Subject: U.S. Building new nukes
Posted by Blazer on Mon, 07 Feb 2005 07:34:58 GMT
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http://www.nytimes.com/2005/02/07/science/07bomb.html?ex=1108443600&en=545ac52ec1d83ca6&ei=5065&partner=MYWAY

Just thought I would provoke a discussion

"U.S. Redesigning Atomic Weapons
By WILLIAM J. BROAD

Published: February 7, 2005

Worried that the nation's aging nuclear arsenal is increasingly fragile, American scientists have begun designing a new generation of nuclear arms meant to be sturdier and more reliable and to have longer lives, federal officials and private experts say.

The officials say the program could help shrink the arsenal and the high cost of its maintenance. But critics say it could needlessly resuscitate the complex of factories and laboratories that make nuclear weapons and could possibly ignite a new arms race.

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So far, the quiet effort involves only $9 million for warhead designers at the nation's three nuclear weapon laboratories, Los Alamos, Livermore and Sandia. Federal bomb experts at these heavily guarded facilities are now scrutinizing secret arms data gathered over a half century for clues about how to achieve the new reliability goals.

The relatively small initial program, involving fewer than 100 people, is expected to grow and produce finished designs in the next 5 to 10 years, culminating, if approval is sought and won, in prototype warheads. Most important, officials say, the effort marks a fundamental shift in design philosophy.

For decades, the bomb makers sought to use the latest technologies and most innovative methods. The resulting warheads were lightweight, very powerful and in some cases so small that a dozen could fit atop a slender missile. The American style was distinctive. Most other nuclear powers, years behind the atomic curve and often lacking top skills and materials, settled for less. Their nuclear arms tended to be ponderous if dependable, more like Chevys than racecars.

Now, American designers are studying how to reverse course and make arms that are more robust, in some ways emulating their rivals in an effort to avoid the uncertainties and deteriorations of nuclear old age. Federal experts worry that critical parts of the arsenal, if ever needed, may fail.

Originally, the roughly 10,000 warheads in the American arsenal had an expected lifetime of about 15 years, officials say. The average age is now about 20 years, and some are much older. Experts say a costly federal program to assess and maintain their health cannot ultimately confirm

their reliability because a global test ban forbids underground test detonations.

In late November, Congress approved a small, largely unnoticed budget item that started the new design effort, known as the Reliable Replacement Warhead program. Federal officials say the designs could eventually help recast the nuclear arsenal with warheads that are more rugged and have much longer lifetimes.

"It's important," said John R. Harvey, director of policy planning at the National Nuclear Security Administration, which oversees the arsenal. In an interview, he said the goal of the new program was to create arms that are not only "inherently reliable" but also easier to make and certify as potent.

"Our labs have been thinking about this problem off and on for 20 years," Dr. Harvey said. "The goal is to see if we can make smarter, cheaper and more easily manufactured designs that we can readily certify as safe and reliable for the indefinite future - and do so without nuclear testing."

Representative David L. Hobson, an Ohio Republican and chairman of the House Appropriations Subcommittee on Energy and Water Development, praised the program in a speech on Thursday and said it could lead to an opportunity for drastic cuts in the nation's nuclear arsenal.

"A more robust replacement warhead, from a reliability standpoint," Mr. Hobson said, "will provide a hedge that is currently provided by retaining thousands of unnecessary warheads."

But arms control advocates said the program was probably unneeded and dangerous. They said that it could start a new arms race if it revived underground testing and that its invigoration of the nuclear complex might aid the design of warheads with new military capabilities, possibly making them more tempting to use in a war.

U.S. Redesigning Atomic Weapons

Published: February 7, 2005

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"The existing stockpile is safe and reliable by all standards," Daryl G. Kimball, executive director of the Arms Control Association in Washington, said in an interview. "So to design a new warhead that is even more robust is a redundant activity that could be a pretext for designing a weapon that has a new military mission."

The reliability issue goes back to the earliest days of the nuclear era. At first, the bombs were huge and trustworthy. The first one, dropped in 1945, weighed five tons. The first deliverable hydrogen bomb, which made its debut in 1954, weighed four times as much and had hundreds of times the destructive power. It measured nearly 25 feet long from nose to tailfins.

Over the decades, American designers worked hard to trim the dimensions.

Small size was prized for many reasons. It meant that warheads could fit into cramped, narrow

missile nose cones, which streaked to earth faster than blunter shapes and were less buffeted by winds during the fiery plunge, making them more accurate. It also meant that ships, bombers and submarines could carry more nuclear arms.

By the 1970's, warheads for missiles weighed a few hundred pounds and packed the power of dozens of Hiroshima-sized bombs. The arms continued to shrink and grow more powerful. The last one for the nation's arsenal was built around 1990.

Designers had few doubts about reliability because they frequently exploded arms in Nevada at an underground test site. But in 1992, after the cold war, the United States joined a global moratorium on nuclear tests, ending such reassurances.

In response, the federal government switched from developing nuclear arms to maintaining them. It had its designers work on computer simulations and other advanced techniques to check potency and understand flaws that might arise.

The cost of the nuclear program began at $4 billion a year. It is now more than $6 billion and includes a growing number of efforts to refurbish and extend the life of aging warheads.

By the late 1990's, top officials and experts began to openly question whether such maintenance could continue to stave off deterioration and ensure the arsenal's reliability. As a solution, some called for a new generation of sturdier designs.

The new program involves fewer than 100 full- and part-time designers and other experts and support staff, said Dr. Harvey, of the National Nuclear Security Administration.

"There's not a lot of hardware," he added. "It's mostly concept and feasibility studies that don't require much fieldwork."

Dr. Harvey emphasized that the effort centered on research and not arms production. But he said the culminating stages of the program would include "the full-scale engineering development" of new prototype warheads. Both Congress and a future administration would have to approve the costly, advanced work, and an official said no decision had been made to seek such approval.

The current goal of the program, Dr. Harvey said, is to "relax some of the design constraints imposed on the cold war systems." He added that a possible area of investigation was using more uranium than plutonium, a finicky metal that is chemically reactive.

He said the new designs would also stress easier manufacturing techniques and avoid hazardous and hard-to-find materials.

"Our goal is to carry out this program without the need for nuclear testing," Dr. Harvey said. "But there's no guarantees in this business, and I can't prove to you that I can do that right now." Another official, speaking on the condition of anonymity because the topic is politically delicate, said that such testing would come only as a last resort and that the Bush administration's policy was to maintain the moratorium.

The program, Dr. Harvey said, should produce a wide variety of designs. The Defense

Department, which is participating in the effort, will help decide which weapons will be replaced, he said.

"What we're looking at now is a long-term vision," Dr. Harvey said. "We're tying to flesh this out and understand the path we need to be on, and to work with Congress to get a consensus."

Some critics say checking the reliability of the new designs is likely to require underground testing, violating the ban and inviting other nations to do the same, thereby endangering American security.

Dr. P. Leonardo Mascheroni, a former Los Alamos scientist who is critical of the new program, said that it would require not only testing but also changes in delivery systems costing "trillions of dollars" because of its large, heavy warheads. Federal officials deny both assertions, saying the goal is to have new designs fit existing bombers and missiles.

Dr. Mascheroni has proposed that federal designers make lighter, robust warheads and confirm their reliability with an innovative system of tiny nuclear blasts. That would still require a revision of the test ban treaty, he said in an interview, but it would save a great deal of money and avoid the political firestorm that would probably accompany any effort to resume full-scale testing.

Robert S. Norris, a senior nuclear expert at the Natural Resources Defense Council, a private group in Washington that advocates arms control and monitors nuclear trends, said too little was known publicly about the initiative to adequately weigh its risks and benefits, and that for now it raised more questions than it answered.

"These are big decisions," Mr. Norris said. "They could backfire and come back to haunt us."

Subject: U.S. Building new nukes
Posted by Sir Phoenixx on Mon, 07 Feb 2005 15:14:24 GMT
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Does the ban cover detonations in space? Can't they launch/carry them into space and do the tests up there? That would eliminate any radioactive effects on the environment.

They could test the newly designed warheads in space, then test the newly designed missiles/detonators/equipment/etc. on the ground with small conventional warheads.

Subject: U.S. Building new nukes
Posted by DaveGMM on Mon, 07 Feb 2005 17:05:10 GMT
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Sir PhoenixxDoes the ban cover detonations in space? Can't they launch/carry them into space and do the tests up there? That would eliminate any radioactive effects on the environment.

They could test the newly designed warheads in space, then test the newly designed

missiles/detonators/equipment/etc. on the ground with small conventional warheads.

It would?

Gee whiz, I guess gamma rays are a thing of the past then.

Subject: U.S. Building new nukes
Posted by cheesesoda on Mon, 07 Feb 2005 19:23:43 GMT
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Are we forgetting something? Possibly like the O3 in our stratosphere, or does a bomb's explosion create more gamma rays than the sun itself?

Subject: U.S. Building new nukes
Posted by Sir Phoenixx on Mon, 07 Feb 2005 19:53:30 GMT
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Earth has a huge magnetic field, that goes through the north and south poles. This magnetic field deflects a lot of the radiation from space (if it wasn't there, we wouldn't be here as Earth would be constantly bombarded by radiation from the Sun), also, if gamma rays (ionizing radiation) got past this, they would get absorbed very quickly by the atmosphere, so they'd be gone before they can get in far enough to cause any harm.

Subject: U.S. Building new nukes
Posted by JPNOD on Mon, 07 Feb 2005 20:43:51 GMT
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Till the nukes hit a meteor

Subject: U.S. Building new nukes
Posted by cheesesoda on Mon, 07 Feb 2005 20:45:48 GMT
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Sir PhoenixxEarth has a huge magnetic field, that goes through the north and south poles. This magnetic field deflects a lot of the radiation from space (if it wasn't there, we wouldn't be here as Earth would be constantly bombarded by radiation from the Sun), also, if gamma rays (ionizing radiation) got past this, they would get absorbed very quickly by the atmosphere, so they'd be gone before they can get in far enough to cause any harm.
That was my point.

Subject: U.S. Building new nukes
Posted by SuperFlyingEngi on Mon, 07 Feb 2005 21:29:40 GMT
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...As if we don't already have enough nuclear weapons...

For all the money this program will cost, we could spend it on something more useful, like education, or paying back our enormous debt, or heck, even donate it to Southeast Asia.

And Sir_Phoenixx, the problem with detonating nukes in space [the only one I'm aware of] is getting them up there. What if the shuttle carrying nukes up explodes mid-transit? A big shower/cloud of radioactive debris would canvas a HUGE landscape.

Subject: U.S. Building new nukes
Posted by Jecht on Mon, 07 Feb 2005 22:45:06 GMT
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Engi, i believe the plan was to scrap the aged ones and make a few new ones. After all, as a super power we do need them even if they should never be used. This would reduce the cost of the old one's upkeep and in turn we would have LESS nukes. You should be happy about this Engi. Also if a shuttle is destroyed it would not "blow up" a nuke. Nukes cannot be armed until activated. We dont use Atom Bombs any more lol.

Subject: U.S. Building new nukes
Posted by SuperFlyingEngi on Tue, 08 Feb 2005 00:12:51 GMT
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First off, how much waste would throwing away our old nuclear weapons create?

Second, what functions do these new ones offer that we were lacking?

Third, a new nuclear development program could cost an incredible amount of money, and given how many times over we can entirely devastate the earth, what reason is there to spend money on more nuclear weapon?

You seem to have read the section, I only skimmed.

Of course it wouldn't detonate the device. I'm saying it would scatter radioactive material everywhere. Nuclear bombs don't become radioactive only after they're detonated.

Subject: U.S. Building new nukes
Posted by cheesesoda on Tue, 08 Feb 2005 00:19:14 GMT
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You don't need a whole lot of radioactive material to create an effective bomb. Plus, if it's scattered across distances, it's not going to cause any damage. You do realize that just about everything is radioactive. Most rocks are radioactive. Shit, even your glow in the dark watches are radioactive.

Subject: U.S. Building new nukes
Posted by Sir Phoenixx on Tue, 08 Feb 2005 00:29:31 GMT
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Quote:We dont use Atom Bombs any more lol.
Not by themselves, but they're still used inside the hydrogen bombs to start the chain reaction.

Quote:First off, how much waste would throwing away our old nuclear weapons create?
They don't have to throw the nuclear material away, they can be used in the new weapons. This is just to update the old missiles/electronics/etc.

Quote:Second, what functions do these new ones offer that we were lacking?
More reliable, easier to maintain and thus less costly to maintain.

Quote:and given how many times over we can entirely devastate the earth
Assuming they still work, a lot of them are much older then their life expectency.

Subject: U.S. Building new nukes
Posted by PointlessAmbler on Tue, 08 Feb 2005 04:17:54 GMT
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We sure don't need any MORE missiles, but since we seem to just be updating old equipment here, I don't think there's a problem.

Subject: U.S. Building new nukes
Posted by Majiin Vegeta on Tue, 08 Feb 2005 04:30:03 GMT
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Quote:Small size was prized for many reasons. It meant that warheads could fit into cramped, narrow missile nose cones, which streaked to earth faster than blunter shapes and were less buffeted by winds during the fiery plunge, making them more accurate. It also meant that ships, bombers and submarines could carry more nuclear arms.

nothing like 1 nuclear sub with enough firepower to wipe out half the planet

nukes will be the end of our race

Subject: U.S. Building new nukes
Posted by cheesesoda on Tue, 08 Feb 2005 04:35:48 GMT
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No, they won't. In fact, they're what has and probably will continue to save our race. One of the few reasons why neither Russia nor America declared war on another during the heated times of the Cold War was because both sides had enough nukes to decimate the world.

Subject: U.S. Building new nukes
Posted by Doitle on Tue, 08 Feb 2005 04:55:03 GMT
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Glad to hear it, I was wondering what all our poor advanced science degree holding fellows had been doing since the Cold War. Also if you've ever seen a rocket fail, they don't explode in some 15 mile wide explosion. They explode in a neat tidy cylinder and if they are still in the initial stage of launch come down in a neat pile right on the pad.

Also if an explosion were to occur that was to compromise the fissionable material chamber it would not instantly vaporize and travel the world round. Most likely if any were to become fragmented it would fall. Uranium is hella heavy. It takes strong winds just to blow a tiny bit around and we aren't talking about a vapor like was released in chernobyl we're talking particles like sand. You don't see sand flying around in a light breeze do you? It takes a WHOOSH-tastic gust to push Uranium dust about.

That's the Doitle view:

In summary, Yay US, Go Weapons Labs, Rest of the world -> Your next...

Also as a after thought, I'm near positive nuclear detonations in space were banned by the SALT Treaty...

Subject: U.S. Building new nukes
Posted by IRON FART on Tue, 08 Feb 2005 05:23:30 GMT
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Sir Phoenixx
Quote:First off, how much waste would throwing away our old nuclear weapons create?
They don't have to throw the nuclear material away, they can be used in the new weapons. This is just to update the old missiles/electronics/etc.
As long as the Plutonium or enriched Uranium is not used, then it won't be much of a waste at all. This is just a revamp of electronics.

Subject: U.S. Building new nukes
Posted by Blazer on Tue, 08 Feb 2005 10:03:59 GMT

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DoitleAlso if you've ever seen a rocket fail, they don't explode in some 15 mile wide explosion. They explode in a neat tidy cylinder and if they are still in the initial stage of launch come down in a neat pile right on the pad.

You mean like Challengers booster rockets did? :rolleyes:

Subject: U.S. Building new nukes
Posted by Doitle on Tue, 08 Feb 2005 13:43:05 GMT
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Blazer, ever watch ANYTHING Russia ever tried to launch during the space race? Go find yourself a video. Like I said if it fails in the initial stage they come down in a neat tidy firey cylinder.

Subject: U.S. Building new nukes
Posted by Blazer on Tue, 08 Feb 2005 18:19:52 GMT
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That's nice if it explodes when its < 1000 feet off the ground, but what happens when there is a high altitude explosion and there is a load of plutonium etc aboard? It's the reason that we bury nuclear waste instead of shooting it into space...it's not worth the risk.

Subject: U.S. Building new nukes
Posted by cheesesoda on Tue, 08 Feb 2005 18:29:21 GMT
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If the plutonium is spread out far enough, it won't do any damage.

Subject: U.S. Building new nukes
Posted by Blazer on Tue, 08 Feb 2005 19:48:13 GMT
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They say the same thing about fallout.

Subject: U.S. Building new nukes
Posted by cheesesoda on Tue, 08 Feb 2005 19:51:39 GMT
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A lot of things around you are radioactive. Smoke detectors, watches, rocks, glow in the dark

stars, cell phones, etc... Yet, none of these items cause no damage to your health because of how little radiation it gives off. If plutonium is spread out over a wide enough distance, it's not going to do any damage.

Subject: U.S. Building new nukes
Posted by DaveGMM on Tue, 08 Feb 2005 22:09:58 GMT
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Gah, you're right about that, Sir P. I seem to have forgotten about the fact that we have an o-zone

Whoops.

Subject: U.S. Building new nukes
Posted by cheesesoda on Tue, 08 Feb 2005 22:22:48 GMT
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Should say "j_ball" instead of "Sir P."

Subject: U.S. Building new nukes
Posted by IRON FART on Tue, 08 Feb 2005 23:25:46 GMT
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Ha! We should call you js4[p] instead. LOL

Subject: U.S. Building new nukes
Posted by cheesesoda on Tue, 08 Feb 2005 23:27:37 GMT
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Funny.

Subject: U.S. Building new nukes
Posted by Blazer on Wed, 09 Feb 2005 01:35:34 GMT
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And what if instead of exploding high in the troposphere, instead it malfunctions 5 seconds after liftoff and drops a nice big contaminated wreckage in a populated area? Who gets the blame then? How many would die that day? How many would die the next week after succumbing to radiation poisoning? How many decades would that area be uninhabitable?

These are the questions that we don't want to even have to think of the answers for, when considering rocketing thousands of tons of highly radioactive material into space.

Subject: U.S. Building new nukes
Posted by Doitle on Wed, 09 Feb 2005 02:09:00 GMT
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No one. If it exploded 5 seconds after lift off it would be on the pad still. After Ignitition it takes something like an estimated 10 seconds just to get much upwards motion at all. That's when you always see the gigantic cloud of exhaust with it sitting there shaking then it really starts to truck once it gets high in the sky. We also would not be launching these horizontally so the chance of them getting from a remote launch site to downtown anywhere are highly implausible.

Subject: U.S. Building new nukes
Posted by Blazer on Wed, 09 Feb 2005 02:42:23 GMT
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Stop splitting hairs...You know I didn't mean literally exactly 5 seconds...I meant if it exploded or malfunctioned a few thousand feet off the ground versus exploding high in the air.

Most rockets are not launched "straight up"...once they leave the pad they go at a determined pitch, and even if something goes straight up, and explodes, the debris doesnt came falling straight down in an orderly pile.

Take a look at this mapping of where the shuttle debris fell...would you want those zones to be death zones and uninhabitable for the next 100 years?

http://www.sfasu.edu/pubaffairs/Feb2003/Shuttle-debris-path_l.jpg

Subject: U.S. Building new nukes
Posted by Doitle on Wed, 09 Feb 2005 03:56:55 GMT
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I am not a barber,
I split no hairs.

You said 5 seconds so I think we're talking about liftoff here. Earlier we did mention it exploding high in the air. I didn't know exploding high in the air was a totally unique topic from exploding kinda high in the air.

Now, the shuttle is a completely different situation. The shuttle comes in very shallow because eventually it has to land on a run way lol. Airplanes don't come straight down and nose dive into a run way, but missiles do.

If a rocket explodes in mid air the debris come down according to the angle the rocket was traveling in. It's pretty much parabolic if the thrust is lost either through a fuel explosion or a seperation of thrust from the main rocket body. Now these diagrams assume no wind. The wind can only adjust the final ground distance by a bit however the results will in general be as follows. Now you'll notice I did a steep angle launch and a shallow angle launch. The steep angle launch would be what would be employed. A shallow angle launch is really more similar to an airplane take off which is what you encounter in the space shuttle disaster. Essentially it exploded while setting up for an airplane style landing. Our nuclear missiles will not be making 3 point landings so we should not have to worry about any shallow angle physics on them

Now,

You will notice that the rocket explodes and begins to decend, Accordingly that the explosion is at or near the peak of the parabolic flight path the same time to the peak will be taken to reach the ground. You will also notice the ground path traced is relatively small. There is nothing to compare this with other than perhaps the size of the rocket but the y axis is horribly trunctated... lol Assume this is a bit into the flight. It goes up, kablammo and down.

Now the next example,

You will notice in this example the path along the ground is noticeably longer. This would be the situation in a shallow angle launch. Similar to your Space shuttle analogy. However in the space shuttle example the shuttle would have been coming in on a relatively straight trajectory before the exposion. Upon the explosion the trend of a parabolic decent holds true. You will notice that because of the shallower angle there is a much longer ground path. This is how you get the swatch crossing texas in your picture.

If the shuttle had been coming in at a very shallow angle like a rocket on launch the pattern would have been something like as follows

http://www.n00bstories.com/image.fetch.php?id=1165075491

Now however, this would not be the case in one of these proposed launches. I was just trying to establish a basis so even if I can't convince, which I hope isn't true, but as a contingency on the basis that I can't convince you there is no spray of debris in the event of a failure of a launch.

It's actually no small feat to detonate a nuclear device. The atoms do not like being split and they hold onto their energy like a fat kid holds onto cake. Now, if a nuclear device were to be launched in the middle of a big prarie just outside YOUR TOWN, USA... *Bum bum bum*, what do you think would happen? There would be an explosion no doubt, a plume of fire from the remaining propellent, burning grass, a large crater from the force of the impact. Deep within your crater prolly actually lodged in the Earth, would be a pod. This is your war head. Without being Armed, you have a depleted uranium bullet without the depletion... It would sit lodged in the ground and do nothing to no one. Uranium is mad crazy hard and that is why we use it as a slug in the A-10. No body is going to build a missile with the uranium hanging out the side waving at school children. They build these things into their own little pod. Not only so the war head can easily be removed

and replaced like how they build engines on fighter aircraft, but for safety. Nobody wants a big chunk of Gamma death sitting on a table in a lab, in the air or on the ground. That's why they put these things into containment devices. I'm sure you've driven alongside one of these in the back of an unmarked white semi truck or watching containers roll by on a rail way. Especially you Blazer being that you live in the Southwest. All Radioactive Routes lead to New Mexico and Nevada, and your 1/4th of the 4 corners right with New Mexico right? Your also right next door to Nevada.

Now when this device is to explode somewhere in mid flight. We will see a huge fire column of the propellent, we will see a hulk of metal and plastic come flying down and probably propelled by the explosion we'll see this little black luggage looking thing just sailing along. That is your war head. It could be dangerous if it lands on someone as that would surely be fatal. It would also probably wreck a house or car much like a tiny tiny asteroid. It would not spell nuclear death for half of Texas. The situation would be similar to if you've ever seen a Top Fuel Dragster crash. The fiber glass body breaks off, the wheels break off, and you are left with 2 things flying down the track, a human pod in a roll cage, and a 300MPH chunk of metal, the engine. The entire engine is set to rip away from the car and get far away. If you've ever seen it it's pretty cool, you see this thousand pound chunk of metal BOUNCING along the road surface because it has so much force. This is exactly what you have, a flying Engine block. lol... I hope I've quelled your fears for the destruction of our race by attempting to progress weapons technology.

This has been a Doitle production.

With NO THANKS TO THE CHUB GROUP... Way to bail on me guys...

Subject: U.S. Building new nukes
Posted by sloppyme on Fri, 11 Feb 2005 08:03:23 GMT
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j_ball430You don't need a whole lot of radioactive material to create an effective bomb. Plus, if it's scattered across distances, it's not going to cause any damage. You do realize that just about everything is radioactive. Most rocks are radioactive. Shit, even your glow in the dark watches are radioactive.

My knowledge of nukes is only what I learned from pushing them around while serving on subs. The latest nukes have been primarily neutron types that leave little radiactive debrie and most buildings would still be intact after they detonate overhead. They don't have quite the blast effect of earlier bombs. However, the huge kill radius is a result of being toasted to a crisp or having too many cells in your body being ruptured from the overload of neutrons passing through. The farther away you are or how shielded you are determins your survivability. Nuetrons particles can really penatrate. Infact, you have neutrons particles (& gamma) passing through your body whenever you expose yourself to the sun. If you spend too much time in high altitude aircraft, you are exposed to a lot more of them.

These weapons are harder to maintain because of a certain gas needed (I'm still not supposed to disclose what type but you can find it easy enough with a little research) to make them effective. These nukes have a shorter life span because this gas dissapates or changes chemically over

time.

Subject: U.S. Building new nukes
Posted by sloppyme on Fri, 11 Feb 2005 08:41:44 GMT
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BlazerThat's nice if it explodes when its < 1000 feet off the ground, but what happens when there is a high altitude explosion and there is a load of plutonium etc aboard? It's the reason that we bury nuclear waste instead of shooting it into space...it's not worth the risk.

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These weapons are harder to maintain because of a certain gas needed (I'm still not supposed to disclose what type but you can find it easy enough with a little research) to make them effective. These nukes have a shorter life span because this gas dissapates or changes chemically over time. The actual package of explosives & radioactive materials is about the size of a basketball. There is more conventional explosive material then radioactive material. The conventional explosive (like c-4) make up most of the container (sphere) that surrounds the plutonium with the special gas in the center. It is the even detonation of the surrounding c-4 like explosive to such perfection that causes the radioactive material to be pushed to the exact center to get the proper yeild of the chain reaction that happens in an instant.

If this basketball sized core is somehow ripped out of a missle or whatever, it has lost all the timing triggers and electronics that detonate the inner core. So, if a missle should break apart in the sky, you have more to worry about chunks of plastic explosives landing on you then exposure to rad materials. Yes, the radioactive materials can harm you if you inhale or ingest them but they can be washed off so you can survive provided you do so in a timely manner.

Should core detonate because of re-entry friction or impact it would, at worst, only result in a partial yeild. This, as it was told to me, would be quite difficult to achieve since any detonation without the proper or perfect timing sequence will most likely result of sending the radioactive elements & gas in different directions without any nuclear yeild at all. The gas would dissapate and the chunks of rad material could be cleaned up and disposed of.

The burial of nuke waste is mainly to isolate and preserve the containers it is in. You have to remember that some of this stuff has a half life over 238 years. Some materials could be used to make the dirty type bombs so they need to be secure from theft. There may be an event of some sort that would compromise these containers on the surface; deep underground storage reduces the risk of breaching containment while providing greater security.

Subject: U.S. Building new nukes
Posted by Sir Phoenixx on Fri, 11 Feb 2005 14:21:16 GMT
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Quote:http://www.sfasu.edu/pubaffairs/Feb2003/Shuttle-debris-path_l.jpg
That's the debris path of the Columbia when it exploded as it re-entered. Shuttles launched from Cape Canaveral are launched towards the east over the ocean, and the only shuttle that blew up on launch was the Challenger, which blew up over the Atlantic, where the vast majority (if not all) of it's debris fell. Since the smaller Challenger debris fell into the water, then something as heavy as a warhead with uranium, which would be much heavier would also fall into the water.

Quote:And what if instead of exploding high in the troposphere, instead it malfunctions 5 seconds after liftoff and drops a nice big contaminated wreckage in a populated area? Who gets the blame then?
No one... Unless someone tries to colonize the Atlantic near Cape Canaveral.

Quote:How many would die that day?
None, besides the shuttle crew.

Quote:How many would die the next week after succumbing to radiation poisoning? How many decades would that area be uninhabitable?
Since everyone would be shielded from the radiation by hundreds of feet of water, none. And I wasn't aware that the Atlantic was inhabitable to begin with...

Subject: U.S. Building new nukes
Posted by Doitle on Sat, 12 Feb 2005 01:12:22 GMT
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lol theres like 4 posts here for you Blazer, respond!

Subject: U.S. Building new nukes
Posted by warranto on Sat, 12 Feb 2005 02:24:02 GMT
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http://en.wikipedia.org/wiki/Nuclear_fallout

Subject: U.S. Building new nukes
Posted by Doitle on Sat, 12 Feb 2005 03:20:57 GMT
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What a pretty Wiki. Mind explaining its relavence at all?

Subject: U.S. Building new nukes
Posted by Blazer on Sat, 12 Feb 2005 06:15:24 GMT
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I'm not talking about warheads that explode in the air. I was referring to a payload of nuclear *waste* exploding in the air. Nuclear waste will never be shot into space, because if there was an explosion it would rain down death from above. Your analogy of a nuclear missile exploding in the air and the warhead falling and not doing much damage is correct, but thats not what I was talking about

Subject: U.S. Building new nukes
Posted by warranto on Sat, 12 Feb 2005 19:13:50 GMT
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DoitleWhat a pretty Wiki. Mind explaining its relavence at all?

The point it makes about a explosion in the air, opposed to one lower to the ground, dictated by the subsections entitled "world-wide fallout", and "local fallout".

The discussion had started talking about missiles exploding in the air, and those specific subsections give a discription as to what would occur.

Subject: U.S. Building new nukes
Posted by Jaspah on Sat, 12 Feb 2005 20:04:43 GMT
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IRON-FARTHa! We should call you js4[p] instead. LOL

Fuck you.

Subject: U.S. Building new nukes
Posted by cheesesoda on Sat, 12 Feb 2005 20:21:54 GMT
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j4S[p], he wasn't being mean. He was just referring to the time where he typed my name instead of yours.

Subject: U.S. Building new nukes
Posted by Doitle on Sun, 13 Feb 2005 06:14:03 GMT
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Right, however a mid air explosion of a nuclear missile does not rain down fall out as I've said like

15 times. You would have a giant "engine block" of a war head falling from the sky and digging itself like 30 feet into the ground. It's a really heavy chunk of metal. That's it. Just because there's an explosion doesn't mean it'll do Didly to the warhead. They're designed to withstand mad crazy duress for exactly this reason.

Subject: U.S. Building new nukes
Posted by Blazer on Sun, 13 Feb 2005 08:17:12 GMT
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I say *again*, I am not disputing that. If you go back to page one, note that besides my initial post, I have been talking about a rocket carrying a payload of nuclear waste exploding (a topic which was injected into the thread by someone else, which I replied to). I totally agree if a nuclear missle exploded in the air there would be little for people to worry about (except for maybe the one house that the debris would fall on).

However, if a rocket carrying a payload of nuclear waste exploded in the air, the results would be ... bad.

Subject: U.S. Building new nukes
Posted by Sir Phoenixx on Sun, 13 Feb 2005 13:41:23 GMT
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Uh, no, that discussion was about launching nuclear warheads into space to test them, not disposing of nuclear waste in space. No one mentioned launching nuclear waste until your post.

Also, nuclear waste is currently transported in containers that can survive direct hits from high speed trains, ramming into a wall by a rocket sled, large explosions, sitting in fire for some time, falling to the ground, etc., without any cracks or openings at all.

They'd probably need to be strenghtened and tested for high altitude drops, and higher temperatures/re-entry though.

Subject: U.S. Building new nukes
Posted by Doitle on Sun, 13 Feb 2005 17:46:02 GMT
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Blazer, that "as I've said like 15 times." post was directed at Warranto, sorry for the confusion.

As Sir Pheonix has said though, those containers are so insanely damn strong you couldn't destroy one if you tried. lol

Subject: U.S. Building new nukes

Posted by warranto on Sun, 13 Feb 2005 17:55:15 GMT
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Ah, I see. An explosion caused by the missile itself blowing up, not an explosion caused by the warhead detonating.

Subject: U.S. Building new nukes
Posted by Doitle on Mon, 14 Feb 2005 02:14:45 GMT
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Right, and the chances of the warhead detonating are like

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I think it sounds like a pretty safe idea to me, besides the fact that again, I thought that one of the SALTs decklared that space was for everyone and there could be no military actions in space.

Subject: U.S. Building new nukes
Posted by SuperFlyingEngi on Mon, 14 Feb 2005 02:17:37 GMT
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I thought it was the nuclear waste containers that were built so durably, not the warheads. I've heard a story of when scientists testing one of these waste containers decided to ram it with an 80 mile an hour train. The canister was unharmed, but the train recieved an enormous dent for its troubles.

Subject: U.S. Building new nukes
Posted by Doitle on Mon, 14 Feb 2005 03:21:15 GMT
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They design both with skill. The waste containers are unbeleivable. You could prolly only knick one by dropping it into the sun... lol. The warheads however are built in a durable and secure fashion as well. Nobody wants free radiation and no body wants your fissionable fuel falling out of a rust spot. That's why they build those very well too.

Subject: U.S. Building new nukes

Posted by warranto on Mon, 14 Feb 2005 03:29:45 GMT
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Because of the destructive ability of the warheads, they are near impossible to detonate outside of their intended time period. That's why there is that distinguishment between the missile exploding, and the warhead exploding.

The only way it would explode is if the jolt set off the timing mechanism so that both atoms fired at the same time.

Subject: U.S. Building new nukes
Posted by Doitle on Mon, 14 Feb 2005 03:39:33 GMT
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Again they have so many redundancy systems and things. I would imagine it is impossible to accidentally detonate. I mean there are like 70,000,000 checks and failsafes on a nuclear missile. After all the people who design these things, ARE rocket scientists .

Subject: U.S. Building new nukes
Posted by Jecht on Mon, 14 Feb 2005 04:41:19 GMT
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ya guys, its not like this is brain surgery , its only rocket science

im sorry, i know thats a bad joke.