

# Tandem Notes

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— Phrog Phorum —

Third Quarter, 2001

## Chinook achieves two major milestones

One week after the nation celebrated the 225<sup>th</sup> anniversary of its Independence, the Chinook helicopter reached two milestones of its own—the rollout of the CH-47F prototype and the aircraft's 40<sup>th</sup> anniversary.

During a ceremony, July 11, in the Boeing Philadelphia flight test hangar, the latest version of the cargo helicopter emerged from a hazy cloud of smoke and laser lights to “greet” the U.S. Army, government officials, employees, media and generations of Chinook supporters and operators.

“We’re here today to renew our commitment to the U.S. Army by building the equipment that enables it to do its job,” said Roger Krone, vice president and general manager, Boeing Army Programs. “The work of Boeing Philadelphia people—past, present and future—means that Chinooks will serve their country for more than 70 years.”

Krone and other Boeing officials accom-

panied senior military and government attendees on a tour of the Chinook manufacturing line before the ceremony began, and spoke with employees about recent enhancements to the line and plans for its future.

“This is a results-oriented organization, and it’s getting better every week,” said Jerry Daniels, president and CEO, Boeing Aircraft and Missile Systems. “The F-model is proof of that.”

The F-model recently completed its first flight, with additional flight testing scheduled for the next several months. The tandem rotor will sport several enhancements over previous versions, including vibration reduction, improved avionics and more powerful engines. Boeing Philadelphia will configure 300, or 70 percent, of the U.S. Army’s 432 Chinooks with the new enhancements, ensuring at least 30 more years of additional

————— “CH-47,” *Cont. on Page 3*

## CH-47s assist in disaster relief



Photo courtesy Ed Blantz

A group of CH-47s from Company G/104<sup>th</sup> Aviation, Pennsylvania Army National Guard, Ft. Indiantown Gap, Pa., recently supported disaster relief efforts in New York City following terrorist attacks on Sept. 11. The unit, known as the NOMADS, has conducted several missions since the horrific event, and remain on standby, 24 hours a day, to provide further assistance if necessary. Above, one of the Chinooks carries a giant American flag over Stewart Air Force Base, Poughkeepsie, N.Y., where it delivered 15,000 MREs, or meals ready to eat, for distribution to disaster relief volunteers. The same unit later delivered 35 frame tents to Randall Island in New York City.

## Dear Chinook and Sea Knight User

Several significant events have transpired since the last issue of *Tandem Notes*. The terrorist attacks, Sept. 11, on New York City and Washington, D.C., have deeply affected everyone. They serve as an unpleasant reminder of the cost of our freedom. My thoughts and prayers are with the families who lost loved ones and the volunteers across the country helping in the recovery effort.

Military retaliation seems inevitable. Although our mission requirements are unknown, U.S. Army and Special Operations CH-47s and Navy and Marine Corps CH-46s will likely be called upon to provide their legendary services. The Chinook and Sea Knight have seen action in thousands of military and humanitarian missions since their first tours of duty. CH-47s have already supported the disaster relief effort in New York City, and National Guard squadrons remain on standby for further action, if necessary.

Work continues in the tandem rotor community despite the recent tragedy. We completed the first CH-47F prototype for the U.S. Army and are currently conducting flight tests. The F-model ensures at least another 30 years of dedicated service and solidifies the Chinook as one of the most successful rotorcraft programs in aviation history.

We’re always looking for customer-related news, “tales from the field” and photographs, so please submit them to: Jack Satterfield, Boeing Philadelphia, P.O. Box 16858, M/S P30-18, Philadelphia, PA 19142-0858. Ph: (610) 591-8399; Fax: (610) 591-2701, e-mail: john.r.satterfield@boeing.com; or Doug Holmes (same mailing address and FAX number), Ph: (610) 591-4901, e-mail: william.d.holmes@boeing.com. Keep the stories coming and God Bless America!

A handwritten signature in black ink that reads "John Gilbride".

John Gilbride  
Director, Aerospace Support  
Boeing Philadelphia

## From the Field: Chinooks give NATO a lift in Macedonia

The Chinook helicopter is a workaholic. That's good news for military units stationed in the Balkans. The venerable tandem rotor, which celebrated the 40<sup>th</sup> anniversary of its first flight Sept. 21, is giving the North Atlantic Treaty Organization (NATO) a lift in "Operation Essential Harvest"—its latest western European peace-keeping mission.

Based at Camp Able Sentry in Skopje, Macedonia, U.S. Army Chinooks, flown by the 7-101<sup>st</sup> Aviation Regiment of the 159<sup>th</sup> Aviation Brigade, Fort Campbell, Ky., have been assisting NATO with heavy-lift and other logistic support over the last few months.

The CH-47, which can lift 12 tons and reach cruise speeds of 150 mph, has been a mainstay in the brigade's arsenal for decades, supporting heavy-lift operations and transporting troops for myriad missions around the world.

"The Chinook has been and will continue to be the workhorse of U.S. Army aviation," says Pete Parsons, Chinook program manager. "The CH-47 is always ready to go to work. Since its dedicated service in the Vietnam War, it has been the unsung hero of thousands of successful aviation missions. Tough situations call for the most effective aircraft. That's one of the reasons why the Chinook will fly for another 30 years."



Photo by U.S. Army SPC Travis Bascom

*A squadron of U.S. Army Chinooks prepare for take-off in NATO's Operation Essential Harvest.*

Macedonia, which is located north of Greece and off the southeast coast of Italy, has been a hot bed of inter-ethnic conflict since it separated from the former Yugoslav Federation in the early 1990s to become a sovereign and independent state.

The purpose of Operation Essential Harvest is to collect military weapons voluntarily surrendered by ethnic Albanian rebels who have been fighting for increased politi-

cal rights in Macedonia. An agreement between the Macedonian government and ethnic Albanian political parties guarantees more rights under the country's constitution for ethnic Albanians if they surrender their armaments.

The duration of the mission is unknown. It is expected to include about 3,500 troops from 11 European nations and the United States.

## CH-47 program in for the long haul

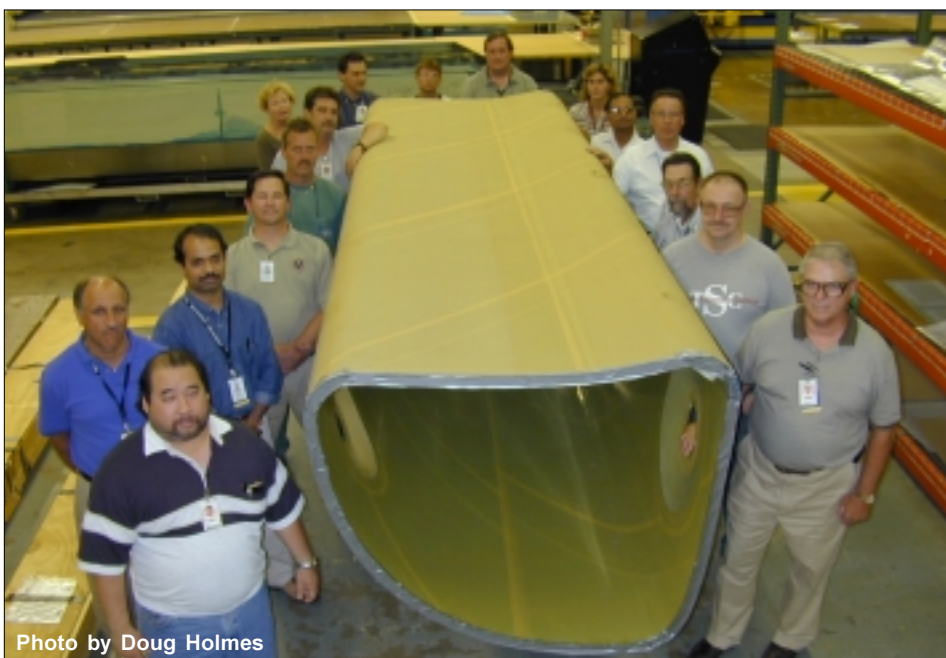


Photo by Doug Holmes

*The CH-47 long-range fuel pod team poses with its latest creation—a one-piece, single cure structure.*

Chinook customers will soon be able to fly the heavy-lift helicopter longer distances for less money, thanks to the efforts of the CH-47 long-range fuel pod team.

The Boeing Philadelphia team successfully manufactured the first production fuel pod using a new process that permits fabrication of a one-piece, single cure structure.

"We spent a lot of time discussing the new design," said Lee Kitson, project manager. "We received significant input from the Composite Center of Excellence (CCOE) fabrication and assembly mechanics since they'll work with this process every day. Employee Involvement was a key factor in our success. Everyone from program management to tooling helped make this a wise long-term investment."

The redesigned fuel pods will be avail-

— "Long range," Cont. on Page 8



Photo by Doug Holmes

*The CH-47F—the latest iteration of the heavy-lift helo—features more powerful engines, improved avionics, vibration reduction and a number of other performance enhancements.*

## CH-47 remains vital to Army operations

—Continued from Page 1

military support and solidifying it as one of the most successful aircraft in aviation history.

“This roll-out is not about a piece of machinery; it is about human beings,” explained Congressman Curt Weldon (R-Pa.), who arrived at the ceremony in a U.S. Army helicopter. “The human beings that use these aircraft—the men and women of the Army—

need the best possible equipment, the best possible training and the best possible aircraft to do their jobs. For us to be competitive and successful in the U.S. and world markets in the 21<sup>st</sup> century, all of us have to do things better and smarter to help control the costs, so we can continue to build these kinds of products for them.”

Since its first flight on Sept. 21, 1961, Boeing and its licensees have produced more than 1,000 Chinooks, and about 800 remain

in service in nearly 20 nations on six continents.

Len LaVassar—the man at the controls of the first Chinook prototype—addressed the audience about his experience with the heavy-lift chopper, and autographed CH-47 keepsakes for those in attendance after the ceremony.

“The first Chinook flight was a very good one,” he explained. “The aircraft handled well, and the fact that it’s still in service is not surprising. We’ve come a long way since then, and I am proud to have had a role in getting things started. The Chinook is an absolutely fabulous aircraft.”

Customers always know best, especially when they have flown the aircraft as much as Lt. Gen. Johnny Riggs, director, U.S. Army Objective Force Task Force.

“Any good aviator knows that the folks who build the aircraft better be your best friends,” he said. “The CH-47 is necessary and essential to our troops. Without the Chinook, we wouldn’t be the Army we are today.”

Riggs, a former CH-47 pilot who logged more than 1,000 flight hours in 10 months during the Vietnam War, detailed his personal history with the Chinook, calling it “one ugly duck,” when he saw it for the first time.

“After all of those flight hours, we became close friends; the aircraft became beautiful to me and to the thousands of combat soldiers that we supported,” he continued. “It was then, and is now, the workhorse of our helicopter fleet. If I can get someone to crank this bird up, I’ll fly it today.”

## RAF Chinooks conduct water landings

**A** British Royal Air Force (RAF) HC Mk 3 Chinook helicopter takes a break from the summer heat to perform water landings on the Delaware River, adjacent to the Boeing Philadelphia flight ramp.

After completion of flight training in Philadelphia, the heavy-lift helicopter will be shipped to its new home in the United Kingdom. The water landings are part of a four-week, RAF crew training program that includes one week of ground training and three weeks of flight training.

The CH-47 is completely amphibious, thanks in part to the watertight construction used in its lower fuselage. This capability, though not often utilized, considerably increases the aircraft’s versatility. The RAF has flown Chinooks more than 20 years to handle its troop and heavy load transport missions for the British Army.



Photo courtesy Paul Wagner



## Phrogology 101: Why are they called 'Phrogs?'

### *History of the term, 'PHROG,' for those who want to know or thought they knew.*

By John Morgenstern  
Boeing rep, HMX-1, Quantico, Va.  
Resident Phrogologist

While standing on the parking ramp in Quantico, Va., in 1965, Majors Bruce Colbert and Fritz Zander were watching the approach of an H-46A over the Potomac River, perpendicular to the runway and facing the headquarters building, when Bruce suddenly blurted out, "I'll be a (SOB), that aircraft looks like a frog from the front!"

Fritz, a great artist and cartoonist, pondered the statement, and a few days later, produced the first cartoon of the Phrog.

The term Frog was since used at HMX-1 by pilots and crew members.

#### 1967

As the H-46 Rep assigned to Quantico, I used the term Frog in one of my activity re-

ports (FSR 67-06-EE092), and on June 19, 1967, my boss, Norm Turner, sent me a memo because that term had been noticed back at the home office.

Mr. Turners' memo stated: "A couple of weeks ago much concern was expressed by Mr. Tharrington where it was learned several such colloquialisms were prominently used throughout the industry that were not particularly complimentary to B/V aircraft. As a result, word went out to consider these possibilities when naming new designs, features, etc. & to discourage current use of terms that tended to degrade the aircraft or product. I believe you can understand this logic. Please advise."

On June 27, 1967, I answered that the term "Frog" was affectionately used by HMX-1 pilots and crew, and the rationale was: It looks like a frog from the front, it is amphibious, and on top of that, it is green.

The term stuck and subsequently was spelled with a "Ph" (as in PHROG).

#### Late 1968

HMX-1 started to provide a lot of cross training for UH-1 pilots and the squadron

bought the first Phrog Phlyer Patches. It showed the Phrog smoking a big Cigar. At the same time, the Boeing Rep had some certificates made. Each was hand-colored and then presented to the new H-46 transition pilots in the squadron.



#### June 17, 1970

The Navy Times published a very small article entitled, "HMM-161, Happy in Phlying Phrogs." The article stated that a young mechanic from the squadron thought the air-

craft looked like a Frog when viewed from the front and thus the term Phrog was started.

Someone provided a copy of that article to the Quantico Boeing Rep who immediately sent an answer to the Commanding Officer of HMM-161.

**June 22, 1970**

“Dear Commanding Officer of HMM-161: With mixed emotions did I read a short article in Navy Times of 17 June, concerning the subject of Phlying Phrogs.

In mid-1965, one of HMX-1 officers named the H-46 FROG and another drew the first Cartoon, (I’m enclosing copies of the two views).

Since that time, many changes were made to the original Frog and, following my designation as Chief Phrog Herd and keeper of the Lilly Pad, this squadron, HMX-1, came forth with the first true Phrog Phlyer Patch.

This patch is presented to all transition pilots here. (I’m enclosing one patch for you). Judging from the article in Navy Times, you must have had or do have some true blue pilots from HMX-1 as I can see no other explanation for the Phrog Phlying article, as told by that young man of your fine organization, HMM-161!

As Chief Phrog Herd and keeper of the Lilly Pad, I wish you continued good luck in your operations at Marble Mountain and hope that you may get the opportunity to set Navy Times straight on the subject of Phrog Phlyers.

*Signed: John Morgenstern*

*Chief Phrog Herd and keeper of the Lilly Pad”*



265 aboard the USS Okinawa (Carib 3-65), many pictures were drawn by maintenance personnel showing a CH-46, which looked like a toad.

There were versions of a toad with its mouth open, gobbling up parts with broken pieces coming out of the ramp. Or, a H-46 toad in the water with an outboard motor tied to the ramp with the caption: “We will take all aircraft back to Onslow Beach after the cruise.”

Aboard the USS Sylvania (AFS-2) in the Mediterranean, a plaque was mounted next to the entrance door of the H-46—showing a mixture of frog and toad, wearing a baseball cap and swinging a bat. (Though it had no caption, it meant to the crew “we’ll play ball.”)

Way back in 1967 after I was questioned about the term “Phrog” by my Boeing home office, Fritz Zander—the artist and cartoonist—made copies of his first Phrog cartoon and sent copies to Boeing’s Charlie Wyatt at Flight Test, to Wally Hanks, the supervisor of Reps at Boeing Vertol, and to New River, Santa Ana and Norfolk.

Since those early times, the term “Phrog” has stuck for good and even Boeing and Cherry Point made patches and embroideries of Phrogs on shirts, posters, etc.

How appropriate, as the good ol’ reliable Phrog soon will become 40 years old!



**Summary**

It appears that others in the H-46 community also thought the H-46 looked like a frog.

During my first deployment with HMM-

## *From the Field: Big Windy teams up with HMX-1*

In support of the July 2001 presidential mission to London, VH-3D aircraft were ferried from Quantico, Va., via Boeing C-17 to London, while Boeing Chinook helicopters flew from Germany to the same location.

HMX-1 commanding officer of the presidential helicopter squadron, Col. Stephen Taylor, and the Commander of the "Big Windy" squadron, Maj. Keith Meeker, briefed the mission requirements, and together, their units accomplished the assigned missions.

Boeing's John Morgenstern, assigned to HMX-1 for many years, participated in the deployment and was impressed with the new VIP kits that adorned the Chinooks for the mission.

Although there were a few maintenance requirements, Big Windy got the job done when it counted.

The teamwork of the two squadrons resulted (*once again*) in flawless execution of the assigned mission.

Taylor thanked the Big Windy crew for a



*The "Big Windy" Chinook squadron conducts presidential support missions in the United Kingdom.*

job well done.

After the mission, Morgenstern distributed pins to the Big Windy crew and presented Boeing hats to the seven youngest

and seven oldest crew members as tokens of appreciation.

Photos and article provided by Maj. Keith Meeker and John Morgenstern.



*The entire Chinook crew poses for a photo with Boeing's John Morgenstern (front row, center) after successful completion of the escort mission.*

## *From the Field: Hawaii Army Nat'l Guard excels in airlift*

By Col. Gary Hara  
AV, Hawaii Army National Guard

In July, Company C, 193<sup>rd</sup> Aviation, Hawaii Army National Guard (HIARNG) participated in the largest CH-47 airlift conducted in Hawaii. During this simulated non-combatant evacuation operation, the "Voyagers" transported 588 soldiers and more than 282 tons of equipment between Wheeler Army Airfield, Oahu, to the Pacific Missile Range at Barking Sands, Kauai.

The actual mission consisted of two lifts of 10 CH-47Ds to and from the Island of Kauai. The remainder of the Division Reaction Force was transported by USAF C-141s and Air National Guard C-130 aircraft.

Company C flew over 168 hours over 4 days in support of this exercise. The soldiers tasked with the rescue mission and equipment transportation were from the 3<sup>rd</sup> Brigade Combat Team and the 2<sup>nd</sup> Battalion, 27<sup>th</sup> Infantry/25<sup>th</sup> Infantry Division (L).

The equipment transported externally under NVG and daylight conditions were a combination of HUMMVs and artillery tubes (M-119s).

The 103<sup>rd</sup> Troop Command, HIARNG, 3<sup>rd</sup> Brigade, 25<sup>th</sup> ID(L), and the 3<sup>rd</sup> Battalion, 149<sup>th</sup> Aviation, Texas Army National Guard, provided the command and control for C Company during this multi-echelon collective training event.

Company D, 1<sup>st</sup> Battalion, 207<sup>th</sup> Aviation, HIARNG provided UH-60 helicopters as part of an air rescue operation on the Island of Kauai.

This unit provided the transportation for "Team Rescue" from the 2-27<sup>th</sup> and the U.S. citizens between the small town of Hanapepe and Barking Sands. At Barking Sands, the U.S. citizens were provided medical attention, fed and processed for return to Oahu by the 325<sup>th</sup> Forward Support Battalion.

The 199<sup>th</sup> Weather Flight, Hawaii Air National Guard, the 416<sup>th</sup> Air Traffic Services Company from the Arizona ARNG and the reconnaissance and interdiction detachment from the HIARNG were also part of the 103<sup>rd</sup> Troop Command's Task Force, "Kupa'a" (*Stand Together*).

Other active component units from the 25<sup>th</sup> ID(L) that participated in this operation were from the 3<sup>rd</sup> Battalion, 7<sup>th</sup> Field Artillery, A Battery, 1<sup>st</sup> Bn, 62<sup>nd</sup> ADA, C Co., 65<sup>th</sup> Engineers, C Co., 125<sup>th</sup> Signal Bn and the 25<sup>th</sup> Military Police Bn.



Photo courtesy Gary Hara

*CH-47Ds carry HUMMVs as part of a simulated non-combatant evacuation operation in Hawaii.*

The 196<sup>th</sup> Infantry Brigade (TS), from Fort Shafter, Hawaii and the 2<sup>nd</sup> Battalion, 291<sup>st</sup> Aviation (TSB), from Fort Riley, Kan., provided the aviation observer controllers and evaluators. The Texas and Arizona Guard units brought a lot of talent and expertise to Hawaii, which also improved the training for C Company.

Their contribution in this exercise signifi-

cantly improved the readiness of C Company and allowed the unit to actually train with a CH-47 Battalion Headquarters.

This major training event was specifically designed to exercise C Company, 193<sup>rd</sup> Avn, but it would not have been as successful without the confidence and support of Col. Roy Waggoner, Commander of the 3<sup>rd</sup> Brigade, and his staff.

# Long-range fuel pod cuts time, costs

Continued from Page 2

able as spares—with all necessary tooling—for existing aircraft and standard equipment for future long-range Chinooks.

The improved fuel pod features a number of design and tooling enhancements and is expected to substantially reduce manufacturing cost and flow time, enhance quality and reduce rework requirements.

“The old process involved multiple assembly and curing steps,” said Kitson. “We’re now curing the fuel pod once on an aluminum mandrel and then extracting the mandrel from the pod with a specialized tool. This process eliminates one cure cycle and the time spent joining the pieces together. It’s a very efficient process.”

A standard Chinook can fly more than 200 nautical miles before refueling. The long-range fuel pods, which hold more than 4,000 gallons of fuel, increase the chopper’s combat radius twofold.

In addition to the redesigned fuel pod, a separate improvement team with CCOE and Structures Integrated Product Team participation, significantly improved the IFIS beams—or the structures that hold the pods onto the aircraft.

“We used a similar philosophy on the beams that we used on the fuel pods, but we took it one step further,” said Dave Cloud, Manufacturing Technology manager. “They are now one-piece, single cure structures built with resin transfer molding, so they are much easier to produce.”

Above all else, the teams decided to keep the designs as “easy to build and install as possible” for employees and customers.

“If you do that, reduced cost and improved flow time and quality will follow,” Cloud explained. “With some minor adjustments, these processes will become two of the most robust processes that we have. Composite processes are inherently sensitive to skill, environment and tooling. The objective is to simplify the processes and reduce the cost per pound down to its lowest level. I think that we have done that with these two components.”

## From the Field: Delta Schooners to the rescue

By SFC Steve Robertson

For all the soldiers who have spent a rotation at the National Training Center, Ft. Irwin, Calif., this story may be of interest.

Remember being harassed by the OPFOR and ducking for cover when the UH-1 HUEY/HIND reared its ugly head and going to MOPP 4?

On a cool moonlit night in early July, the ugly HUEY/HIND was on the prowl using night vision goggles out in the southwest area of the reservation. Flying up through an ascending ravine, the helicopter’s engine started to burp (*later confirmed as compressor stalls*).

Thanks to the quick thinking of the crew, they were able to guide the stricken craft to a soft landing in a mountain saddle. No injuries, no damage, just a sense of relief. Next problem: How to get the HUEY/HIND home?

The cry went out from the Aviation OPFOR commander—“We need a Chinook!” The “*DELTA SCHOONERS*” of Co. G 140<sup>th</sup> Aviation Regiment in Stockton, Calif., answered the call.

Having UH-1 helicopters stationed at the AASF meant they had the right equipment and a trained aircraft recovery team.

After a flight around a summer monsoon

weather system, the Chinook arrived at the Daggett Airport for the recovery operation to begin. Flying out to the landing site, the “rain gods” let everyone know they were watching. Normally, Ft. Irwin suffers from extreme heat—100 degrees plus—but this day, the area received over half its annual rainfall with lightning flashing off to the east.

The recovery team prepared the HUEY/HIND, the slingload inspector certified the rigging and the CH-47 flight crew completed the final slingload briefing. The flight path took the crew from the forced landing site over the NTC entrance at Southgate, past Coyote Lake and into the Daggett airport. The pick-up went off without a hitch, as simple as picking up practice concrete blocks.

The flight lasted about 30 minutes. Arriving at the airport, a small portion of OPFOR aggressors watched in amazement as the “*Delta Schooners*” gracefully placed the HUEY/HIND on the concrete tarmac. The only thing damaged was a little pride.

CW3 Church, the NTC AVN Company Safety Officer, offered his compliments to the crew, and as token of their appreciation, presented each member of the CH-47 flight crew a unit patch rarely shared outside the unit.

Another successful mission that brings to mind the Chinook motto—“*He ain’t heavy, he’s my brother!*”



Photo courtesy Steve Robertson

A CH-47 from the “*Delta Schooners*” prepares to rescue a UH-1 from a California mountainside.