Vietnam theater of operations and the A-4F with VA-212 still on board the "Bonnie Dick" for the 1968 deployment to Vietnam. Our standard bomb load was six MK 82s on TERs on stations 2 and 4, and two MK 81s on stations 1 and 5, the outboard wing tip stations.

We carried a single center line drop fuel tank on station 3. VA-76 was with us on the 1967 cruise, flying the A-4C. Their standard load was six MK 82s on a centerline MER, with two drop fuel tanks on the two wing stations.

So, in our versions of the A-4E, and F, we routinely loaded MK 82s on all three stations of the TER, with both snake-eye and conical fins, and had no problem with landing gear door clearance.

Very Respectfully,
Steve Gray, author of *Rampant Raider, An A-4 Skyhawk Pilot In Vietnam*

(Ed. note: Dave Dollarhide's answer to Steve Gray's letter above unleashed a torrent of comments and opinions. We offer this email chain in lieu of publishing other Letters to the Editor.)

Dave Dollarhide responds:

Thanks for sharing that personal experience, Steve. I don't dispute it at all. In fact, I learn things all the time and find it fun to do so after so many years since my Navy Skyhawk days.

My comments come partially from my memory, which often comes under the title of, "Did I dream that up?" However, we also received a lot of feedback on this Trivia piece that corroborated the gear door clearance issue

(would be great to have a TAC Manual). We also received several photos.

My answer was in response to that input, but I don't dispute your comments, as some things were not done in accordance with manuals, but because they worked. Maybe 212 did it, simply because the clearance was small, but it actually cleared the door...one of those operational necessity events. In another example, I'm told one squadron would load MK-82s on TER stations outboard of the gear door, then hang a MK-81 next to the door. They used the MK-82 mil setting and let the MK-81 go its own way when released.

Might you have any photographs of three 82s on a TER? We could publish it in the letters to editor section as a rebuttal to my conclusion.

Thanks again for your input,
Dave Dollarhide

Dave Dollarhide follows up with Steve Gray:

Steve,
Bill Egen points us to our incredible website. I don't even recall seeing this page, but there is a lot of A-4 ordnance info there. <http://a4skyhawk.info/article/skyhawk-ordnance>

The applicable paragraph is below. Is this the gospel? ...don't know but it at least takes us back to the conventional wisdom thing. The fun part of this piece of history is what some squadrons actually did, as you experienced.

"A MER placed on the Skyhawk's inboard wing stations could not utilize the front inboard side of the rack for anything bigger than a Mark 81 because of the close proximity of the Main Landing Gear doors. Since each size bomb had its own trajectory, the "mixing" of different size bombs on the same rack did not work; and since Mark 81s were not heavily used, that front-inboard station was usually empty."

Steve Gray responds:

Roger that, Dave, but the article states that if a MER is placed on the wing rack the inboard station could not

be used. It doesn't state for a TER. We only very rarely carried MERs. I had exactly one mission where we were tasked to put maximum bombs on a suspected bunker storage area. We were loaded with a centerline MER with six MK 81s; two TERs on stations 2 and 4, with three 81s each; and one MK 81 on each parent rack stations 1 and 5 for a total of 14 MK 81s. Since we were internal fuel only, it was a must tank mission, which is why we rarely did max bomb missions. I also had a few where we carried max MK 83s. So the question still remains. Thanks for directing me to the ordnance link on the website. This is fun!
Steve

Steve then sent the question to Peter Mersky, who forwarded it to John Kuchinski (who flew A-4Cs with VA-94 67-68) and Denny Sapp (who flew A-4Fs with VA-55 71-72) with the following replies:

From John Kuchinski to Peter Mersky:
Peter,

I can't say I distinctly remember about 3 Mk-82s on the TER with A-4E/F but am thinking.... Yes, we probably did. But don't think I would dispute Dollarhide if he says there wasn't enough clearance between the gear door and an inboard 500-pounder on the TER. "Hide" was still flying the aircraft until recently, and he probably would know for sure. Somebody probably has a photo of an E/F with bombs on a TER. It will appear soon so then we'll know.
John

From Denny Sapp:

I have published several 8mm videos that I took from '70-'72. Dave loaded them in the Skyhawk video postings, plus they are available on Youtube. I also have a Blues video from '75, both from inside and outside the cockpit. On the Vietnam videos, many times the jets are shown with 6 Mk 82's on the 2 TERS.

★ TAPS ★

For lists of A-4 KIA and operational losses, members can sign into <http://a4skyhawk.info> and go to the "Ready Room."



Charles L. Carroll, II, Orleans, VT, 5/11/2017
Todd Eikenberry, Lewisburg, OH 5/7/2017
CAPT Zebulon Knott, USN (ret), Arlington, VA 6/4/2017
RADM James M. Seely, USN (ret), Haymarket, VA 6/14/2017
CAPT John E. Wasson, USN (ret), Corpus Christi, TX 5/11/2017

TAPS notices may be sent to Bob Hickerson, Journal Editor at sa-journal-editor@a4skyhawk.net or mail to Bob Hickerson, 1222 Balcones Drive, Fredericksburg, TX 78624

Yes, we carried 3 MK 82s on a TER on stations 2 and 4 with no problems. I think we had to eject the TER if the gear doors did not close.

2nd email from Sapp:

You know, I was wrong on the previous email about the load-out. I now remember that we only carried 2 MK 82s on the TER and a MK 82 on stations 1 and 5.

I also looked through my photos and came up with a few that appear to show A-4s, particularly Marine A-4Es, with bombs inboard on the TER, but I can't be sure of the Mk. I've attached a few for your own check. Perhaps it was left to the CO to determine individual squadron policy. So, maybe you and Dave are both right..?

Steve Gray responds back to Dave Dollarhide:

Dave, I am attaching a series of photos sent me by Peter Mersky. It still does not definitively answer the question, but there is a picture of two VA-163 A-4Es carrying eight bombs with three on the TERs. I just can't tell if they are all MK81s or just the parent rack bombs are 81s with 82s on the TERs. I sure hope someone has a picture of an A-4E loaded the way I remember!

Regards, Steve

Dave Dollarhide replies to Steve Gray:

Since we don't have a Tactical Manual, there will be no absolute answer here, but it's fun to dig through

our memories and the photos we've accumulated. I've only included Peter's photos that I've cropped, the only evidence we have along with my similar photos. It doesn't matter who is right or wrong, but that we're able to take a fun trip into the past.

I'm not saying you're incorrect at all. We just haven't run across a MER/TER photo with an 82 on the inboard station. Like I said, this trivia final answer does not have to be definitive, and that's just fine with me. It's not the destination, but the trip...

It would really be fun if we found a photo of three 82s on an inboard mounted TER.

Steve Gray responds:

I would very much like to see these conversations in the Journal, and you may use any quote from me that would be helpful in the discussion. If after

I can get no supporting evidence and the "consensus" agrees with no 82s on the inboard TER station, then I'll have to admit I must be getting senile. But, grasping at straws, I wonder since I'm 74 pushing 75 if most of the respondents are of the younger Scooter community and could there have been some directive that changed the policy after I left the A-4? Anyway, it's still fun to dig through old memorabilia to see if I can prove fallible memory.
Best to all, Steve

(Ed. note: we'll try to get this discussion and Peter Mersky's photos up on the Skyhawk Association home page. Everyone is welcome to join the discussion!)

**MK 81s or 82s?
Photo via Peter Mersky.**



Send your letters to sa-journal-editor@a4skyhawk.net

Heinemann's Hot Rod

By John Golan

This article originally appeared in the January 2015 issue of Aviation History Magazine, and is reprinted here with permission from the publisher. For subscription information, visit Shop.HistoryNet.com or call 1-800-435-0715. <http://www.historynet.com/heinemanns-hot-rod.htm>



Ed Heinemann with the XA4D-1 prototype at the rollout ceremony in June 1954.

In a world where the focus seems to shift daily from one technological wonder to another, the value of solid engineering—a design well thought-out and well executed—is too often overlooked. This is as true in jet aviation as it is anywhere else. Today more than ever it's important to reflect on the work of pioneering aircraft designers, to better understand just what it takes to make a truly great airplane, then and now.

Ed Heinemann was once named by maverick designer Burt Rutan as among a handful of engineers who were the “pioneers who provided my inspiration.” I first came to appreciate Heinemann's genius years ago as a young aerospace engineer, while I was conducting bench-marking studies for range and payload across a number of jet designs, the Douglas A-4 Skyhawk among them.

It's easy to underestimate how phenomenal an accomplishment “Heine-

mann's Hot Rod”—as the A-4 became known—truly was. By the time Heinemann conceived of the design, he had already proved his mettle with more than a dozen aircraft, leaving his distinctive imprint on virtually every fighter, strike aircraft or experimental airplane to come out of Douglas during the 1940s and '50s. From the SBD Dauntless, which was instrumental in turning the tide at the Battle of Midway, to the experimental D-558-2 Skyrocket, which in November 1953 enabled Scott Crossfield to become the first man to fly at twice the speed of sound (see “Skyrocketing Through Mach 2,” January 2014), Heinemann's team of engineers was a breed apart.

Known widely as “Mr. Attack Aviation,” Heinemann himself never completed a formal degree as an engineer. He rose through the ranks, first as a draftsman, then as an apprentice to and colleague of other legendary aircraft designers—Donald Douglas, Jack

Northrop and Howard Hughes among them—before finally becoming Douglas Aircraft's design engineering chief. He had learned engineering on the job, hands-on, and was widely recognized for his natural talent.

When the U.S. Navy first approved Douglas in January 1952 to design a new carrier-based strike jet, capable of carrying a 2,000-pound payload up to 300 nautical miles, with a maximum speed of 500 knots and a maximum takeoff weight of no more than 30,000 pounds, Heinemann confidently predicted that he could deliver the requested range and payload in an airplane that weighed less than half the Navy's requirement, and with a top speed 90 knots faster. What he proposed seemed impossible—an airplane too good to be true. And when the Navy nonetheless signed a contract putting Heinemann's confidence to the test, Admiral Thomas S. Combs emphasized in no uncertain terms that the strike jet was expected

to meet all the Navy's objectives, and that it also “absolutely must not exceed one million dollars per copy.” As time would prove, Heinemann's team delivered on every one of those promises: range, payload, takeoff weight and cost.

How did Ed Heinemann succeed in doing what the experts of his day had not imagined was possible? Some new super-secret alloy? A secret engine? No, nothing so elaborate. Heinemann succeeded by applying the first principles of engineering and by merciless attention to detail. Every aspect, every element of the airplane was scrutinized to reduce weight. Every unnecessary redundancy was challenged.

After considering a sweptwing design, as was fashionable at the time, Heinemann's team at El Segundo, Calif., selected a delta-wing configuration with a span short enough to avoid having to fold the wings to fit on a carrier deck. It also provided for maximum wing-root thickness, stiffness and fuel

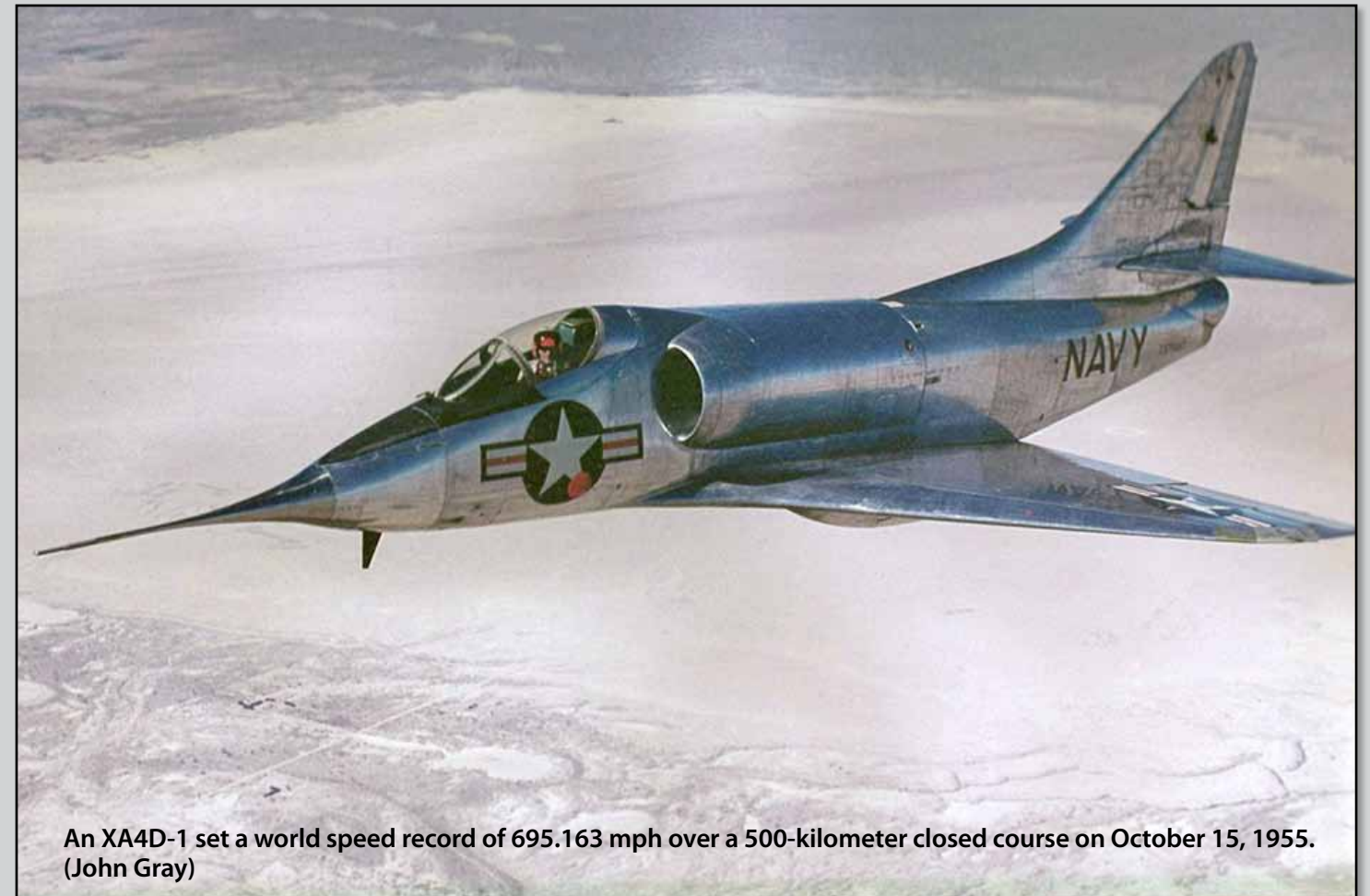
capacity. Eliminating the wing-folding mechanism alone saved an estimated 200 pounds. The airplane's black boxes, including the communications, navigation, IFF and power supply systems, were consolidated into a single unit, for a weight savings of some 40 pounds. The Skyhawk's ejection seat was similarly redesigned to eliminate a third of its parts, coming in at 58 pounds below the original weight estimate—less than half what the standard Navy ejection seat weighed. And when the subcontractor assigned to design the air conditioning system showed up at Heinemann's door with a unit that was 20 pounds over target, he was told to come back when it met the required weight. The air conditioning unit eventually came in at 5 pounds below the weight that Heinemann's team had allotted for that system.

When the first XA4D-1 rolled out of the assembly floor, it weighed 7,896 pounds, more than 270 pounds below

the target empty weight that Douglas had signed up for. And when the Skyhawk finally reached production, the first 500 airplanes would cost an average of \$860,000 each, well below the Navy's \$1 million upper limit.

Ed Heinemann's guiding principles—simplifying every component to its bare minimum, combining functions into fewer components and designing direct load paths that maximized structural synergy—were reflected throughout the airplane. The main landing gear, for example, was anchored directly into the main wing spar, providing a straight load path between landing gear forces and the airframe. The main wing spars themselves were machined from a single forging, eliminating the need for fasteners between spar elements. And the skin of each wing was formed from a single sheet of aluminum, again eliminating the need for extra fasteners and maximizing structural strength.

continued...



An XA4D-1 set a world speed record of 695.163 mph over a 500-kilometer closed course on October 15, 1955. (John Gray)

The XA4D-1 first flew on June 22, 1954, with the last production aircraft rolling off the assembly line in February 1979. A total of 2,960 Skyhawks were produced during those 25 years. Heinemann's team had shown the same dedication to simplification inside the cockpit that they had displayed throughout the structural design, reducing instrumentation by roughly two-thirds compared to the F3D Sky-night that had preceded it. As one pilot said of his first A-4 flight: "It scared me to death for the first half hour. I kept looking around the cockpit for something to do. But it was so simple to fly there really wasn't much to do! I merely got in, started up, took off and enjoyed it."

Despite its diminutive size, the Skyhawk quickly demonstrated its ability to carry far larger bombloads than the 2,000 pounds that the Navy had specified. Beginning with the A4D-5 (later A-4E) model, the external stores stations were increased from three hardpoints to five, upping external

capacity to 8,200 pounds. The A-4E also introduced the Pratt & Whitney J52 engine, increasing available thrust from the 7,700 pounds of the original Westinghouse J65 engine to 8,500 pounds in the J52-P-6A. Later versions of the J52 produced even more thrust, eventually culminating in the A-4M/N models' J52-P-408, which produced 11,200 pounds of thrust and increased the external weapons load to some 9,155 pounds. Not bad for a "light attack" jet. None of these later upgrades would have been possible, however, without the sound foundation established by Heinemann and his team so many years before.

To appreciate just how good the structural design of the A-4 really was, it's useful to compare its empty weight to its maximum takeoff weight on a logarithmic basis (see chart, P. 33) (*Chart not included, Ed.*). Comparisons like this are routinely used in conceptual design, to gauge how heavy an airplane will need to be to perform its required mission. Drawing on the published

literature, and comparing the A-4 to its peers across decades of jet aviation, it is readily apparent that the Skyhawk far exceeded the maximum takeoff weight that was considered the norm for a fighter-bomber of its size. When viewed in this fashion, only a handful of strike aircraft, developed decades after the A-4 and with the benefit of composites and other structural technologies unavailable when it was designed, would actually exceed the standard the Skyhawk set.

The A-4 formed the backbone of U.S. Navy and Marine Corps close air support and strike capabilities throughout the Vietnam War. Navy Skyhawk squadrons made 107 cruises to Southeast Asia, as compared to 84 for the F-4 Phantom. Assigned to the most dangerous attack missions, the Skyhawk also racked up the most combat losses, though only one fell to an enemy MiG. All the other losses were attributed to groundfire or SAMs. The Skyhawk also flew into battle with the Israeli Air Force in the course of three wars. Stunningly

nimble when stripped of its bombload, it would serve for decades more in the adversary units providing opposition for the Navy's "Top Gun" air combat training program. And in 1991—nearly 40 years after the first prototype flew—the A-4 would again serve in combat during Operation Desert Storm, as part of the Kuwait air force. The last TA-4 was not retired from active Navy service until May 2003, a testament to the enduring legacy of Heinemann's design.

It has been more than 20 years since I graduated with my degree in aerospace engineering. I've worked on many exciting programs, using materials that were not even envisioned when Ed Heinemann drew up the first plans for the A-4, and applying computer design tools that were never imagined in his day. Yet I still look back with admiration at what Heinemann and his El Segundo team accomplished. There are things I learned from the A-4 that I've carried with me throughout my career.

First, an airplane that is truly devoted to its task, whose design is not diluted by extraneous objectives, can achieve much and exceed all expectations. Second, I learned to be impressed more by results and less by titles. Heinemann's skill and experience was worth more than a roomful of degrees. I also learned that big solutions begin with little thought experiments, sketched out on small pieces of paper. As Ed used to remind his staff at El Segundo: "Paper is cheap! When beginning a project, sketch out all your ideas and concepts. Dream a lot. Let your mind freewheel. You can't go wrong, no matter how many sheets you fill out and toss into the wastebasket." And above all, he understood that engineering is a team sport: "Aircraft development is an evolutionary process. What flies today is an outgrowth of what flew yesterday. The knowledge of aeronautics has flowed from a wide range of sources, and designers benefit from the efforts of others. No single person could do it all."

The A-4 was a remarkable achievement that served the U.S. and its allies well in wartime and peace. As Heinemann himself wrote: "I believe that the aircraft's most significant contribution revolves around how it proved that with diligent engineering, hard work, and continuing cooperation between builder and buyer, wonders can be worked. Wonders that last a very long time."

Engineer John Golan has worked in the U.S. aerospace industry for more than two decades as a designer, structures analyst and engineering manager on a variety of civil and military jet propulsion systems. For further reading, he recommends: Douglas A-4 Skyhawk, by Jim Winchester; Ed Heinemann: Combat Aircraft Designer, by Edward H. Heinemann and Rosario Rausa; and Aircraft Design, by Edward H. Heinemann, Rosario Rausa and K.E. Van Every.



USS Coral Sea's catapult officer gives the signal for a bomb-laden A-4C of VA-153 to launch off North Vietnam's coast on March 24, 1965. (U.S. Navy)



A TA-4J Skyhawk of VC-8, which served as an adversary squadron in the U.S. Navy's "Top Gun" program. (José M. Ramos-Navarrete)

MCDONNELL DOUGLAS SKYHAWK TA4J 156925

By Doug Matthews

Despite being a USN F-4 instructor, Doug Matthews always had a soft spot for the A-4. While stationed at NAS Miramar during the latter part of his USN career, he bagged A-4 stick time in the local instrument training squadron (VF-126) between flights instructing F-4 crews in VF-121. At the same time, as a CFI, he was building civilian flight time instructing in the Miramar Aero Club, flying his Piper Twin Aztec and flying charters in a buddy's DC-3.

Leaving the service, He began a flying career with the airlines and started a business, the success of which allowed him to leave the airlines to indulge his passion: collecting, refurbishing and flying historic aircraft. He wanted to fly all the WW II fighters (from any country)

and with a few exceptions, he has. Not to neglect the Korean-era fighters/jets, he has a P-80/T-33, F-86 and now an A-4 (TA-4J), each with its own “endearing qualities.” Kept busy running his company (see www.classicfighters.org), he performs regularly in air shows. A recent project has been the ground-up restoration of TA-4J 156925. That story follows.

RESTORATION

An ex-USN A-6 Intruder friend flies the WW II birds with me, and we got to talking one day in the spring of 2015 about a TA-4J project that might be available for purchase. We reckoned that we could either keep it and fly it, or sell it to other collectors or one of the two companies using A-4s for government contract work.

BuNo 156925 was delivered in Long Beach in August 1970 and assigned to the USN training command. It was assigned to VT-22 in Kingsville for pilot training. In June 1974, it was reassigned to VT-86 Pensacola for flight training NFOs destined for F-4s and A-6s. A BuAir July 1991 report indicates 8751 hours, and 5629 landings with 69 traps. More importantly, it had a low-time engine and the airframe had very few traps, a keen measure of airframe fatigue. We don't know where the plane was from July 1991 to June 1997, when it was sold to an individual.

After some negotiating, we acquired the bird in the summer of 2015. BuNo 156925 had been in a 9-year restoration when the then owners

decided to sell it. The aircraft had been reassembled after delivery to them and had perhaps 85% of a total restoration completed over many years.

Fortunately, I have a restoration shop in Florida where we have a great group of jet mechanics and technicians, with lots of ex-military jet experience. This background included a restoration of an A-4C to flying status, so I was confident my team could resurrect a TA-4. It took us sending a team of four men on two three-week trips to Kansas to get the plane into a ferry-capable condition. It seemed that every system needed attention and fixing. Luckily, and as planned, the engine (Pratt J-52 P-8) was low-time and strong. After lots of effort, we were ready for the ferry to Florida. The plane had only one radio and a TACAN, and we had to have clear weather VFR. So, we sent along a chase plane to transport the maintenance techs and be the “pathfinder.” It was an uneventful trip, the best kind, and with no new gripes! At each fuel stop (clean bird with no drops), we attracted a lot of attention of course. You don't see any A-4s flying these days. The gawkers at the fuel stops fell into two categories: a rare ex-USN tactical type who reminisced or the folks under 50-years old who wondered if this was a new jet type! Fuel stop planning included confirmation of a working huffer unit.

Arriving at my shop, we started a long list of items to address. The state of restorations of ex-military aircraft when owned by collectors these days sets a high standard. Typically, a restoration means the plane will be rebuilt from the ground up, like new when done. We addressed each system, looking at every component's status and the integrity of that system. Everything but weapons systems had to work perfectly. We obsessed over the cockpit a lot. It looked, well, “authentic!” Weathered and original, not at all what a “new plane” would look like. Not to mention the AJB-3 system. It had quit working and the repair estimate was truly attention-getting. I wanted to duplicate the thrill of flying but not the safety record! A single repair, notwithstanding the time it would take, would finance a large part of an all-glass panel for both cockpits! I set about redesigning the cockpit. Needed systems controls could not be easily moved (landing gear handle, flaps handle, spoiler control, tailhook lever, etc.). System gauges and all flight instruments were up for grabs and were all addressed. All gauges were removed and sent off for refurbishment and calibration. Fuel-flow gauges, as well as the FF transmitter were toast (inop). We had to locate replacements. We had to engineer a new set of Garmin flight instrument glass (EFIS) displays for both cockpits.

The exterior had the appearance of an aircraft in good condition and was painted in what appeared to be green primer paint. This was a great relief as we wanted to avoid the time and cost required for a complete strip and paint. But as we started to work on the plane, we quickly found that the green primer was really a preservative coat. The plane would have to be completely stripped and painted! This meant removing flight controls, stripping and then priming, and applying multiple coats of paint. It also meant that all maintenance and avionics/cockpit work had to be suspended.



Back to the books. Photo via the author

Then we had to decide on the scheme. We narrowed it down to three “finalists” in a months-long beauty pageant:

1. A tactical scheme, maybe grey camo or something from the Vietnam era;
2. Training command colors-the orange looks great, and we would replicate the scheme it had in USN use;
3. A non-tactical scheme like when they came from the factory or at times other than Vietnam.

To my knowledge, the “T” had not seen combat with the Navy in SEA, so I wanted to stay authentic. The last thing I wanted was to have the bird on display at an air show and have a veteran walk up and say, “Hey, this never served with VA-xyz!” We ended up with choice #3 and marked it for my friends at VF-126 at Miramar.

The cockpits ended up being a major undertaking, requiring complete gutting and refurbishment. Both ejection seats were removed and themselves refurbished by others. Then fabrication of new instrument panels and wiring the installation of modern avionics. It looks, well, really swell! These new Garmin EFIS units have stuff I would have killed for in the 1970s: enroute charts, sectional maps, navigation data, approach plates, airborne traffic info, weather (enroute and airport), airport details (gosh, no enroute supplement?), and.....synthetic vision!

continued...



Not your grandad's A-4 cockpit! Photo via the author

After all work was completed, we had the inevitable ground runs and system checks. A huffer unit had to be acquired. Once we were confident that we had a safe aircraft, we received our FAA ferry permit to fly to an FAA inspection site. Always having been a military aircraft, we now had to have the plane certificated in an FAA status for us “civilians” to fly. Our local A-4 jock flew her away, and she passed with flying colors. 156925 returned looking great and with an FAA certificate!

Then, the two of us put ourselves through a vigorous NATOPS course! Study, books, charts, NATOPS, etc. For the final exam, an ex-USN A-4 qualified FAA examiner was brought in for our check rides and licensing. Old friend Rick Millson was a well-known A-4 driver and ex-Blue Angel. Now, an FAA examiner, he put us through the ringer, but we passed and got our tickets to go out and scare ourselves!

We then started an extensive flight-test program to check out all functions and the new flight instrumentation. Verifying the weight, we were sure to cross check the airspeed indications with the angle of attack system in both cockpits. The fuel system kept giving us problems. First, we replaced the transmitter, then both fuel flow indicators. Then the fuel quantity system had to be reworked. The fuel quantity for externals had been cut somewhere and we ended up rewiring that system. There were minor glitches in each system but all were fixed.

156925 performs flawlessly! We have flown her maybe 10 hours without external stores and just internal fuel. She comes off the runway with enthusiasm for sure! You have to have a steep deck angle to avoid exceeding the speed limit we suffer as “civvies!” At level off under 10,000’, we quickly come way back on the throttle to stay under 250 knots. The bird is very responsive in

all axes, especially roll! On my second flight, I went to a safe area out over the ocean and above 10,000 feet to go through the aerobatic routine I use in the F-86 for air shows. It is great to be able to do a loop at partial power!

I later added landing practice and simulated instrument approaches. The bird runs great! 17 units to a “carrier landing,” cushion the touch down with just a bit of power. Of course, we honor the NATOPS guidance on cross-wind and wet runway ops.

Soon we will add our just-found external drop tanks. Two 300-gallon tanks for travel, but more importantly in case we suffer a landing gear malfunction. “Jumpin Jehosaphat, what were these guys thinking with no drops!” Well, Grampa Pettibone never had to sit looking at a beautiful bird ready to fly while searching for months for two good drops! We actually found a third good drop so we may end up with a blivet.

There are now five privately-owned and flown Scooters—an A-4B, an A-4C, and three TA-4Js. Plus there are maybe two dozen single and two-seaters with the two companies operating with government contracts.

Now, if I could just find tanker assets and get a few plugs!

About the author: Doug Matthews is a USNA ’67 graduate and ex-USN F-4 back-seater. He has 18,000 hours and is rated as pilot and instructor in seven large and corporate jets, several ex-military jets and nine WW II era fighters. His favorites are the F6F Hellcat, the F8F Bearcat, the F4U Corsair, the P-51 Mustang, the F-86 Sabrejet, and of course, the A-4.

(Ed. Note: you’ll see more about this beautiful restoration in future issues. In the meantime, for a real treat, see the video at <https://vimeo.com/192166719?ref=em-share>.)



In full livery, looking like the TA-4 we wish we had flown. Photo via the author.

Weapons:

Memories of the weapons we used in 1967

By Boom Powell

(stuff not found in the manuals)



2.75" FF rockets: FF for Folding Fin. Four stabilizing fins were supposed to open as the rocket left the tube. If one did not, it would spiral outwards heading who-knows-where or collide with another rocket. Out of any 19-shot pack one or more would usually malfunction. Dick Stratton, who became a long-time POW and subject of the famous “bowing” pho-

tograph, was downed by an errant 2.75 inch rocket. They were fun to watch—when your life was not at risk. Used for Flak suppression until the CBU arrived.

CBU-24: an early model Cluster Bomb Unit. A streamlined clamshell filled with grapefruit-size bomblets. A nose fuse opened the halves a set interval after

release flinging the bomblets out. The bomblets armed by spinning and exploded on impact into hundreds of high speed fragments. (We were definitely not allowed to bring CBU's back to the ship.) Because the A-4B and C had only three racks and the center usually held a fuel tank, the technique for using the CBU-24 was to preset one fuse 3 seconds shorter,

TINS!*

By Bill “Jigger” Egen

(Ed. note: in an email to Bill Egen, Barrett Tillman introduced the term “Hell Jelly” as a nickname for napalm, reporting that the decision-makers in Washington didn’t want the evil Hell Jelly used in North Vietnam. That prompted this narrative from Bill.)

Ah yes, the evil Hell Jelly (first time I have heard that expression). I got lots of education in and out the cockpit on napalm. We put many a MK-77 and MK-79 (1000lb nape) on tree lines in front of Con Tien in Nov '67. North Vietnam was also in front of Con Tien, so I guess we violated some rule. After Tet '68 quieted down, I was on an emergency divert from Ashau Valley to a Marine recon outfit in the hills just to the west of Quang Tri. They and a NVA outfit, were on opposite sides of a ridge line throwing grenades at each other. Nape was the answer given the danger close possibility of fragging the good guys. Lead and I put jelly on the north side of the ridge and eventually the recon guys were extracted - good lesson. Much later on in the early 80s I was at Headquarters Marine Corps, and we had to write the duty letter every year to CNO requesting that napalm and rockets be included in the Non-Nuclear Ordnance Requirements (NNOR) drill. (I was the HQMC rep to the NNOR). Bill Newman, OP-507, hated nape and rockets and wanted their procurement suspended. A few lessons learned about utility of those weapons (CV issues



Napalm in action. Photo taken from a Dave Dollarhide 8mm movie.

notwithstanding) kept us in the business, but you could not use dive angle, speed, mil setting, etc. to convince anybody you could hit something with nape. It was a tumbler, and it had a ballistic accuracy that was off the charts. The computer always rejected it regardless of the short time of fall. The good thing was that you could scare a good guy and wipe out a bad guy!! They were used in Desert Storm, but they were called Fire Bombs so as not to offend the future snowflakes!! We called Snake and Nape “soft ordnance” regarding proximity to troops. We also used MK-77 cans to carry CS gas (tear gas riot control agent) and left many a smoke trail in the jungle and in the caves (at least that was the theory). My last boss at McDonnell Douglas Douglas/Boeing was Bill Westerman, and I believe he got bagged dropping nape from an A-6 on barges in close to Hai Phong early in the war - not sure that one was weaponized right.

arm only one side rolling in, pickle on target, lunge down and arm the other side, pickle again. Pulling off target you could look back and watch a ring of explosions build, then a second ring which overlapped and filled in the hole, knowing that within that figure-eight pattern the casualty rate was 90%.

Bombs: After a period of high-drag, fat bombs that were left over from Korea, the Navy settled on the Mark 80 series. The catch was, there were not enough high-speed tailfins available so they were usually fitted with *Snakeye* fins. The *Snakeye* fin was designed to retard the bomb for low altitude drops. The Marines used them down south during close-air-support missions, but there was

no need for them up north. (Survival rule #1: NEVER fly below 3,000 feet—the range of shoulder-fired guns.) Heavy, draggy and complex they were wired closed and dropped up north... because they were all we had.

Cannon: ECM (Electronic Counter-Measures) was vital to staying alive in the radar heavy environment over the North. Before leaving the states all Skyhawks had a *Shoehorn* modification which installed warning and jamming equipment. Small ice-cream-cone antennas were installed at nose and tail and to make space for the “black boxes”, the ammo cans and one of the 20 millimeter cannons were removed. The one remaining gun, with only 40 rounds, was prob-

ably only of psychological value—desperate coverage of a downed aircrew or the A-4 driver’s favorite fantasy—a MiG kill. (The single MiG kill by an A-4 was scored using rockets.) A shack-like structure on stilts off the coast was frequently strafed to check your gun and aim. Since maritime aids were on the no-no list, gunfire from the shack was always claimed. A battle tank could not have survived the number of cannon shells put into that wood structure—which gradually grew shorter.

(Ed. note: this story was first published in *Flight Journal* (subscribe at www.flightjournal.com). Used with permission of the author. Photo via Skyhawk Association.)

LIGHT ATTACK REUNION

REPORT BY DAVE DOLLARHIDE

One of the most enjoyable things we can do is to renew friendships from our past years in the Light Attack community. That was the primary goal at the March 11th Light Attack Reunion at Haller Air Park, FL, home of the Dreamland Squadron, of which I'm a member. We hosted both A-4 and A-7 folks in support of the two Associations, and what a party it was, starting with members of our old man's squadron zooming around in our "weed whackers" before almost 180 attendees. The up and coming U.S. Military Air Power Museum surprised us by showing up with a beautifully done A-4B cockpit to add to the fun. The catered barbecue was spot on.

As stated by Mike "Carlos" Johnson, "I really do not know how it could have been better: airplanes roaring by in formation, lovely ladies, great friends, many of our personal heroes, wonderful sea stories, delicious food and cold beer."

Skyhawk Association members are encouraged to host your own gatherings, small or large, and we'd love to hear about it so we can share your experience with others.



Last Few Words of the Dinner Prayer

by A-7 Pilot Luke Memminger

Oh Lord,
We thank you for this gathering of men,
Who braved the challenges of flying single engine jets from ships at sea,
Your mighty warriors, of Liberty and Freedom.

Lord, we pray that you will bless this food, and bless our fellowship,
in Your Holy Name,
Amen



Skyhawk Losses

~ The Mission Continues ~

by Gary Verver

BZ to VA-163 Ed Copher and Ed Chadwick for resolving all of the unknowns associated with the Saints. Unfortunately the Grampaw Pettibone losses highlighted in the last issue didn't get out of the chocks, much less off the ground.

VA-44 heads up the list of losses needing who, what, where and why information with a total of 22. Six of these losses occurred in less than a year ... surely someone recalls something about this string of losses. Probably some commonality to them: A-4A BuNo 142195 on 20 August 1958, A-4A BuNo 142197 on 19 February

"Six of these losses occurred in less than a year ... surely someone recalls something about this string of losses. Probably some commonality to them."

1959, A-4A BuNo 139932 on 25 March 1959, A-4A BuNo 139921 A-4A BuNo on 24 April 1959, A-4A BuNo 142213 on 01 May 1959, and A-4A BuNo 142193 on 09 July 1959.

One of the open VA-195 losses occurred 27 November 1961 when an unknown pilot temporarily attached to VA-195 was killed when he crashed in an open field 2 1/2 miles northeast of NAS Atsugi. Don "Gamera" Chan reports that it crashed near civilian house, 3 Choume, Hongou, Seya Town, Totsuka Ward, Yokohama City, Kanagawa Prefecture. Per the Pacific Stars and Stripes, "A Navy pilot killed in the crash of his A4D Skyhawk near NAS Atsugi Monday apparently gave his own life to keep the plane from crashing in a heavily populated area. Preliminary Investigation indicated the pilot could have ejected from his plane at a safe altitude, over the heavily populated area, the Navy reported. However, it appeared that the pilot headed the plane for an open field and ejected at an altitude that did not give his parachute sufficient time to open. The pilot, temporarily attached to Attack Sq. 195, was on a final landing approach when

his plane crashed into an open field 2 1/2 miles northeast of NAS Atsugi. The pilot's name is being withheld pending notification of kin." VA-195 was aboard the USS *Bon Homme Richard* at the time; however, the Cruise Book In Memoriam page doesn't list any VA-195 fatalities.

This Pettibone published in September 1977 needs the squadron, BuNo and pilot names: "During an advanced tactics support mission with two F-14's the TA-4 passed close aboard one of the F-14's commencing the final engagement and started a level starboard turn at 375 knots

and 22,000 feet. After about 180 degrees of turn the TA-4 pilot visually acquired the second F-14 at his 4-5 o'clock position. The TA-4 continued the Starboard turn into the 2nd F-14 and increased the G loading to 3-4 G's. The TA-4's airspeed dropped off to 325 knots at 21,000 feet in a 90-degree angle of bank, nose slightly low. The TA-4 almost immediately departed controlled flight with a violent right roll and negative G loading. It then commenced a high yaw rate with continued negative G loading. The pilot was forced up and forward against the glare shield while the rear seat copilot was forced up into the canopy. Perceiving that the TA-4 was in an inverted spin the pilot initiated anti-spin controls at about 17,000 feet with no apparent effect. Passing through 12,000 feet the co-pilot ejected taking the pilot with him as command ejection was inadvertently set to the back seat."

This Pettibone published in June 1961 needs the squadron, BuNo and pilot's name: "A division of A4D's were engaged

Please e-Mail Gary Verver (gp@verx2.org), or sa-journal-editor@a4skyhawk.org if you can help.



in night MLP at an outlying field and were running somewhat behind schedule when they landed to refuel. Three of the pilots remained in the cockpit during refueling and on one the plane captain noticed the fuselage fuel cell cover and cap were missing. Climbing to the cockpit the plane captain told the pilot he was refueled but his gas cap cover was missing. The pilot told him to find something to cover it up with and to hurry. Unable to find another cap he was returning to the cap-less A4D and stopped another plane captain from stuffing rags in the filler pipe. Climbing the ladder again he informed the pilot that he couldn't find a cap. The pilot had his APH-5 on and the huffer was connected and running. The pilot thought the man said the cover plate was missing and signaled he wanted to start the engine. During taxi-out the pilot informed the LSO that he had a missing gas cap and was returning to home base. The LSO said "say again," and the pilot repeated the message. The LSO then asked if he was going to fly without a gas cap and the pilot replied "affirmative." Not believing anyone would be foolish enough to fly without a gas cap and thinking he meant the fuselage cover he cleared the A4D for takeoff. During the take-off role observers saw the plane burst into flames and heard a loud explosion. As the pilot heard the explosion and saw the flames he cut the engine, braked to a fast stop, jumped out and ran for safety. Although the Crash crew promptly put out the fire the wreck may be irreparable."

FROM THE ATTIC

Mailbag



Long-time members may recognize this A-4A from our cover photo for the Fall 2009 issue. At that time, the aircraft was in total disarray and in desperate need of a complete restoration. As you can see from this current photo, that restoration was accomplished.

The aircraft pictured is actually A-4A 139968, painted to look like bureau number 142176, AJ 301. That was the aircraft of former CNO ADM James Holloway, who was skipper of VA-83 in 1958.

Posing in front of this display, which is located at the north gate of the Naval Academy, is then-Midshipman First Class David Sicher of Smith



Mountain Lake, VA, who was commissioned in the Marine Corps in June 1917. 2nd Lt Sicher will attend Basic School at Quantico, prior to reporting for flight training in Pensacola.

TRIVIA ANYONE

from Dave Dollarhide

Question?

Are these MK-87 "water sand filled" practice bomb fins mounted correctly?



Puresome Unplugged

~ YP's Excellent Adventures ~

From The Hook magazine, Spring 1993

The Further Adventures of
YOUTHLY PURESOME

by CDR Jack D. Woodul, USNR(Ret), artwork by Carl Snow



Jack "Youthly Puresome" Woodul

The Great Firepower Frab-Up

Burners belched fire and mighty jets slipped the surly bonds as the "Foxtrot" flag flapped in the 30-knot breeze that Momma Nature and the captain of the mighty carrier had arranged for the 1300 launch. Clouds of steam boiled out of the catapult tracks as chaps in gaily colored jerseys carefully choreographed the dance of the jets on the big flight deck.

It was then that the ship's engineers took the opportunity to blow stacks. A huge, noxious cloud of black gas roiled aft out of the funnels to rain cinders into the eyes of a group of distinguished looking, gray-haired, binocular-draped old farts crowded all around the ship's island and especially in Vulture's Row, the best seats in the house for today's show.

For today's mission was not merely dancing the skies on laughter's silvered wings, but a performance of great subtlety and symbolism loosely titled "Blowing Holes in the Ocean — a great many of your defense dollars at work." For these observers were Congress Persons out to observe the handiwork of their industrial constituents and "our brave, Amerricun boys." Spending the day being sucked up to on a Forrestal-class yacht, eating "chow," and watching a major-league fireworks display wasn't too bad, either.

Youthly Puresome didn't care if they were the Bayonne Bowling Club or the Minions of Zoroaster — happiness was a warm gun, and he was going to be a shooter with an audience.

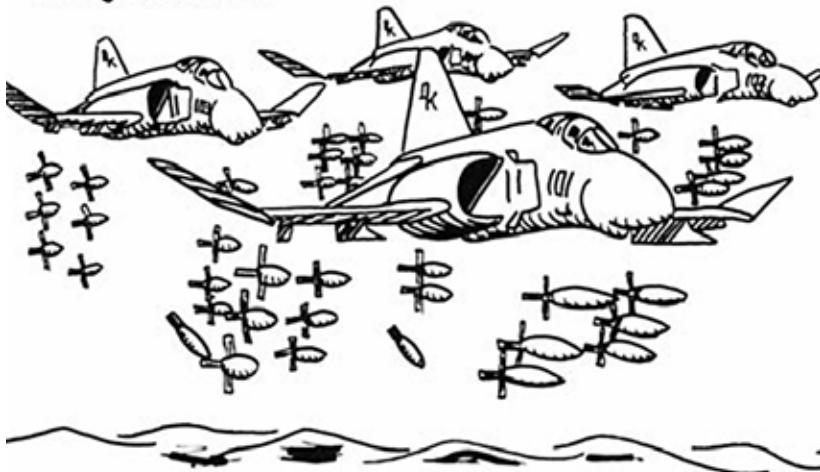
The firepower demonstration was to be awesome. A *Phantom* jet would fire a *Sidewinder* missile at a paraflare dropped by an A-4. A Scooter would do an over-the-shoulder bomb drop on a smoke light. Two *Phantoms* would make simultaneous, low-altitude supersonic runs on either side of the ship, guaranteed to cause organisms, minor losses of control and possible pacemaker interference. A daisy chain of some questionable propriety would fly by, consisting of consenting and adult tanker aircraft — an A-3 Whale, plugged by an A-6, plugged by an A-4, plugged by another A-4. And so on.

But the best part was when four *Phantoms* in diamond formation would drop a great many 250-lb. *Snakeye* bombs from a low-altitude pass on a point just aft of the ship, followed 60 seconds later by Puresome firing five 19-shot rocket packs from his Scooter at the same spot of steaming ocean.

Since timing was everything in airshows, a great deal of practice had gone on prior to the real thing. Clocks got hacked and potatoes counted, and everybody honed up for the big day. Puresome had to arrive at a 7,000-ft. roll-in point, ready to start his 45-degree dive as the *Phantom* formation crossed the wake of the ship in its bomb run.

Of course, everybody was reasonably serious. It would be bad form to punch some kind of hole in the ship, and there was a long tradition of interesting frab-ups at airshows with today offering ample opportunity to repeat. Like the photo F-8 that had done a half Cuban-eight, popping out flash bombs instead of on the straight and level. Or like numerous aircraft that smacked each other or the water. It was one thing to be dead, but quite another to look bad.

...four *Phantoms* in diamond formation would drop a great many *Snakeye* bombs...



Yaaaaa! Ace Three is hit!

But the big day was going like divine clockwork. Puresome orbited at a safe distance on the starboard side of the ship, watched the rest of the air wing do its thing, monitored the radio and waited his turn.

Finally, the flight of four *Phantoms* below moved out of orbit and started toward the ship, the flight lead shifting them into diamond formation as they dropped down for their low-level delivery. Puresome eased into high trail behind them.

The *Phantom* leader called the ship inbound and switched "hot." Puresome triple-checked his ordnance station switches "on," mode switches to "rockets," gunsight and mil-lead, and armament switch "on." He was real careful to stay away from the trigger, not anxious to send many, many 2.75-in. folding-fin rockets whoostling out before their time. Puresome hung in the air, almost at roll-in, and watched as the four *Phantoms* approached the ship.

Their diamond formation was impeccable. *Ace* lead was flying the bomb run steady and level, his wingmen glued to his airplane in their Sunday-best Blue Angel diamond formation.

"Stand by, stand by," *Ace* lead called, prepping his wings to drop their bombs on his call. Puresome rolled into his rocket run, still lagging his nose behind the *Phantom* flight slightly.

"Pickle! Pickle!" hollered *Ace* lead, and an impressive number of *Snakeyes* fell off the four planes.

Unfortunately, a couple of them had the bad manners to blow up almost immediately and Puresome, screaming down in his dive, watched fuel immediately start streaming in copious amounts from the wings of two *Phantoms*.

"Yaaaaa! *Ace Two* is hit!"

"Yaaaaa! *Ace Three* is hit!"

"Hey, neat!" thought Puresome. "Just like the Big War!" His eyes went all squinty as he guided his piper to just the right part of the ship's wake.

As the once-impeccable diamond formation deteriorated somewhat and disappeared in a haze of JP-5 and frantic radio calls, Puresome squeeze the trigger and punched 95 perfect holes in the ocean blue.

Such is life that the Congress Persons had cheered wildly. And Puresome had pulled off his rocket run and done exuberant aileron rolls off into the blue to what he hoped was thunderous applause. It seemed so real!

The two *Phantoms* made it to nearby NAS East Coast in good shape but with just enough gas to leak on the runway some.

The next time Puresome saw *Ace* lead, he told him how thankful he was to have *Phantoms* around to give tone to what otherwise would have been a disgusting display of military might. He added that the impressed Congress Persons would probably buy them a couple of new *Phantoms*.

Ace lead had adjusted his ascot and considered shifting his weapons systems to the ground-to-Puresome smack-'em-in-the-mouth mode.

"You dirty, lousy, stinky, cheaty rat!" he snarled.

"Yes," countered Puresome, well and truly adjusting his orange and black attack-puke ball cap. "Isn't it pretty to think so?"



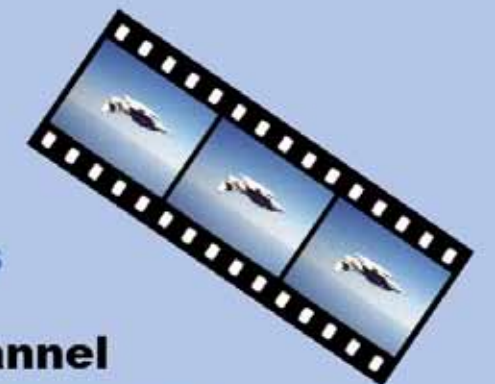
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