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May 3, 2004, 8:51AM

East Texas man faces sentencing for cyanide cache

Associated Press

NOONDAY - An East Texas man who had accumulated a massive amount of cyanide was described as a white supremacist and a student of militia-led revolt.

William Krar is scheduled to be sentenced in a federal court Tuesday after acknowledging that he possessed enough sodium cyanide to fatally gas everyone in a 30,000-square-foot building, such as a civic center or high school basketball arena. But investigators say they still don't know what Krar intended to do with the deadly materials.

Krar, 63, pleaded guilty to one count of possessing a dangerous chemical weapon in November. He faces up to life in prison, but officials have said that he's expected to get less than 20 years under federal sentencing guidelines.

Law officers said Krar was a supplier of explosives, dangerous chemicals and high-powered guns.

"If you had a McVeigh type and a Krar type come together, you might have had a very big explosion," assistant U.S. Attorney Brit Featherston, lead prosecutor in Krar's case, told the Fort Worth Star-Telegram in Monday's editions. Timothy McVeigh was executed after being convicted of federal murder charges in the bombing of the Oklahoma City federal building.

Although Featherston said there is no indication that Krar and McVeigh ever crossed paths, there were many similarities between them.

Both McVeigh and Krar had in their possessions at the time of their arrests "The Turner Diaries" and "Hunter," two novels promoting racism, hate and reasons to attack the government.

The government has said that "The Turner Diaries" was used as a blueprint by McVeigh in planning his April 19, 1995 attack that killed 168 people, 19 of them children.

Court documents show that Krar's reading materials also included pamphlets entitled "Firearms Silencers," "Expedient Hand Grenades" and "Boobytraps." And, like McVeigh, he owned "The Anarchist Cookbook" and "Poor Man's James Bond."

Krar's cache of weapons included nine machine guns, three silencers, 67 sticks of explosives, more than 100,000 rounds of ammunition, 800 grams of near-pure sodium cyanide and the acids to turn it into poisonous gas.

Featherston said he does not believe Krar was simply a collector of dangerous goods.

"The majority of what Krar possessed you only possess to kill and maim human beings," the prosecutor said.

Krar's legal problems began in 1985, according to court records and FBI affidavits, when he was arrested in New Hampshire and charged with impersonating a police officer. He did not fight the charge, instead opting to pay a fine and be set free.

In 1995, Krar was under suspicion again when his business card was found in a Tennessee home, along with what federal reports say were "large amounts of bomb-making components" and a "large number of firearms and ammunition." According to an FBI affidavit, that discovery placed Krar and a man identified as Sean Bottoms under police scrutiny for "serious allegations ... to carry out a specific act of domestic terrorism against the United States government."

An informant also described Krar as being a "good source of covert weaponry for white supremacist and anti-government militia groups in New Hampshire."

<http://www.chron.com/cs/CDA/ssistory.mpl/metropolitan/2546438>

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From [Thursday, April 29, 2004](#) issue.

Ballistic Missile Defense "Obsession" Harms U.S. Defense Against Cruise Missiles and UAVs, Expert Says

By David Ruppe

Global Security Newswire

WASHINGTON — An "obsession" with ballistic missile defense is partially responsible for insufficient U.S. attention and funding for defense against cruise missiles and unmanned aerial vehicles, an analyst said here yesterday (see [GSN](#), March 16).

Less-expensive cruise missiles and unmanned vehicles pose an increasing threat to the U.S. military and civilians, one that has not been sufficiently addressed by the military, Dennis Gormley, a cruise missile authority and senior fellow at the Monterey Institute's Center for Nonproliferation Studies in Washington, said at Georgetown University.

More than 75,000 cruise missiles, including prevalent antiship missiles, are in the world's arsenals today, he said. Unmanned aerial vehicles, meanwhile, can be purchased, or developed by converting light manned aircraft, and configured by countries for delivering chemical or biological agents. Because they move slower than ballistic missiles, such aircraft could be more effective at disseminating an agent across an area, he said.

International export agreements contain loopholes allowing state-to-state transfers of far-flying systems capable of delivering significant payloads, although they are supposed to be restricted, Gormley said.

Of particular concern, he said, is the growing number of companies selling complete kits for converting light manned aircraft into a GPS-guided unmanned systems — "variable autonomy flight management systems" that he said are not restricted by the Missile Technology Control Regime, an informal set of export control guidelines.

His comments echoed the conclusions of a report by Congress's General Accounting Office in February, which called for increased efforts to control the spread of such technologies (see [GSN](#), Feb. 26).

Insufficient Response

Gormley said the military has not responded to the threat in a coordinated, sufficiently aggressive way in part because the different armed services operate independent programs for cruise missile defenses, unlike the Missile Defense Agency, which runs nearly all ballistic missile defense programs.

"Each service has different solutions to the problem" and their air-defense systems "are not integrated," he said.

Gormley said slower- and lower-flying cruise missiles and UAVs pose a particular challenge to U.S. missile defense systems because U.S. ground-based radars are programmed to disregard slower moving objects and generally do not scan below 6,000 feet.

There is "virtually no detection capability below 3,000 feet over the U.S. homeland," he said.

The Iraq war serves as “a kind of serendipitous warning event,” he said, citing instances in which U.S. Patriot radar systems engaged Iraq cruise missiles but failed to down them.

Gormley did not argue that ballistic missile defenses are not needed. He said that the combined threat of such missiles with cruise missile and unmanned aerial vehicle attacks could challenge U.S. air defenses in future conflicts.

“I worry about the next state actor mixing in low-flying threats with ballistic missiles,” he said.

He faulted an “excessively singular focus on the ballistic missile threat,” and estimated that hundreds of millions of dollars are spent each year by various armed services on cruise missile defense versus roughly \$10 billion annually spent on ballistic missile defense.

With the Bush administration directing so much money for ballistic missile defense, “there may not be room” for more cruise missile defense spending, Gormley said.

<http://www.nti.org/d/5Fnewswire/issues/2004/4/29/d6a5d749%2Dcb67%2D4c25%2Dabd2%2D1a5bbfd07e94.html>
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Tri-Valley Herald

Article Last Updated: Sunday, May 02, 2004 - 3:21:48 AM PST

Missing H-bomb off Georgia coast -- is it a danger?

Some believe it poses no threat -- others

By Chelsea J. Carter, Associated Press

WASSAW ISLAND, Ga. -- The 20-foot Boston Whaler bobs in the swells of Wassaw Sound off Savannah. The engines grumble as Derek Duke peers over the stern. This, he says, is the place.

The water is green and murky, and sunlight turns floating grains of sand to flecks of gold. Deeper, shifting currents churn silt, blotting the daylight. On the dark bottom, empty cans and bottles litter a seabed of fine sand and rough stones.

There seems to be nothing special out here. But beneath the ocean floor off Savannah, an aluminum cylinder lies entombed in silt. It's like an 11-foot-long bullet with a snub nose and four stubby fins. Written on it, its name: No. 47782. Enclosed in its metal skin: 400 pounds of conventional explosives and a quantity of bomb-grade uranium. No. 47782 is a hydrogen bomb, a Mark 15, Mod 0 to be exact, one of the earliest thermonuclear devices developed by the United States. This is the kind whose mushroom clouds boiled in South Pacific tests. It was designed to be 100 times more powerful than the Hiroshima atomic bomb.

No. 47782 has rested off Savannah since Feb. 5, 1958.

For decades, people have gone about their lives in this city of antebellum mansions and brick-sidewalk squares with little or no thought to the bomb.

No. 47782 might well have remained a footnote to Cold War history were it not for the man on the boat and his one question: Is it a danger?

As a child growing up near Savannah, Derek Duke, now 58, heard the story: A pilot was forced to jettison a hydrogen bomb near Tybee, one of the city's barrier islands, after a midair collision.

Perhaps that was the beginning of Duke's fascination with nuclear weapons -- an interest that grew when he watched Slim Pickens ride a nuke in the movie "Dr. Strangelove." Later, he said, it was his job to ferry hydrogen bombs to overseas bases as an Air Force pilot.

So in 1998, when he stumbled onto some old news stories about the Tybee Bomb while surfing the Web, Duke was naturally interested.

At first, he says, he was just curious. It was an interesting bit of military history to look into during time off from his job training commercial pilots at the Atlanta airport.

He searched the Internet and local newspaper archives. He read the limited information available about the Mark 15, Mod 0. Many details, including the amount of uranium it contained, remain classified.

By 1999 his interest growing, he began contacting others who might know something about the case. He talked to residents who lived in the area. He talked to members of the team that had searched for the bomb. He wrote letters requesting unclassified documents.

Then Duke looked up the pilot.

Howard Richardson was surprised by the telephone call from Duke. It had been more years than he cared to remember since he had talked with anyone outside his circle of family and friends about the bomb.

Slowly, Richardson began to share his story -- first with Duke and later with The Associated Press.

It was Feb. 5, 1958, and he was a major at the controls of a B-47 bomber -- one of a dozen from the 19th Bombardment Wing taking off on a training mission from Homestead Air Force Base in Florida. All were carrying H-bombs.

At the time, it was routine for crews in training to carry transportation-configured nuclear bombs, with the detonation capsules removed to prevent a nuclear explosion, the Air Force said. The idea was simple. It gave the crews the opportunity to practice with the bomb, said Billy Mullins, associate director of the Air Force Nuclear Weapons and Counterproliferation Agency.

Before takeoff, Richardson signed a receipt verifying he was taking custody of the bomb from the U.S. Atomic Energy Commission, the agency responsible for keeping track of the country's nuclear arsenal.

The mission was to simulate dropping an H-bomb on a city in the Soviet Union and to evade Air Force fighters sent up to simulate Russian interceptors.

Over Reston, Va., which was unknowingly playing the role of the Soviet city, Richardson's navigator lined up the target on the radar screen and punched the launch button. The button activated a transmitter that recorded how close the crew came to hitting the target.

Then Richardson turned the B-47 south toward home through a screen of "enemy" fighters.

Richardson was an old hand at evading fighters. During World War II, he piloted 35 missions -- two on D-Day -- in a B-17 nicknamed the "Mississippi Miss" after Richardson's home state. That was 10 more missions than the "Memphis Belle," whose crew gained legendary status as the first to complete 25, he would proudly tell folks.

The B-47 wasn't much like the lumbering World War II bomber. It was easier to handle, "more like a fighter than a bomber," Richardson said. Using high altitude maneuvers and electronic counter measures, he evaded the F-86 fighters launched over Virginia to intercept him.

When he and his two-man crew crossed into North Carolina at more than 37,000 feet, they were back in friendly skies. As far as the crew was concerned, the training mission was over. Suddenly, the B-47 shook violently. Seconds later, flames shot off the No. 6 engine. The B-47 had just collided in mid-air with one of the "enemy" fighters. Richardson and his crew could see the No. 6 engine dangling off the wing. The wing's main support beam was broken and the horizontal and vertical stabilizers, which gave the pilot control, were damaged.

The Air Force's tactical doctrine listed the safety of a crew as a pilot's No. 1 priority. So, on that clear, moonlit night, Richardson turned the B-47 toward sea and dropped the bomb in the ocean. Then he limped back to a safe landing on that rough runway.

Struggling to keep the bomber under control, Richardson headed for the nearest airfield, Hunter Army Airfield in Savannah. His co-pilot, 1st Lt. Robert Lagerstrom, issued a "Mayday," telling the Hunter tower it was coming in damaged and heavy.

The news from the tower operator wasn't good. The runway was under construction. The front of it had not been smoothed out.

"I thought that if we landed short, the plane would catch the front of the runway and the bomb would shoot through the plane like a bullet through a gun barrel," Richardson said.

For nearly 10 weeks, Navy divers searched the shallow, murky waters near Tybee Island for the bomb. The weather was bad, the water cold, the visibility poor. On April 16, 1958, the military declared the bomb "irretrievably lost." The bomb became one of 11 "Broken Arrows" -- nuclear bombs lost during air or sea mishaps, according to U.S. military records.

Four months after Richardson's accident, the Atomic Energy Commission changed its policy, banning the use of nuclear bombs during training exercises.

As Duke was learning all of this, he turned up a copy of the Atomic Energy Commission receipt Richardson had signed. Written in ink near the top of the document was the word "simulated." That, according to the Air Force, meant the bomb, containing 400 pounds of conventional explosives and an undisclosed amount of uranium, did not have a detonation capsule. Without it, there was no risk of a nuclear explosion.

That was reassuring. And it might have been the end of the story if not for another document Duke soon acquired. This one was a letter, written in 1966 to the chairman of the Joint Committee on Atomic Energy, recounting the testimony of Assistant Defense Secretary Jack Howard before a 1966 congressional committee investigating the country's missing and lost nuclear weapons.

Howard, the letter says, testified there were four complete nuclear weapons, including detonation capsules, that were missing or lost. Among them: the bomb Richardson had dropped off the coast of Georgia.

Decades later, Howard recanted his testimony after Duke gave the letter to the media and elected officials.

But which version was really true?

That's when Duke's curiosity turned to determination to find the bomb.

"Until that point, I bought the military's story," he said. "But not now. Something is just not right."

He began studying topography maps, tidal charts and weather patterns. But Duke knew he needed help navigating the waterways. In Harris Parker, he found both an expert and a partner.

The two are an unlikely pair of allies. Duke, 5-feet-8, is compact and full of nervous energy. Parker, 64, is tall and laconic, tanned and weathered by decades in the sun. He's a sometime treasure hunter, sometime movie consultant, and one of his business cards identifies him as a marine coordinator for the John Travolta movie, "The General's Daughter."

Together, Duke and Parker spent countless hours trolling Wassaw Sound, which connects the mouth of the Wilmington River to the Atlantic Ocean. They dragged Geiger counters behind their boat and brought up sand from the ocean floor to test.

Mapping every inch of their effort, they identified what they believe is a plume of radiation, although the readings are only slightly higher than the sea's natural radiation level.

But the plume wasn't near Tybee Island. Rather, it was just off Wassaw Island, about 20 miles from Savannah. Perhaps the bomber crew had mistaken one landmark -- an old World War II bunker -- for another near Savannah when it dropped the bomb.

In August 2000, Duke gave the Howard letter to U.S. Rep. Jack Kingston, a Savannah Republican. Kingston, in turn, asked the Air Force to investigate whether a live nuclear bomb might be lurking off the Georgia coast.

On April 12, 2001, the Air Force Nuclear Weapons and Counterproliferation Agency reported that the bomb was likely buried about 5 to 15 feet in silt somewhere below the ocean floor. There is "no current or future possibility of a nuclear explosion," the report said. And if left undisturbed, the conventional explosives in the bomb posed no hazard.

During the initial search in the 1950s, Navy divers did not turn up any radiation readings.

In fact, the uranium in the bomb is of less concern for radioactivity than as a heavy metal, Mullins said. "Where you have a problem with it, is if you ingest it," he told The AP.

Recovering it -- at an estimated cost of \$5 million -- didn't seem worth the trouble or the potential danger to Savannah's fresh water supply, he said. "As we see it, there's zero risk to anybody leaving it where it is."

Nonetheless, after the Sept. 11 terrorist attacks some folks in Savannah began to worry. A town hall meeting was called to discuss the bomb and the Air Force findings. A crowd showed up. CNN broadcast the debate, which continued in the Letters to the Editor section of the local paper.

Duke stoked the flames. "If we're so worried about terrorists getting ahold of nuclear weapons, why aren't we doing anything about this," he says. "Right down there, somewhere, is the material to make a dirty bomb."

So Duke, Parker and a handful of others formed a company to look for the bomb and submitted a bid to the government to locate it. The bid -- \$900,000-plus -- was denied.

Sitting at a table at Parker's Savannah home, Duke tips a 32-ounce disposable soda cup on its side.

"This is the capsule," he says.

Over the course of an hour, Duke painstakingly maps out the detail of his effort and his findings. It's part history lesson and part treasure hunt with a bit of conspiracy theory thrown in. He skips over or challenges any evidence that contradicts his position.

Parker, meanwhile, co-wrote a script, titled "The Tybee Bomb," a Tom Clancy-esque mystery. Duke distances himself from the script, which Parker says is just another vehicle to stir interest in recovering the bomb.

But the script, along with the creation of the company, led some to wonder about their motives.

At home in Jackson, Miss., Richardson eases onto a couch, and riffles through several expandable files of documents.

He pulls out pictures taken in 1958 of his damaged plane, a firsthand account he wrote about the accident, and an article printed in a flying magazine.

Nearby, on the floor, sits a framed copy of the bomb custody receipt.

Richardson, 82, is a big man with a gentle heart. He doesn't like to speak ill of anyone, but ...

"Derek Duke just doesn't know what he's talking about. I keep telling him he's wrong," Richardson said. "The paper says no capsule on board. I think I know what I signed for."

He has come to believe Duke and Parker are motivated more by money than by virtue. He points to the government bid and now the movie script.

"They are scaring those people in Savannah for no good reason," he said.

Richardson pauses, shakes his head and speaks softly, perhaps more to himself than anyone else.

"At this age, you think about the things you'll be remembered for. What I should be remembered for is landing that plane safely. I guess this bomb is what I'm going to be remembered for."

"If I had it to do all over again, I wouldn't have dropped it," he said. "After all this grief and pain, it just isn't worth it."

Back on the Boston Whaler, Parker and Duke check the onboard Global Positioning Satellite gear as they motor toward the spot where they believe the bomb rests.

Their efforts are at a standstill. They don't have the hundreds of thousands of dollars needed to take the search underwater. They don't have the backing of the military, the government or local elected officials.

"Does it pose a real threat? I guess we really don't know. But I think the military needs to take care of its unfinished business," Duke says. "They left this out there for us to deal with. I'd sure like for someone to know where it is, and what, if anything, it's doing to our environment."

Parker brings the boat to stop a few hundred yards from the soft, fine sand of Wassaw Island. He turns off the engine, letting small, wind-driven waves lap at the boat and push it along.

It's quiet, sedate, except for the occasional bird or dolphin breaking the surface.

"It's down there," Duke says. "Somewhere."

<http://www.trivalleyherald.com/Stories/0,1413,86~10669~2122738,00.html>

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New York Times

May 4, 2004

This Time It's Real: An Antimissile System Takes Shape

By James Glanz

DELTA JUNCTION, Alaska — As early as this summer, rockets hidden in silos near this wind-swept town will give the nation its first operating defense against intercontinental ballistic missiles since the 1970's.

Although the system is not a secret, it has been revived with so little fanfare that few Americans seem to realize it exists.

Among warfare experts, it is reviving the type of bitter debate that began in the cold war, culminating in an antiballistic missile treaty. And it is inspiring the same sort of passion that arose during the national fixation with President Ronald Reagan's Star Wars effort, officially the Strategic Defense Initiative. Unlike Star Wars, which faded into the realm of misbegotten high-tech dreams, the new system relies on agile but fairly ordinary rockets to smash incoming warheads rather than nuclear-powered lasers in space. In the new debate, Pentagon planners see the system as a bulwark against the ultimate calamity, a nuclear attack, while skeptics ridicule it as a defense that will not work against a threat that does not exist.

The decades have not washed away the political dimension of a missile defense, either. Deploying the system will fulfill a campaign pledge by President Bush, as well as a more specific directive, issued in December 2002, that the nation have a functioning missile defense system by this year.

Critics of the system, which will cost \$10 billion a year for the next five years and, potentially, hundreds of billions when the full defense envisioned by the Pentagon is installed, say it is being rushed before being fully tested. The critics call it a flawed defense against the ICBM's of yesteryear, not the suicide bombers and hijacked airplanes of the world since Sept. 11.

Nevertheless, the system is taking on hard reality in this remote town. On a sunny but numbingly cold day, six white domes rise like igloos within a double-perimeter fence topped by security cameras. Just across a road, the charred and denuded trunks of a fire-ravaged forest of black spruce appear to stand sentry. The folded blues and whites of the Alaska Range loom among wispy clouds off in the distance.

In this setting, the little domes are actually clamshell-shape doors that sit above silos dug 70 feet into the frozen earth. If one of the clamshells ever swings open to release a missile riding a tongue of flame, it will in all likelihood mean that the nation's leadership believes the United States has become the target of a nuclear attack.

The silos are empty, but two huge Manitowoc industrial cranes nearby should soon be outfitting some silos with three-stage interceptors. Once those interceptors, each topped with a bundle of thrusters and optical sensors called a kill vehicle, are hooked into a global network of radars, satellites, computers and command centers, one of Mr. Reagan's biggest dreams will be reality.

Critics of the shield find little hearing at the Pentagon's Missile Defense Agency, headed by Lt. Gen. Ronald T. Kadish, an Air Force pilot with long experience in developing military hardware like fighter jets. "We should not choose to be vulnerable," General Kadish said in an interview. "We have proven that from a technological standpoint and a practical standpoint we can intercept ballistic warheads in flight. And to say now that we can technologically defend ourselves and then choose not to is, in my view, a recipe for failure."

A Space-Age Battering Ram

The first system will rely on interceptors in a handful of silos here at Fort Greeley, an Army base, and at Vandenberg Air Force Base, Calif. In an attack, boosters would release the kill vehicle more than 100 miles above

earth. With a heat-sensitive telescope, the vehicle would search the chill of space for the warhead, then maneuver with its thrusters and try to pulverize the weapon by simply ramming it at speeds faster than 20,000 miles an hour. Even that description does little justice to the complexity of the system, which spans nine time zones and uses 13,000 miles of fiber optics to link sites as varied as a radar installation on the bleak island of Shemya in the Aleutians and in a secret command center at Cheyenne Mountain, Colo. If it works as planned, the system may take the honorary title of the biggest machine ever built from the nation's electrical grid.

As the nation discovered in the blackout last summer, of course, large machines can be unpredictable. The missile defense system, in fact, is so enormous and complex that it may never be fully tested unless an attack occurs. In highly controlled tests, the interceptors scored hits five times in eight tries.

Critics say a true adversary would deploy cleverly designed decoys or metallic chaff or huge balloons around the warhead that would easily confuse the defense.

"It's totally useless," said Dr. Richard L. Garwin, a physicist who has advised the government on security for nearly 50 years and who, in 1998, was on a panel led by Donald H. Rumsfeld, now defense secretary, to assess ballistic missile threats.

Dr. Garwin said the president was "wasting money and he's impairing our security, because it will not work against ICBM's from anyone who has it in for the United States."

Officials at the Missile Defense Agency have said the system was developed to stop what they characterize as unsophisticated threats from budding nuclear powers like North Korea, not the highly developed arsenals of Russia or China. Senator Carl Levin of Michigan, ranking Democrat on the Armed Services Committee, said the election, not any imminent threat, was behind the decision to deploy before full tests.

"It's a date which obviously was set politically so they could say before the election that they've deployed a system," Mr. Levin said. "I doubt that they'll say in that announcement that they'll deploy a system which may or may not work."

Mr. Levin has also sharply criticized the administration's request for more than \$500 million in the 2005 fiscal year to double its arsenal of interceptors, from 20 to 40, before any of the original batch has been tested. The first two tests of the full interceptor are scheduled for this summer.

"This is like deploying a military aircraft missing the wings, the tail and the landing gear," said Philip E. Coyle, a former chief of operational test and evaluation at the Pentagon, who is a senior adviser at the Center for Defense Information. "And without testing to see if that aircraft can do its mission without wings, a tail or landing gear."

The White House has repeatedly said the deployment timetable is based just on the system's technical readiness. Republicans on the Armed Services Committee, including its chairman, John W. Warner of Virginia, have voiced strong support.

The system has also found significant international support. England and Greenland are dedicating some radar sites to the program's early warning system.

In Japan, Parliament recently appropriated \$1 billion toward a missile shield that would involve American-made radars and interceptors aboard its Aegis cruisers. The United States is talking with Australia about placing radar on its soil and more cruisers off its shores. The Bush administration spent \$700 million in the 2004 fiscal year and has requested more than \$1 billion in 2005 to develop the sea-based interceptor system, which would be deployed on American cruisers, as well.

Some experts point out that some of the harshest naysayers have barely changed their criticisms since Star Wars was proposed. That plan featured fanciful — and largely impractical — elements like nuclear-powered lasers based in space. A blanket dismissal on technical grounds no longer resonates as it once did, those experts say.

"Before, it was so grandiose, so complex, so big," said Steven A. Hildreth, a defense specialist at the Congressional Research Service. "There was no real empirical evidence to support the contention that it was possible. Here, with this, at least we have some limited data points that can support the contention that these defenses can hit a warhead and destroy it."

Aspiring to Grandiosity

The system has not entirely abandoned its claims to grandiosity. Beginning some time next year, the Pentagon expects to begin testing an advanced radar built on a heroic scale atop a floating oil platform so that it can rove about the world to provide high-resolution images of mock warheads and decoys in tests — or the real McCoy. At a cost of \$1 billion, the radar will tower nearly 300 feet above the water and include a deck almost the size of two football fields.

After being assembled on the Texas Gulf Coast, the radar will be too large to pass through the Panama Canal. It will have to motor around the tip of South America at an estimated nine knots to its primary base off Adak Island in the Aleutians.

Another futuristic component, an immensely powerful laser mounted in the nose of a Boeing 747 that would fly near hostile countries and try to zap their missiles to oblivion shortly after launching, has been repeatedly delayed by

technical problems. Despite the setbacks, General Kadish of the Missile Defense Agency said, the laser "represents such a revolutionary capability that we are going to stick to it."

Major contractors on the project include Boeing, Bechtel and Raytheon, which is constructing the kill vehicles, each of which weighs 140 pounds and takes 18 to 24 months to build in a warren of high-tech clean rooms in Tucson.

"We're building them as we speak," said Dean Gehr, director of business development for missile defense programs at Raytheon Missile Systems.

Even if all elements of the giant program work just as in the computer simulations that the Pentagon is using to train the people who will operate the shield, some experts do not see the point. The cold war geopolitical landscape in which the system was conceived has shifted out from under it, said Dr. Dean A. Wilkening, director of the science program at the Stanford Center for International Security and Cooperation.

"I don't understand the rush to deploy by 2004," Dr. Wilkening said. "I simply don't see the threat."

But with so much of the elaborate system in place and more on the way, Mr. Hildreth of the Congressional Research Service said, questions like that may no longer matter. "I've sort of seen it as a juggernaut," he said. "It's on a collision course with destiny, if you will."

Armed at the Top of the World

That destiny starts in the Alaskan interior, 100 miles southeast of Fairbanks along a winding highway where Mount Hayes, elevation 13,832 feet, appears suddenly around a bend. A carved wood sign welcomes visitors to Delta Junction, "America's Friendly Frontier." The town has a population of 980, and buffalo burgers are a local delicacy. Why Alaska? "Because it sits at the top of the world," General Kadish said, where the trajectories of virtually all ICBM's attacking the United States would pass. "We can do the job better there, cheaper, in the long run, and be effective whether the warheads are coming from the east or the west."

Building silos and the electronics and communications systems to operate them in this part of the world comes with other challenges, said Lt. Col. John K. Leighow of the Army Corps of Engineers and a deputy district engineer for the Ballistic Missile Defense Support Division.

The ground is loose and shifting, the construction season is short, and winter temperatures can reach 50 or 60 degrees below zero, so cold that tires on stationary vehicles can freeze overnight into irregular shapes and refuse to become round again.

After the first shovel of soil was turned over for the silos two years ago, the schedule left no time for error, Colonel Leighow said, adding: "It was go, go, go. The biggest challenge we've had with this program has been schedule."

A curious-looking yellow building with a white dome, for communicating with the interceptor, was built partly inside an immense cocoon to protect workers from the elements, he said. Hundreds of workers also built a large command center jammed with electronics next to the missile field, and two and a half miles of climate-controlled underground tunnels for pipes and utilities.

A project manager for Bechtel, Mike Hayner, said the shifty soil led contractors to use a novel method to build the silos. They drilled a series of holes 70 feet deep and 3 feet wide around what would become the perimeter of each silo, carefully squirting concrete slurry into each hole as they drilled to keep the holes from collapsing.

After the entire perimeter had been filled with concrete, the workers excavated the middle and outfitted it with a steel silo fabricated in the "lower 48," at the Oregon Iron Works of Clackamas, Ore.

"We are shooting to be on alert by 30 September in response to the president's requirement to be on alert by the end of the year," said Col. Kevin Norgaard, director of the site activation command. "We are where we need to be today, to be there."

The missile defense system is extremely popular in Delta Junction, where the short-term closing of Fort Greeley struck a grave blow to the economy.

As the base reopens, Pete Hallgren, the city manager, said, "The economic impact in our area is massive." In a town where the normal yearly operating budget runs to \$250,000, the Defense Department has earmarked \$25 million to help ease the impact on local services. The money will buy a new grade school, a library, a landfill and a fire station, as well as partly finance a recreation center, Mr. Hallgren said.

"I'm one of those true believers, who always thought we needed one," Mr. Hallgren said of a national missile defense.

<http://www.nytimes.com/2004/05/04/science/04MISS.html>

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Toll From 'Dirty Bomb' Could Be Costly

By Dan Vergano, USA Today

DENVER -- Potential deaths and decontamination costs tied to "dirty bombs" -- conventional explosives laced with radioactive materials -- have been underestimated, a prominent researcher says.

Peter Zimmerman of London's King College, the former chief scientist for the U.S. Senate Foreign Relations Committee, discussed the threat at the American Physical Society meeting here Monday.

Public fears about terrorists armed with such devices increased in 2002 with the arrest of suspected al-Qaeda associate Jose Padilla. Padilla was said by law enforcement officials to be involved in a plot to trigger a dirty bomb in the USA.

At the time of Padilla's arrest, Attorney General John Ashcroft suggested that such a device could "cause mass death and injury." However, radiation experts later testified that deaths from a dirty bomb probably would be few and would come from the explosion, not radiation.

"The truth is somewhere in the middle," Zimmerman says.

He discussed a National Defense University report that based its estimate of deaths from a dirty bomb on a 1987 radioactive waste incident in Brazil. Radioactive cesium powder, released by accident after it was stolen from a medical lab, killed five people and forced 112,000 people to have screening for contamination.

Similar amounts of radioactive material released by a dirty bomb, Zimmerman says, would kill about 150 people from radiation and contaminate more acres of land than was affected in New York by the Sept. 11 terrorist attacks. It's not as hard as it should be to acquire radioactive material, Zimmerman says. The Environmental Protection Agency has reported that U.S. firms lost track of nearly 1,500 radioactive sources in the five decades before 1996, recovering only half of them.

Past estimates of deaths based on the Brazilian incident failed to account for people breathing in or eating dust after a dirty-bomb attack, Zimmerman says, increasing their radiation dose and the death toll. He advises that simple steps to avoid the dust should be provided to the public if such an attack occurs.

The cleanup costs from a dirty bomb would be enormous, says Jaime Yassif of the Federation of American Scientists, who addressed the physicists. "And the public may still refuse to return to a contaminated area."

Controversial EPA assurances about contamination after the World Trade Center attacks, for example, led to widespread distrust among residents who were returning to their homes. More planning must be made for cleanup after a dirty bomb attack, Yassif says.

Last year, an EPA exercise in San Francisco found that decontamination techniques after a dirty-bomb attack must still be identified and standardized.

http://www.usatoday.com/news/nation/2004-05-03-dirty-bomb_x.htm

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