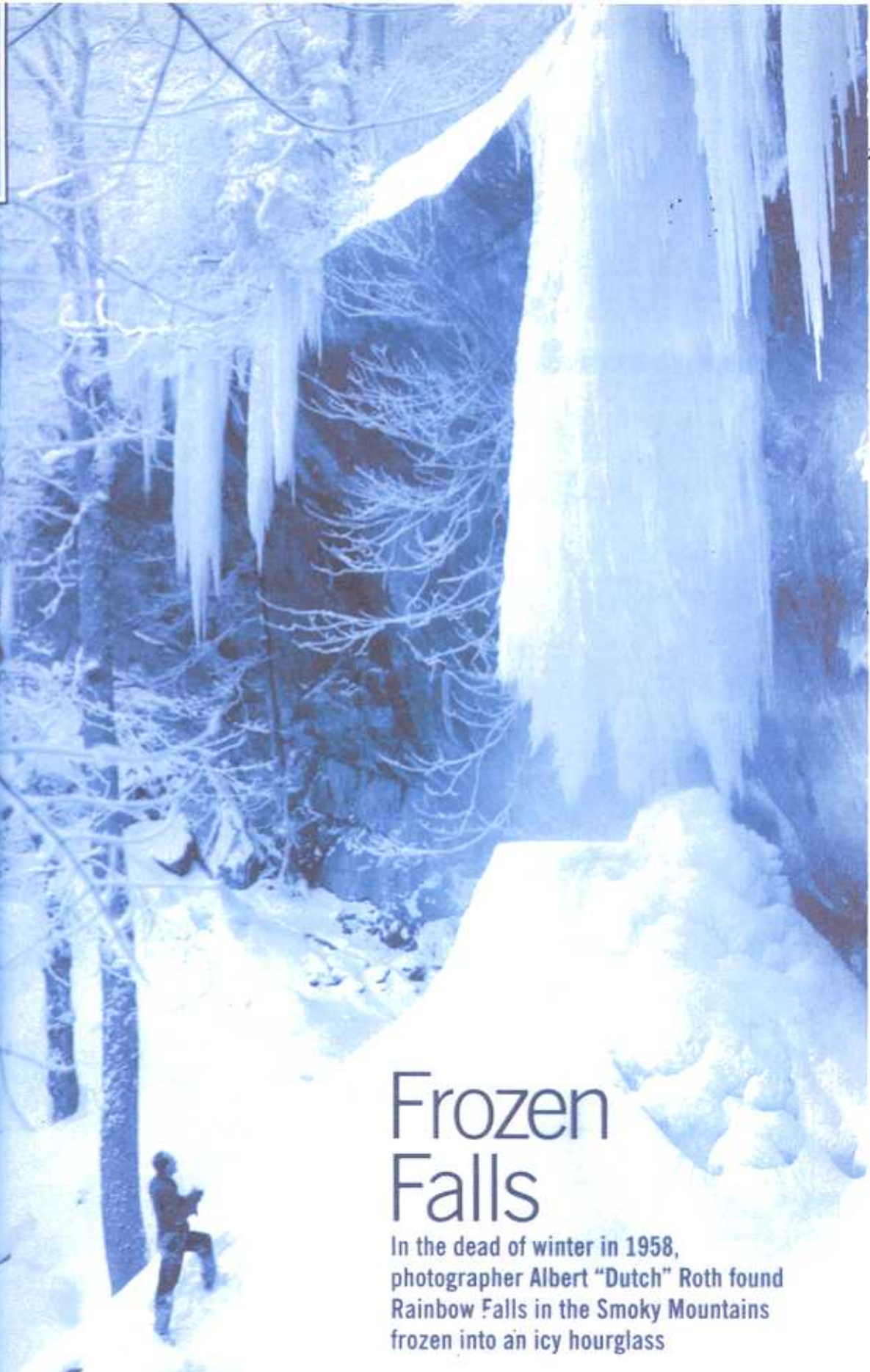


TennesseE

ALUMNUS



Frozen Falls

In the dead of winter in 1958, photographer Albert "Dutch" Roth found Rainbow Falls in the Smoky Mountains frozen into an icy hourglass

BIRTH OF THE AC-130s • IS OUR FOOD SAFE?

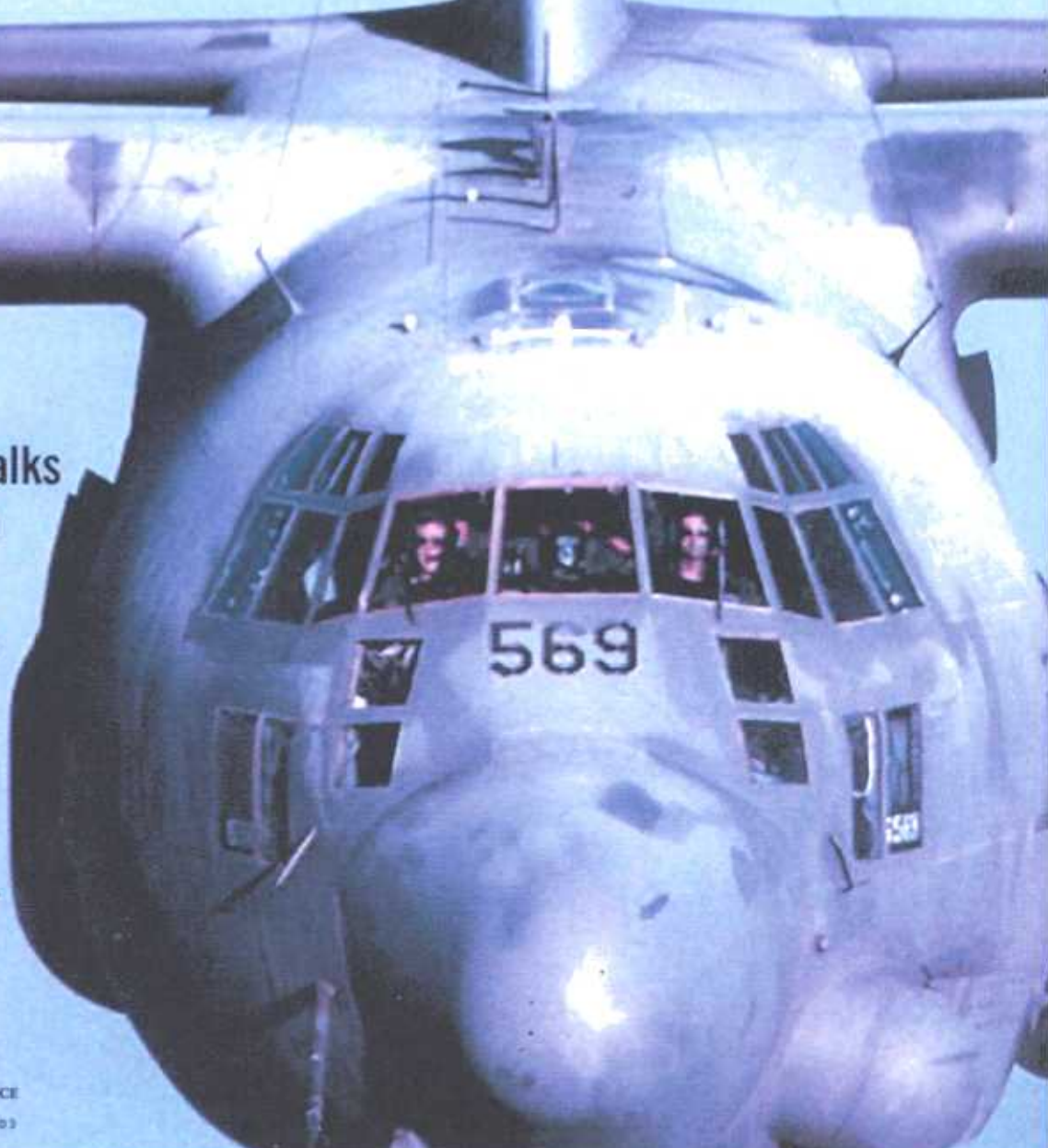
JUST PLANE SPOOKY

The AC-130 packs awesome firepower and is capable of delivering up to 300 rounds of ammo per second from 3,000 feet and higher.

A UT professor talks about his part in developing the AC-130 gunship, an aircraft he thinks could have changed the course of the Vietnam War

By MIKE BRADLEY

AC-130 PHOTO—U.S. AIR FORCE



Brrrrrap! Brrrrrap!

From 3,000 feet above the Mekong Delta, U.S. Air Force Lt. Ralph Kimberlin watched in awe as the Gatling-type 7.62-mm mini-gun sprayed 300 rounds of ammo per second at Viet Cong troops attacking a U.S. Special Forces outpost below.

It was December 24, 1964, and the first combat test for the new side-firing gunship Kimberlin and Capt. Ron Terry had developed only weeks earlier at Florida's Eglin Air Force Base.

With no budget, the team test-rigged a basic C-130 cargo plane by mounting the guns on aluminum cargo pallets, bolting the assemblies to the floor of the plane and aiming them out the cargo doors.

They found one of the most serious problems to be the guns. The 7.62-mm mini-guns were built to be mounted under the wing and fired in short bursts as the plane swooped down on a target—not fired constantly while circling a target.

"It was experimental. It had never been tried in combat before," Kimberlin, now a UT National Alumni Association Distinguished Service Professor at the UT Space Institute, said of that first mission. "There were only nine prototype mini-guns, and we weren't using them as intended, as an under-wing weapon where you go out and shoot 1,500 rounds and then come back and land.

"We were reloading them in flight, and we began to have problems with guns breaking. In fact, one of the guys on our crew got a Purple Heart because one of the guns exploded and he got a piece of shrapnel in his arm.

"We were using them way beyond what they had originally been designed for. The barrel would get real hot and just burst."

Kimberlin vividly remembers that first mission.

In an account from the July issue of *Smithsonian Air & Space*, he said, "We opened fire and it scared me half to death. I thought the gun had blown up. Flames not only came out of the muzzles but also blew back inside, where they licked around the cans where the spent cartridges were going. It was really noisy too, with the din from all three guns going *brrrrrap*."

Despite his fears, those early missions were a huge success.

Today, the side-firing gunship developed by Terry and Kimberlin is

known as the AC-130, the "attack" model (hence the letter "A") of the U.S. military's basic C-130 cargo plane.

It also has been dubbed "Spectre" and "Spooky," for its psychological effect on enemy ground forces, and "Puff the Magic Dragon" after Viet Cong began referring to its ammunition fire as "dragon's breath."

Since that first fateful mission, the AC-130 has become a staple of America's post-September 11 military efforts in Afghanistan and an icon of U.S. military power.

With 20-mm Vulcan Gatling-type 7.62-mm mini-guns and 105-mm howitzers, the AC-130 packs awesome firepower and is capable of delivering up to 300 rounds of ammo per second from 3,000 feet and higher.

Its infrared sensors and computerized navigation, targeting, and firing systems provide precision accuracy from high altitudes at night and in bad weather. Perhaps its most important feature is an array of vision sensors that provide a method of positively identifying friendly ground forces.

The AC-130 was born out of a complex situation in Vietnam where civilians, friendly forces, and enemy troops existed in close proximity—a combat scenario that proved to be a harbinger of things to (continued on page 38)

JUST
PLANE
SPOOKY

"There was never any formal project with all the hoopla or approval by the Pentagon."

—Ralph Kimberlin

come. Since then, the gunship has been a key part of U.S. military efforts in Grenada, Panama, Iraq, and Afghanistan.

In Vietnam, AC-130s destroyed more than 10,000 enemy trucks and were credited with many life-saving close-air-support missions.

The gunship suppressed enemy air defense systems and attacked ground forces during Operation Urgent Fury in Grenada. This enabled the successful assault of the Point Salines airfield.

AC-130s had a primary role during Operation Just Cause in Panama, destroying Panamanian headquarters and command and control facilities by precise military strikes in an urban environment.

During Operation Desert Storm, the planes provided air-base defense and close air support for ground forces that helped bring about the swift resolution of the war.

Kimberlin flew more than 50 air combat missions over the jungles of Southeast Asia. He was hit only once.

"On this particular training mission, we were coming back to base and ran into some clouds at 3,000 feet. So the crew decided to go lower, low enough that we were having to fly up over the hedgerows and we were blowing water up out of the rice paddies with our propellers," Kimberlin said.

"We popped over a hedgerow and there sat this little hut, and inside were two guys with rifles. When they saw us they ran out and got on one knee and started shooting.

"I was sitting between the two pilots. One of the rounds went right in front of the windshield. In fact, I thought it had hit the pilot. The other went underneath me and hit the left propeller. It went *waaaannng!* and made a hell of a racket when it hit the airplane. When

we landed, the bullet was still hanging out the back of the propeller.

"Of course we couldn't shoot at these guys because the rules of engagement at the time said we had to have a Vietnamese observer to identify them as Viet Cong. But we were close enough to base that we just pulled up and returned. That was the only time we were hit the whole time I was there."

Many of Kimberlin's combat flights were early tests of the C-47 gunships that would evolve into the present day AC-130.

Despite the initial success of those combat flights of the prototype planes, the upgraded full-blown gunships wouldn't be deployed in Vietnam for nearly two more years, Kimberlin said.

The new gunships were loaded with more firepower, more durable guns, and more sophisticated observation equipment.

Had these gunships been deployed sooner, it might have changed history, Kimberlin said.

"At the time we only had a couple of airplanes, and those were prototype guns, so they wore out quickly. But we still stopped all the attacks. We stopped them cold," Kimberlin said. "It was almost two years after the first system that we finally got a squadron of those airplanes, and by then the nature of the war had changed.

"The North Vietnamese were starting to operate as an army by then, as opposed to unorganized guerilla warfare. Those two years gave them time to infiltrate large numbers of troops into the country and get organized.

"I believe that had we had the squadron there earlier, we wouldn't be talking about a Vietnam War. And that's saying quite a bit. It would have had a very significant impact. I think it would have stopped it."

Much of the delay was simply the time it took to overhaul and modify existing planes, said Kimberlin, who was involved in converting the old C-47s that would make up the squadron in Vietnam.

"We modified 18 airplanes at a place that later became Butler Aviation but at the time was known as Air International down in Miami," Kimberlin said. "The airplanes came out of the boneyard. We found some that had coal dust in them from the Berlin Airlift. The first one we did had been overhauled the year I was born, 1940.

"They completely redid these airplanes and installed the guns in them and built a whole squadron, but that squadron didn't get there [Vietnam] until the nature of the war had changed quite a bit."

Kimberlin said that because of the stigma and controversy surrounding the Vietnam War, he hasn't talked much about his tour of duty in Vietnam and his work on "Spooky."

Still, he takes pride in his role in creating one of the most effective military air systems known. As attitudes and understanding about the war change, more accomplishments may be recognized, he said.

"I don't generally talk about it too much because of the political ramifications," Kimberlin said. "Vietnam wasn't a very popular subject for a number of years, so I never mentioned it much, but now maybe I will.

"I feel pretty proud of it, to be real honest with you.

"It's really an incredible story. About four or five people made that happen without any money to speak of, just what they could beg, borrow, and steal.

"The interesting thing about this is that there was never any formal project with all the hoopla or approval by the Pentagon. Just a few guys who believed in it made it happen."