

Spurred by Gratitude, 'Bomb Lady' Develops Better Weapons for U.S.

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On the nights when no mortar shells fell, Anh Duong listened to the Saigon crickets. More often, though, the girl lay by her open window, her hair damp against her cheeks, and wondered, as the lights from flares flickered on the leaves of a plum tree, if the next Viet Cong rocket would smash into her house.

"Why would you want to randomly blow up civilians?" Duong remembers thinking.

Now, at age 47 and living in Maryland, Duong is still grappling with the question, trying to apply bedtime lessons from Vietnam to the wars in [Afghanistan](#) and [Iraq](#). Duong is known as "the bomb lady" around the Pentagon and as the engineer behind America's first thermobaric, bunker-busting explosive. A 5-foot-1-inch suburban mother of four, Duong has become, according to Thomas A. Betro, director of the Naval Criminal Investigative Service, "one of the most important weapons-developers of the modern era."

For Duong, who was honored recently as one of the federal government's top civil servants, producing tools for U.S. troops is a way of life. After years of pioneering explosives for the Navy, she now creates systems to help identify terrorists.

"I don't want My Lai in Iraq," Duong said at the Pentagon, where she works on anti-terrorism issues as a science adviser. "The biggest difficulty in the global war on terror -- just like in Vietnam -- is to know who the bad guys are. How do we make sure we don't kill innocents?"

Duong's most recent innovation, the Joint Expeditionary Forensics Facilities (JEFF) project or "lab in a box," analyzes biometrics. It will be delivered to Iraq at the beginning of 2008, the Navy said, to help distinguish insurgents from civilians.

"The best missile is worthless if you don't know who to shoot," Duong said.

Betro said the military has been scanning the irises and taking the fingerprints of Iraqis, feeding a biometrics data base in West Virginia. To date, a few ad hoc labs have processed about 85,000 pieces of evidence taken from weapons caches or roadside devices. Duong's mobile forensic labs, with an initial budget of \$34 million, will be deployed all over Iraq.

Duong, whose nickname is "klutz" in Vietnamese, and who wears frosted-pink nail polish over the objections of her teenage daughter ("That's *hideous*, Mom,") supervised the "lab in a box" design.

Each collapsible, sand-colored, 20-by-20-foot unit has its own generator and satellite link. If things go as planned, data will beamed to the Biometric Fusion Center to check against more than a million Iraqi fingerprints. Hundreds of Marines are learning how to process a crime scene, "an unheard-of tactic . . . snapping on rubber gloves," Betro said.

The next stage is to miniaturize, create "a backpack lab," so that soldiers who encounter a suspect "could find out within minutes" if he's on a terrorist watch list, Duong said. "A war fighter needs to know one of three things: Do I let him go? Keep him? Or shoot him on the spot? In Vietnam, our guys didn't have this tool."

In Vietnam, Duong recalled, her family befriended American airmen who served on a nearby base. The day Saigon fell, her brother, a South Vietnamese air force pilot, loaded her relatives onto a helicopter. Duong was 15.

"I remember clutching my little bag full of pictures of teachers, childhood friends, of my cat and dog that I had to abandon, and a few pieces of my best clothes, crying the whole time," she recalled in a speech at the Naval Surface Warfare Center in Indian Head, where she worked before moving to the Pentagon.

Eventually Duong and her family were transferred to a Vietnamese boat, which pulled alongside a U.S. Navy ship. One by one, they jumped.

"Each would have to wait for the right moment, the short period when the waves would bring the boat and the ship closest," Duong said. "I was standing in line for that jump, when my cousin, who was ahead of me, made his jump at the wrong moment. Even today I can still picture him sliding down the side of the ship while everyone on the other side was trying to catch his hand . . . while my aunt was screaming."

Her cousin, dangling, his feet nearly crushed between the two hulls, was hoisted on board. "Someone shouted in my ear that I was next," Duong recalled. "Only after I made it to the ship and found my father did I break down."

Duong came to Montgomery County in 1975 by way of refugee camps in the Philippines and in Pennsylvania. The First Baptist Church of Washington sponsored her family.

"Her life story is at the heart of her commitment," Navy Secretary Donald C. Winter said in an interview. This fall, he presented Duong with the 2007 Service to America National Security Medal from the nonprofit Partnership for Public Service (PPS). Backstage, as Winter listened to Duong's account of her escape, he took a deep breath and, he said, "I'm thinking, 'Gee whiz, am I going to be able to do this without choking up?' "

PPS president Max Stier said afterward, "Americans sometimes forget the important role their public servants play. Immigrants don't."

Certainly not Duong. "My life is payback: I'm indebted to the soldiers and to Americans," she said. "I was enraged when I found out how Hollywood portrayed my American heroes and my American friends as women- and children-killers. How dare they?" As a teenager, Duong went to see "The Deer Hunter." She walked out in the middle.

Duong is still angry, though no longer helpless. "I'm here because in Vietnam, we ran out of bullets. I don't want to ever be in that position again," she said. "By building bombs, the other guys realize they shouldn't mess with us. If you have a gun, I have a bazooka. If you have a grenade, guess what? I have a bomb."

At Indian Head, in the 1990s, Duong headed the development and transition of 10 explosives into 18 different U.S. missiles, bombs, torpedoes and gun projectiles, a record in the field, according to the PPS.

In 2001, Duong led nearly 100 scientists at Indian Head to build a thermobaric, internal-blast explosive so powerful that critics called it "thermo-barbaric." It was designed for use in Afghanistan during Operation Enduring Freedom to penetrate enemy caves. Her team compressed years of work into 67 days.

Duong's colleague, Karen Burrows, a fuse specialist, recalled how she and Pam Carpenter, the chief chemist, sat in meetings with Duong, calculating the optimum heat and pressure to billow around corners and rip through tunnels. Male colleagues called the women, all mothers of young children, "the knitting club."

"On Saturdays, I would work and come home drained, and do laundry," Burrows recalled. She told her 4-year-old son, "'Mommy is making a bomb for Osama bin Laden.' He shared this with his friends, 'Mommy makes bombs.' "

At home, Duong's four children, ages from 5 to 11 at the time, were barred from playing with toy guns. No Harry Potter books -- too violent. Even their Disney videos were censored, Duong's daughter, Cynthia, said: "Our 'Pocahontas' movie had all the fight scenes cut out."

Though Duong and her husband Tho, a software engineer, favor building a strong U.S. arsenal, they are "strongly antiwar," Duong said. "We don't want our kids to think violence is the answer." She builds weapons for deterrence, she said, though, if provoked, the United States should use them. Asked if she worried her bombs might be misused, she said, "You've got to have faith in our leadership."

Recently, Duong returned to Indian Head for a visit. She saw Doug Elstrodt, who was in charge of mixing and casting the thermobaric ingredients.

"It's like baking a cake," Elstrodt said, standing over a 420-gallon steel mixing bowl with beaters three feet long. "You start with the liquids. Add the solids."

Duong remembered how she used to come home from work and cook dinner -- but no brownies or cakes. "I'd been baking all day," she said. She also remembered how nervous she was at the Nevada site, when they tested the thermobaric mix. A picture of bin Laden, pasted on a concrete slab, was placed inside a tunnel. Duong said her heart pounded as the explosion ruptured the cave.

Now Duong was standing inside a charred and pitted Navy detonation chamber, inhaling the corroded odor. "This feels like home," Duong said, the words echoing against metal walls.

Back home in Saigon as a little girl, Duong used to stand by the gate of her brother's air base, waiting for him to come home. She'd pretend she was a fairy: "I wanted my brother to win, to have the best weapon, so he would come back alive."

Today, to defeat terrorists, she said, "We need a mind-opening weapon. That's the best weapon -- to change the terrorists' minds." She had lifted it in her hand as a girl and aimed while waiting for her brother. "My first weapon," Duong recalled in a soft voice. A magic wand.