

an equipment company to serve in Iraq, and it took her a year to find a job she was happy with as an editor at The Sheridan Press in Hanover, Pa. "You send out a lot of resumes. You try to do everything you can do, but it's really hard to account for the time you are in Iraq, and really to try to make that, the things you were doing in Iraq relevant to what an employer is looking for today," Angell said. Sgt. Benjamin Lewis, 36, who also lost a stepson to the War in Iraq, was a civilian chef who worked at a restaurant in Ann Arbor, Mich., that burned down while he was deployed in Iraq with the Michigan National Guard, said some employers directly told him they could not hire him because he could be deployed again and needed weekends and time off in the summer for drilling. Others, he said, asked if he struggled mentally because of his time at war. He got so desperate he considered returning to Iraq with a new unit. It is because of cases such as these and many others throughout our nation that I am a proud cosponsor of H.R. 1352, the Veterans Employment and Respect Act offered by my colleagues Representatives ALLYSON SCHWARTZ and JOE SCHWARZ. This vital legislation already has 161 Congressional cosponsors and would give companies up to \$2,400 in tax credits for each veteran from the Afghanistan and Iraq wars that they hire. Unfortunately, we may be able to give companies incentive to hire recent war veterans but it seems we can not get this Administration to put the same effort in looking after our veterans in the first place.

As soldiers return home from serving in Iraq and Afghanistan the need for medical care, living assistance, and disability benefits are steadily increasing. This puts a strain on an already-overburdened Veterans Administration, which has not been adequately funded by the Bush Administration to meet these challenges. The fact is that more than 30,000 veterans are waiting six months or more for an appointment at VA hospitals, and there are more than 348,000 veterans on the waiting list for disability claim decisions. This President has long ignored pressing domestic concerns for a war that did not need to be fought and for which so many good American men and women have given their lives.

It was our second President John Adams who aptly said: "Great is the guilt of an unnecessary war." Unfortunately for our nation, our current President has not felt the weight of this guilt, for if he had our loved ones in the Armed Forces would be home now. This Administration told us that the international community would join us in Iraq; they said the world would be a better place because of this war and then they said major combat in Iraq was over. Today as we see our men and women every day giving their lives in Iraq, we know that this war has only caused a greater divide between our nation and the international community, this war has only increased hatred for our nation, it has not made us safer as promised, it has in fact put us in greater danger. President Abraham Lincoln speaking after the conclusion of the Civil War, gave a vision for our nation that I hope we can follow today, he said: "With malice toward none; with clarity for all; with firmness in the right, as God gives us to see the right, let us strive on to finish the work we are in; to bind up the nation's wounds; to care for him who shall have borne the battle, and for his widow, and his orphan-

to do all which may achieve and cherish a just, and lasting peace, among ourselves and with all nations." Before I conclude I would like to take time to read some of the names of the soldiers from Houston who have given their lives in Iraq and honor them with a moment of silence.

Spc. Adolfo C. Carballo, 20, Houston, Texas Died: April 10, 2004, Baghdad, Iraq.

Pfc. Analaura Esparza Gutierrez, 21, Houston, Texas Died: October 1, 2003, Tikrit, Iraq.

Spc. John P. Johnson, 24, Houston, Texas Died: October 22, 2003, Baghdad, Iraq

Spc. Scott Q. Larson, 22, Houston, Texas Died: April 5, 2004, Baghdad, Iraq.

Sgt. Keelan L. Moss, 23, Houston, Texas Died: November 2, 2003, Al Fallujah, Iraq.

Pfc. Armando Soriano, 20, Houston, Texas Died: February 1, 2004, Haditha, Iraq.

Cpl. Tomas Sotelo Jr., 20, Houston, Texas Died: June 27, 2003, Baghdad, Iraq.

Staff Sgt. Brian T. Craig, 27, Houston, Texas, April 15, 2002, Afghanistan

Capt. Eric L. Allton, 34, Houston, Texas September 26, 2004, Ramadi, Iraq.

Capt. Andrew R. Houghton, 25, Houston, Texas August 9, 2004, Ad Dhuha, Iraq.

Lance Cpl. Thomas J. Zapp, 20, Houston, Texas November 8, 2004, Al Anbar Province, Iraq.

Cpl. Zachary A. Kolda, 23, Houston, Texas December 1, 2004, Al Anbar Province, Iraq.

Staff Sgt. Dexter S. Kimble, 30, Houston, Texas January 26, 2005, Ar Rutba, Iraq.

Pfc. Jesus A. Leon-Perez, 20, Houston, Texas January 24, 2005, Mohammed Sacran, Iraq.

(Moment of Silence.)

Ms. WATSON. Mr. Speaker, we have spent over \$200 billion so far on the war in Iraq. According to the Congressional Budget Office, by 2010, our expenses might be as much as \$600 billion.

The two hundred billion dollars we have spent so far would be enough money to provide health care for the 45 million Americans without health insurance.

That two hundred billion dollars would permit us to hire three and a half million elementary school teachers.

That two hundred billion dollars for the war in Iraq is going on America's credit card and that goes right to the deficit—a debt to be paid by our children and grandchildren.

All this might be worth it if we had something to show for it. I think two hundred billion dollars for peace and democracy is a bargain.

But we haven't gotten peace and democracy. That two hundred billion has bought us: over seventeen hundred dead Americans; an unknowable number of Iraqi civilian deaths; a dysfunctional country that cannot move its political process forward; a new haven and proving ground for anti-American extremism; a wellspring of mistrust from longtime friends and allies around the world; and a devastating erosion of American leadership and credibility.

So what are we still doing there? The President says we are pursuing our "ultimate goal of ending tyranny in our world." But the President has dragged onto a path that, at best, muddles that message.

We are building our nation's largest embassy in Iraq; even before it is complete, we have more than 1,000 embassy staff in Iraq. What is the average Iraqi on the streets of Fallujah—or average Jordanian on the streets of Amman—going to think when he sees that

we are building the Largest American Embassy in the World in Baghdad?

I am sure the average Iraqi does not mourn the savage brutality of Saddam Hussein's regime. The question is whether he equates our never-ending American presence in Iraq with a new form of tyranny, rather than the freedom the President says he seeks to spread.

The underlying problem with our endless occupation of Iraq—a country that does not threaten the United States—is that it undermines our leadership on issues that DO threaten the United States. North Korean and Iranian nuclear weapons, global terrorism, emerging deadly international diseases—all these issues are imminent threats that we must confront. Our ability to convince other nations to join us in boldly confronting these threats has been hobbled both by our deceptive entry into Iraq and our lingering departure from it.

Mr. Speaker, our Iraq policy has become a festering wound that bleeds away more and more of America's wealth, America's security, America's leadership, and even America young men and women in uniform. I ask all my colleagues to join me in asking the President seek an exit from this venture at the earliest possible moment.

#### MESSAGE FROM THE SENATE

A message from the Senate by Mr. Monahan, one of its clerks, announced that the Senate has passed a bill of the following title in which the concurrence of the House is requested:

S. 1282. An act to amend the Communications Satellite Act of 1962 to strike the privatization criteria for INTELSAT separated entities, remove certain restrictions on separated and successor entities to INTELSAT, and for other purposes.

#### ELECTROMAGNETIC PULSE

The SPEAKER pro tempore (Mr. FITZPATRICK of Pennsylvania). Under the Speaker's announced policy of January 4, 2005, the gentleman from Maryland (Mr. BARTLETT) is recognized for 60 minutes.

Mr. BARTLETT. Mr. Speaker, what I want to spend a few moments talking about this evening is something that will be new to most Americans. They will not have heard about this subject. Indeed, nobody knew about this until 1962; that is, no one in this country knew about it.

There was an experiment over Johnston Island out in the Pacific Ocean that was called Operation Starfish. It was part of a series of nuclear tests that were called the Fishbowl Series. This was a unique one. The others had all been at ground level or some little distance above the ground. This one was an extra-atmospheric, a detonation above the atmosphere.

Nobody knew what was going to happen. It was the first time we had detonated a nuclear weapon in a test series above the atmosphere, and there were a number of ships and airplanes and radar, theater-like, that were tracking the missile that launched this nuclear bomb and noted its explosion. The explosion occurred about 400 kilometers

above Johnston Island. That is well above the atmosphere.

Now, the Soviets have had very extensive experience with this kind of testing. This was our first and, indeed, our only experience with this. So our knowledge about this phenomenon comes from this single test, what we have learned from the Soviets and now the Russians and the number of simulations that we have done since that time.

There were no diagnostics to test the effects on Hawaii, which was about 800 miles away, because nobody expected there to be any effect there. Many of the instruments we were using for testing around Johnston Island were pegged; that is, they did not have enough capacity to register the effects that were produced by this extra-atmospheric explosion.

What happened in Hawaii may be open to some controversy, but there were some lights that went out. This was largely electrical. In those days it was not all of the electronics that we have today. A number of lights went out, and in the last couple of years, some of the evidence of what happened to that equipment was shown to a commission that I will talk about in a little bit that was set up in 2001 to investigate this phenomenon, and they submitted their report in 2004.

This phenomenon that we observed there that exceeded the capacity of the instruments at the test site, that went all the way, 800 miles away, to Hawaii, have been called electromagnetic pulse, EMP. We have learned since then that every extra-atmospheric explosion produces an EMP. You can develop a nuclear weapon, as we designed but as I understand never built and the Soviets both designed and have built, enhanced EMP weapons that limit the explosion but increased the electromagnetic effects.

What are the implications of EMP and why are we talking about it tonight? EMP could be probably the most asymmetric weapon that any adversary could use against us. By asymmetric, we mean a weapon that has a relatively small impact in terms of its local effect but could have an enormous impact on our military or our society because of its effect.

There are a number of asymmetric weapons. Terrorism is an asymmetric weapon. It does not cost them much money or take very big explosives, but it has a big effect on us. 9/11, of course, was a major asymmetric attack on us because those few people in those four airplanes have cost us billions and billions of dollars and totally changed our society. This is an example of an asymmetric attack.

Most Americans will not know about electromagnetic pulse and what it could do to our military, to our society, but I will guarantee my colleagues, Mr. Speaker, that all of our potential enemies know everything about EMP. In a little bit, I will show you some quotes from countries that

could be our enemy that will indicate that they know all about EMP.

In 1999, I was sitting in a hotel room in Vienna, Austria. We were there near the end of the Kosovo conflict. There were eleven Members of Congress there, several staff members, three members of the Russian Duma and a personal representative, Slobodan Milosevic. We developed a framework agreement for ending the Kosovo conflict that was adopted 8 days later by the G-8.

One of the Russians who was there was a very senior Russian. His name is Vladimir Lukin. He was the ambassador to this country at the end of Bush I and the beginning of Clinton. At that time he was chair of their equivalent of our Committee on International Relations, a very senior and very respected Russian. He is a little short fellow with short arms and stocky build.

He sat in that hotel room in Vienna for 2 days with his arms folded across his chest, looking at the ceiling. He was very angry. He said at one point, You spit on us; now why should we help you?

What he meant by that was that the United States, the Clinton administration at that time, had indicated to the Russians that they really were not needed to help resolve this conflict, that we were big boys and we would handle this on our own. It soon became obvious to the Clinton administration that the only country in the world that had the real confidence of the Serbs was Russia, and they were added to the G-7 to make the G-8, which 5 days after we came back resolved the Kosovo conflict with the framework agreement that we had developed there.

The statement that Vladimir Lukin made was a startling statement. The chairman of our delegation was the gentleman from Pennsylvania (Mr. WELDON) who had been to Russia thirty-some times and he speaks some Russian and understands more. When Vladimir Lukin was speaking, he turned to me and said, Did you hear what he said? Yes, I heard what he said, but of course, I did not understand it; I just heard Russian words.

When it was translated, this was what he said, and by the way, he did not need a translator. Vladimir Lukin speaks very good English, but when you are talking with these folks, they frequently will speak in their native tongue so it has to be translated and then translated back to them when we speak so that gives them twice as long to formulate their answer. So if you do not know both languages, you are at somewhat of a disadvantage in dialoguing with them because they have twice as long to formulate an answer.

This was what surprised the gentleman from Pennsylvania (Mr. WELDON), and this is what he said: If we really wanted to hurt you, with no fear of retaliation, we would launch an SLBM. That's a submarine-launched ballistic missile. We would launch an

SLBM. We would detonate a nuclear weapon high above your country, and we would shut down your power grid for 6 months or so.

Now, he made the observation that without fear of retaliation, because you would not know for certain where it came from, particularly today. Factor in the Cold War with only two superpowers, we absolutely would have known where it came from, but today, how would you know? There are many countries out there who can get a tramp steamer and a Scud launcher and a crude nuclear weapon and that is all it would take to produce an EMP attack because a Scud launcher goes about 180 miles apogee, and that is plenty high. It would not cover all of the United States, of course.

The third ranking Communist was there, a handsome, tall, blond fellow by the name of Alexander Shurbanov, and he smiled and said, if one weapon would not do it, we have some spares. I think at that time it was something like 7,000 spares that they had.

This was a very startling remark, and what it said was that the detonation of a single, large, appropriately designed nuclear weapon above our country could shut down our power grid and shut down our communications, he said, for 6 months or so. If that were true, and there is increasing evidence, as I will indicate, from the report that this commission gave us that it is true, that would mean that you would be in a world, Mr. Speaker, where the only person you could talk to was the person next to you unless you happened to have a vacuum tube handset, then you could talk because they are about a million times less susceptible to EMP than our current microelectronic systems, and the only way you could go anywhere was to walk.

Several years ago, we had a field hearing at Johns Hopkins University applied physics lab, and a Dr. Lowell Wood was there. I met Dr. Lowell Wood through Tom Clancy who lives on the eastern shore of Maryland and I know him. He has come to do several political events for me. I knew that he had done a book where EMP was a part of the scenario, and I knew he did very good research and he could tell me something about EMP. This was several years ago.

I called Tom Clancy and I asked him, and he said, gee, if you read my book you know all about EMP that I know, but he said let me refer you to the smartest man hired by the U.S. government. He referred me to a Dr. Lowell Wood from Lawrence Livermore Laboratory in California. We got his pager number. In those days it was pagers rather than cell phones that are so ubiquitous today, and I paged him, believing that he was in California. The pager signal went up to a satellite and back down, and he was in Washington, and within an hour, he was sitting in my office.

Dr. Lowell Wood at this field hearing out at the applied physics lab out in

Howard County made the observation that an EMP lay down would be the equivalent of a giant continental time machine that would move us back a century in technology. What this would mean, of course, is that we would have no more capability for moving around, for communicating to each other, for plowing our fields, for moving our equipment and our food around than we had 100 years ago.

I said that, Dr. Wood, the population we have today, 285 million people and its distribution, largely in large cities and suburbia, could not be supported by the technology of a century ago. His unemotional response was, Yes, I know.

□ 2130

The population will shrink until it can be supported by the technology. The point I am trying to make is this could be a devastating asymmetric weapon. It may not be known to most Americans. I suspect not one in 100 have heard of nuclear electromagnetic pulse, but I can assure Members that all of our potential enemies know a great deal about EMP.

The first chart shows the effects of a single nuclear weapon. This one is detonated in the northwest corner of Iowa, and it blankets all of the United States.

The colors here indicate the intensity of the pulse you get from that. The purple as you can see from the scale is 50 percent. So what this says is whatever the intensity was at ground zero, and we are several hundred miles above that, but the intensity at that level which is the red here in the center, will be half that out at the margins of our country.

This little smile here and the distortion here is due to the magnetic field of the Earth that bends the electrons that I will describe in just a moment.

What is this electromagnetic pulse? It is produced from strong gamma rays from the nuclear explosion which produce electrons that move at the speed of light. They move now to everything within line of sight. If you are about 3 or 400 miles high over the center of the country, Iowa or Nebraska, that will blanket all of the United States.

If the voltage is high enough, it will disrupt or fry these microelectronics.

Mr. Speaker, if you want to work on the inside of your computer, you need to be very careful that the static electricity that you produce just by rubbing your clothes together will not damage it. You need to put a little wrist band on and ground yourself. At factories where most of these computers are made, and it is almost all women that I have seen there, this is one area where women do it better than men, and they are grounded to the floor. They have a metal anklet on, and they are grounded to the floor because static from just their movement could damage these very sensitive, very tiny microelectronics.

A little later I will show a chart that says the interview with some Russian generals have indicated that they have weapons that can produce 200 kilovolts per meter. They told us, and I cannot tell Members the exact voltage to which we have harkened, but I can say that the Russian generals told us they believe that this signal was several times higher than the voltage to which we had hardened. And even out at the periphery with 50 percent degradation, it was higher than we had hardened. By "hardening" I mean we have put some buffers in there that would intercept this pulse, like the surge protectors that we have for our computers which we have for lightning which will do no good for EMP because this pulse has such a rapid rise time measured in nanoseconds.

This pulse will be through the surge protector before the protector sees it. If you are 200 kilovolts at ground zero, it is 100 out at the periphery, and that is probably enough to weld, to fry all of our microelectronics, which is why Vladimir Lukin said they would detonate a nuclear weapon high above our country, shut down our power grid and our communications for 6 months or so.

From chart 2, I want to give some quotes from potential enemies to indicate that I am not letting the genie out of the bottle this evening. They know all about it. Not one in 50 Americans may know about EMP, but I want to assure Members our potential enemies know all about EMP.

This first quote is the quote that I heard myself sitting in that hotel room in Vienna, Austria when Vladimir Lukin said they could shut down our power grid and our communications. That was May 2, 1999. There were 10 other Congressmen there and several staff members.

Chinese military writings describe EMP as the key to victory and describe scenarios where EMP is used against U.S. aircraft carriers in a conflict over Taiwan. It is not like our potential enemies not only know about it. And they know that we know about it, so they feel free to put it in their public writings.

A survey of worldwide military and scientific literature sponsored by the EMP commission was set up, and they functioned for 2 years. They submitted a report and they are now continuously briefing additional entities, different organizations and people. They found widespread knowledge about EMP and its potential military utility, including in Taiwan, Israel, Egypt, India, Pakistan, Iran, and North Korea. Iran has tested launching a scud missile from a surface vessel, a launch mode that could support a national or transnational terrorist EMP attack against the United States.

By the way, we thought that launch was a failure because the device was detonated before it reached land. Now, that is exactly what you would do if you were rehearsing an EMP attack.

By the way, there is no way that a nuclear weapon could do anywhere near as much damage against a sophisticated country like ours by dropping it on one of our cities as you could do to our country by detonating it at altitude. And you would not know it happened unless you were looking at it.

We are totally immune to EMP. It will not hurt us or damage buildings. All it does is to knock out all of our microelectronics, which means all of our computers. For instance, your car has several computers. Indeed, if you have a new car, they cannot even work on it in a shop without hooking it up to a computer to tell what is wrong with the vehicle. So an EMP with a high enough pulse would fry the computers in the car. They would not run. If you happen to have an old car with a coil and a distributor, that is probably less susceptible to EMP.

This chart shows additional quotes: "If the world's industrial countries fail to devise effective ways to defend themselves against dangerous electronic assaults, they will disintegrate within a few years. 150,000 computers belong to the U.S. Army. If the enemy forces succeed in infiltrating the information network of the U.S. Army, then the whole organization would collapse. The American soldiers could not find food to eat nor would they be able to fire a single shot." This is from Iranian Journal, December 1998.

"Terrorist information warfare includes using the technology directed energy weapons or electromagnetic pulse." This is from Iranian Journal of March 2000.

Terrorists have attempted to acquire non-nuclear radio frequency weapons. These are the weapons that would produce the directed energy effect. These produce a similar kind of pulse to EMP but does not have the broad spectrum. It only has part of the frequency involved. But if intense enough, if set up in this room, for instance, it could fry the computers in the cloak room which is not that far away. If it was set up in a van and went down Wall Street, if it were a really sophisticated device, it could take out all of the computers there, which would shut down our trading for quite a while if they were all taken down.

Some people might think that things similar to a Pearl Harbor incident are unlikely to take place during the Information Age. And this is a writing from China. Yet it could be regarded as a Pearl Harbor incident of the 21st century, if a surprise attack is conducted against the enemy's crucial information systems of command, control, and communication by such means as EMP weapons. Even a superpower, China says, like the United States, which possesses nuclear missiles and powerful armed forces, cannot guarantee its immunity. In their words, an open society like the United States is extremely vulnerable to electronic attacks. This is May 14, 1996 from a Chinese journal.

Iran has conducted tests with Shahab-3 missiles which have been described as failures. I mention that because they detonated it before it reached the ground. That is exactly what they would do if they were planning for an EMP attack. Iran Shahab-3 is a medium-range mobile missile that could be driven onto a freighter and transported to a point near the United States for an EMP attack.

By the way, an EMP laydown is always an early event in Chinese and Russian war games because it is the most asymmetric attack that they could lodge against our country.

Just a little bit of a time line here. Operation Starfish occurred in 1962. In 1995, there was a very interesting event that nearly started World War III. It has been written up in several books now. Most people never knew about it, but the Norwegians launched an atmospheric test rocket. They are fairly close to Russia, and they told the Russians that they were launching this rocket; but in the bureaucracy of Russia, that did not get communicated to the right people and when they launched it, it was interpreted as a first salvo from the United States. You do not have very long to respond if your enemy is about a half hour away in terms of these ballistic missiles. The Russians came very near to launching a major salvo of missiles with nuclear warheads on them against our country. This was a very narrow brush with destiny that tells us how important it is that we understand the potential of these weapons and how they could be misunderstood by an enemy.

In 1997, I sat in a hearing here on Capitol Hill and General Marsh was there. He was the general in charge of the President's Commission on Critical Infrastructure. He was looking at the critical infrastructure of our country and its vulnerability to enemy attack. I asked him if he had looked at EMP. He said, yes, he did. Well? Well, the commission thought there was not a high probability there would be an EMP attack, so they had not considered it any further.

My observation to that was, Gee, if you have not already, I am sure when you go home tonight you are going to cancel the fire insurance on your home because there is not a very high probability that your home will burn.

When you have an event like a potential fire in your home or an EMP attack, which is a very high-impact, but low-probability, event, that is just the kind of an event that you purchase insurance to protect you from. It is unlikely to happen; but if it happened, it would be so devastating you would need insurance to cover that.

Mr. Speaker, what we need is the equivalent in our country of the insurance policy that you bought on your home. We need to make an investment in the equivalent of an insurance policy so we will be able to anticipate if we can survive an EMP attack.

□ 2145

In 2001, we had some very interesting tests at Aberdeen with a directed energy weapon that was put together. This was really interesting, because we asked these engineers to put together the kind of a weapon that terrorists might put together if they were buying equipment only from Radio Shack. So they went to places like Radio Shack and they bought the equipment and they put it together in this van that could go down the street and it was kind of camouflaged so it was not sure what it was and this directed energy weapon had the ability to take out microelectronic equipment at considerable distance from it.

In 2001 because of my concerns about the potential for EMP, I had put in the authorization that year legislation that set up a commission to look at this eventuality. The next chart shows the commissioners that were on this. These are all very well known people. The first person that heads the list there is Dr. Johnny Foster who is the father of most of our modern nuclear weapons. He is the Edward Teller of today. Another one of our commission members, Dr. Lowell Wood that I have mentioned already, kind of inherited the mantle of Edward Teller. There were several other people. They had nine people altogether. Dr. Bill Graham who chaired it was the deputy chair of the emerging ballistic missile threat that was chaired by Donald Rumsfeld before he was the Secretary of Defense. Dr. Bill Graham has been the presidential science adviser. He has held a lot of very high posts. He is really very well known. Commissioner Richard Lawson was a USAF general, served on the Joint Chiefs of Staff and was Deputy Commander in Chief of the U.S.-European Command. The last member listed here, Dr. Joan Woodard, I had a very interesting experience with her. I did not remember the names of all the commission members and they had just been set up a little while and I went out to Albuquerque, New Mexico, to visit my son who works there in the laboratory. He brought home from the lab a little internal report that they were passing around that indicated to me that they might have some expertise at the lab there that would be useful in the work of the commission. And so I asked to have a briefing on it and, big surprise, Dr. Joan Woodard was one of the commissioners and she had been working for several months and had a number of her staff working with her and I had a 5-hour classified briefing on the potential effects of EMP not just on our military because they were spending most of their time on our national infrastructure. So we had this body of real experts that was working for 2 years. Ordinarily a commission works for 1 year. This one worked for 2 years and brought forth a big report. They are still writing, I think, the third volume of this report. They have now briefed the House, they have briefed

the Senate, they are briefing a lot of key people. A lot more people are now knowing something about EMP and its potential effects.

What I want to do now in the next four charts, and we will look at this next one now, I want to quote directly from the EMP commission report. This is the EMP commission report that was Public Law 106-398, title 14. This was the law that set up this commission and all of this is from their report.

Over at the left of this chart, Mr. Speaker, you see the effects of an extra-atmospheric detonation above our country and the concentric circles there show the range that would be covered by detonations at different altitudes. You see you need to get up about 300 miles high, that is about 500 kilometers, before it covers all of the United States. These are direct quotes from the commission:

EMP is one of a small number of threats—indeed, I do not know any other threat—EMP is one of a small number of threats that may, one, hold at risk the continued existence of today's U.S. civil society. We need to put that in everyday kitchen language, Mr. Speaker. What they are saying is that this would end life as we know it in the United States. Let me read it again in their carefully couched language: Hold at risk the continued existence of today's U.S. civil society. If, Mr. Speaker, this EMP attack really did what Vladimir Lukin said it would do and that is to shut down our power grid and our communications for 6 months or so, if the only person you could talk to is the person next to you and the only way you could go anywhere was to walk, I think it is very obvious that that would end life as we know it in this country. Hold at risk, they say, the continued existence of today's U.S. civil society. Also, it has the power to disrupt our military forces and our ability to project military power. That is because, Mr. Speaker, for the last decade, more than the last decade, we have been waiving EMP hardening on almost all of our weapons systems. You see, when we had so little money to buy weapons, particularly during the Clinton years when they called it a build-down, I called it a teardown of the military, we could get a few more percent weapons systems that cost somewhere between 1 percent and 10 percent to harden, so you could get 1 percent to 10 percent more weapons systems if you did not harden, and so they just ran a calculated risk that we would not need the hardening. But, Mr. Speaker, the time when we are really going to need these weapons is when we are at war against a peer, and there will be a peer, a resurgent Russia or a China of the future and the first thing they are going to do, they say so in their writings, they say so in their war games, the first thing they are going to do is an EMP laydown which will then deny us the use of all of our military equipment which is not hardened. I am not sure why we are building it, we do

not need it, to defeat countries like Iraq. We will really need it to defeat a peer and if it is not hardened, then it will not be available to us.

The number of U.S. adversaries capable of EMP attack is greater than during the Cold War. Yes, that is true. There was one then, the Soviet Union. Now there are a whole bunch. Let us try Iran if it gets a weapon, North Korea, India, Pakistan, a number of countries that are today our friends, England and France and Israel and the list goes on.

Quotes again from the commission, not my quotes. Potential adversaries are aware of the EMP's strategic attack option, obviously from what Vladimir Lukin said and you can glean that from their writings. The threat is not adequately addressed in U.S. national and homeland security programs, and that is a gross understatement. It is not only not adequately addressed, it is hardly addressed at all.

The second chart is again quotes from the EMP commission and we have redacted some names here. I am not sure the Russian generals would want the world to know who they were, but these are the two Russian generals that I mentioned. They claim that Russia has designed a super EMP nuclear weapon capable of generating 200 kilovolts per meter. I cannot tell you what we hardened to, but I can tell you that the Russian generals believe that this is several times the level to which we have hardened. Chinese, Russian, Pakistani scientists are working in North Korea and could enable that country to develop an EMP weapon in the near future. This is not my statement, Mr. Speaker. This is a direct quote from the EMP commission.

The next chart shows additional quotes from the EMP commission. States or terrorists may well calculate that using a nuclear weapon for EMP attack offers the greatest utility. Indeed, if they had a single weapon, taking out Los Angeles, San Francisco, New York, Philadelphia, Washington would have nowhere near the effect on our society as simply taking out all of our computers.

EMP offers a bigger bang for the buck against U.S. military forces in a regional conflict or a means of damaging the U.S. homeland. Again, these are not my words. These are quotes from the EMP commission.

This is a really interesting one. EMP may be less provocative of U.S. massive retaliation compared to a nuclear attack on a U.S. city that inflicts many prompt casualties. Even, Mr. Speaker, if we knew where it came from, if all they have done is take out our computers, are we justified in incinerating their grandmothers and their babies? Maybe we should respond in kind and take out all the computers in North Korea. I doubt that very few people in North Korea would care that we took out all their computers. This, Mr. Speaker, is really a very asymmetric attack because if we responded

in kind, there are none of our enemies that are anywhere near as vulnerable as we are and some of them could hardly care less if we took out their computers and the few that the military has could easily be hardened if they were anticipating that they might need them hardened.

Strategically and politically, an EMP attack can threaten entire regional or national infrastructures that are vital to U.S. military strength and societal survival, challenge the integrity of allied regional coalitions, and pose an asymmetrical threat more dangerous to the high-tech West than to rogue states. Indeed, if we responded in kind, it would really be an asymmetric attack, because they would be little affected by taking out their computers since they little depend on their computers.

Technically and operationally, EMP attacks can compensate for deficiencies in missile accuracy, fusing, range, reentry. Suppose they are really lousy in the kind of missiles they have, their aim is very poor. If they missed the target by 100 miles, Mr. Speaker, it really does not matter. One hundred miles is as pretty much as good as a dead hit because 100 miles away really will not make that much difference in the very large areas that are covered by this EMP attack.

Terrorists could steal, purchase or be provided a nuclear weapon for an EMP attack against the United States simply by launching a primitive Scud missile off a freighter near our shores. We would have, Mr. Speaker, 3 or 4 minutes' notice. Scud missiles can be purchased on the world market today for less than \$100,000. Al Qaeda is estimated to own about 80 freighters. So what they need is \$100,000 to buy a Scud missile and a crude nuclear weapon that who knows where they might get that. Maybe some Russian scientist who has not been paid for 4 or 5 years.

Certain types of low-yield weapons can generate potentially catastrophic EMP effects. These are the enhanced EMP weapons that the Soviets, the Russians, have developed. Mr. Speaker, we have every reason to believe that these secrets are now held by China. There is no reason to entertain the thought that they do not have these secrets. And if China has them, who else has them? I think the safest thing to assume is that any potential enemy has them.

The last chart from the commission shows a very interesting little schematic on the right which shows the interrelationships of our very complex infrastructure. This was commented on a number of years ago by a scientist at Cal Tech who held a series of seminars called The Next 100 Years. He was theorizing, could we indeed recover from something, he did not know about EMP, so he was talking about a nuclear war, because he noted that we had developed a very interconnected, complicated infrastructure where one part depended on another part and we

developed that from a base of high quality, readily available raw materials, oil that almost oozed out of the ground at Oil City, Pennsylvania, coal that was exposed by a heavy rain when the dirt was washed off, iron ore in the central part of our country that was such high quality that you could almost smelt it in a backyard smelter. Indeed, there is one of those, you can drive up and see it just south of Thurmont on Route 15. It is called Cactoin Furnace and they denuded the hills up there to produce coke to make iron there. You see here a very interrelated infrastructure. The point they are making is that if one part of that comes down, suppose you do not have electric power, they have not drawn all the arrows they should have drawn because you are not going to have oil or gas, you are not going to have communications, you are not going to have water, you are not going to have banking or finance, you are not going to have government services, you are not going to have emergency services, you are not going to have transportation without electricity. So if you take down just that one thing, everything comes down. Of course, if you do not have any banking services, pretty soon everything will grind to a halt because they will not have the finances to keep the thing going.

One or a few high altitude nuclear detonations can produce EMPs simultaneously over wide geographic areas. Again, I am quoting from the commission. Unprecedented catastrophic failure of our electronics-dependent infrastructure could result. I think that you should almost put the verb in there, Mr. Speaker, would result. You may have noted in the paper just today, I think, or yesterday, there was an account that we almost had another big blackout, just almost tripped that big blackout and there is no catastrophic insult like an EMP laydown to cause that. Power, energy, transport, telecom and financial systems are particularly vulnerable and interdependent. We just talked about that, very vulnerable, lots of computers, very interdependent. One goes down and they all come down. EMP disruption of these sectors could cause large scale infrastructure failures for all aspects of the Nation's life.

□ 2200

Both civilian and military capabilities depend on these infrastructures. Without adequate protection, recovery could be prolonged months to years.

What would happen if that was prolonged months to years?

Increased dependence on advanced electronic systems results in the potential for an increased EMP vulnerability of our technologically advanced forces, making EMP probably the most attractive asymmetric weapon. EMP threatens the ability of the United States and Western nations to project influence and military power. We could be easily blackmailed by a country that has the

ability to produce an EMP laydown if we are not prepared to protect ourselves from it.

Degradation of the infrastructures could have irreversible effects on the country's ability to support its population, and this one brief three-word sentence, "millions could die." That is what Dr. Lowell Wood said when I asked him how could the technology of a century ago support our present population and its distribution. And his unemotional answer was, "Yes, I know. The population will shrink until it can be supported by the technology." That shrink could easily, easily, Mr. Speaker, be in the millions or hundreds of millions of people.

There are two other charts that I want to show the Members, and this is what other people are saying. This is from an op-ed piece by Senator JOHN KYL, and I am delighted that Senator KYL is helping with spreading the word about this and the caution that we really need to be doing something. This was in *The Washington Post*, and he says: "Last week the Senate Judiciary Committee's Subcommittee on Terrorism, Technology and Homeland Security, which I chair," this was JOHN KYL, "held a hearing on a major threat to the United States not only from terrorists but from rogue nations like North Korea. An electromagnetic pulse, EMP, attack is one of only a few ways that America could be essentially defeated by our enemies, terrorists or otherwise. Few if any people would die right away, but the long-term loss of electricity would essentially bring our society to a halt. Few can conceive of the possibility that terrorists could bring American society to its knees by knocking out our power supply from several miles in the atmosphere, but this time we have been warned and we better be prepared." And this is his comment.

Another comment here, and this is from the *Washington Times* and just a couple of brief paragraphs here. This is from Major Franz Gayl: "The impact of EMP is asymmetric in relation to our adversaries. The less developed societies of North Korea, Iran, and other potential EMP attack perpetrators are less electronically dependent and less specialized while more capable of continued functionality in the absence of modern convenience."

That is an easy way to say they are not dependent upon computers like we are and we would suffer a whole lot more than them. And then in the next paragraph he pointed out that because of our enormous complexity, how technologically developed we are, that our great strength has become potentially our great weakness when we are talking about EMP.

Now, Mr. Speaker, I would like to close with some observations. Again, from the commission's report, the EMP threat is one of a few potentially catastrophic threats to the United States. By taking action, the EMP threat can be reduced to manageable levels.

I would like to say, Mr. Speaker, that the EMP Commission report is really a good-news story. One would not think it was good news pointing out how very vulnerable we are, but the good news is that we now know how vulnerable we are, and we know that this is fixable; and it is fixable for far, far less cost than the Iraq war. We just need, Mr. Speaker, to do it. It is not going to happen overnight. It is going to happen quicker in our military than in our private sector because we turn over our weapons programs quicker than we turn over our big transformers and our power grid and so forth. But we can little by little, year by year, fix our national infrastructure and fix our military so that we are not as vulnerable.

Mr. Speaker, being vulnerable like this, and I pointed out comments from the writings of a number of our potential enemies, it is not that they do not know this. Not one person in 50 in the United States will know it, but it is very obvious that all of our potential enemies know about this. Our very vulnerability invites that attack. Because we are so vulnerable, because it is so asymmetric, we invite that attack. Mr. Speaker, we need to do everything we can to lessen the probability of attack. And the longer we go unprotected from EMP, the more we invite this attack and the more vulnerable we are. U.S. strategy to address the EMP threat should balance prevention, preparation, protection, and recovery.

We have been talking primarily, Mr. Speaker, about prevention, about hardening, so that those pulses will not get through so that it will not fry the equipment and our infrastructure can keep working. There are a number of things we need to do in preparation.

One of the things we need to do is to have the equivalent of the old civil defense. In our homeland security we really are not looking at civil defense. Those who are my age and maybe a little younger but mostly my age can very well remember all those fallout shelters, and the young people may have noticed some of those rusting signs and wondered what they were because there were fall-out shelters almost everywhere a generation ago.

In the 1950s, IBM was lending their employees money interest-free to build backyard shelters. We were expecting the potential of a bolt out of the blue, that nuclear weapons would be rained down on us. And there were brochures put out by the government telling us how to build a fall-out shelter, what to put in the fall-out shelter, what we needed to buy. EMP is not going to be anywhere near as hard to protect ourselves against as a nuclear explosion and all that fall-out. But to the extent that each of us and our families and our communities are prepared for this, our country is going to be enormously stronger should this happen to us.

And, Mr. Speaker, whether one is preparing for an EMP attack or for a terrorist attack or anything that disrupts our usual economy, we have

about 3 days' supply of food in any one of our big cities. If the trucks do not keep coming, the supermarket may be open 24 hours a day, but when we are in there, Mr. Speaker, we are going to see that as we are taking it off the shelf, they are stocking the shelves. This goes on continually because there are only about 3 days of food. What would happen if our trucks could not run? What would our cities do after those 3 days after the food was gone? It is very easy, Mr. Speaker, to stock far more than 3 days of food in one's house.

A number of years ago, there was a very well-known economist by the name of Howard Ruff. He had made some predictions about the stock market that made him kind of an icon in his day, and people would come to him for advice. And a very interesting story, when they came with their money and said, How should we invest our money Mr. Ruff, he would say, Do you have a year's supply of food for your family? They would say, No. He would say, If you do not have a year's supply of food for your family, you do not have any money to invest. The first thing you need to do is buy a year's supply of food for your family, and then come back and we will talk about how to invest the rest of your money because that is the best investment that you need to make.

They would come back, and he would say, You have a year's supply of food? Yes, sir.

Well, he said, do you have a bag of silver?

A bag of silver is a bag of junk silver and one may do something else but they need the equivalent of this. That is junk silver. It is silver that has no numismatic value, and it is in bags that are sealed and they have a \$1,000 face value. He said, Unless you have a bag of silver for each member of your family, you have not made the second most important investment you could make; so go buy that and come back and we will talk about what to do with the rest your money.

These are the kinds of things that Americans need to be thinking about. What can they do, Mr. Speaker, what can their family do, what can their church group do so that they are not going to be a liability on the society should there be a terrorist attack that shuts down these services or should there be a national EMP attack that shuts them down all over our country? We can do something, Mr. Speaker, to prepare ourselves so that we are going to have some sense that we can make it through so that we are not going to be a liability on the system.

Let me show the last chart here now in our conclusion. The fiscal year 2006 defense authorization bill contains a provision that extends the EMP Commission's life to ensure that their recommendations will be implemented. We want them watching to see what we are doing. We want them to tell us and to tell the public. We are a representative government here; and when our



people call in and say, Are you doing this, are you doing that, my wife points out that if we do not represent our constituents, we will not represent our constituents. So if the people across our country demand that we be prepared, that we tell them how to be prepared themselves, then we will do this.

The terrorists are looking for vulnerabilities to attack, and our civilian infrastructure is particularly susceptible to this kind of an attack. Our very vulnerability invites this attack. Mr. Speaker, we obviously cannot do it yesterday. We certainly need to do it today and tomorrow to begin to protect ourselves against it.

The Department of Homeland Security needs to identify critical infrastructures. What are the first things, Mr. Speaker, that we need to turn our attention to? Where would a minimal investment pay the biggest dividends? And we need to have people studying this. The EMP Commission has made a lot of very good suggestions. If we simply followed those suggestions, we would be a long way to where we need to be. The Department of Homeland Security also needs to develop a plan to help citizens deal with such an attack should it occur, and then the little note that our citizens need to become as self-sufficient as possible.

Mr. Speaker, we have spent the better part of an hour talking about something that one might expect to see in a science fiction movie or in some magazine that is talking about the improbable. But what we are talking about here is a very possible, and I think probable, event. It is something that the American people have not been very much aware of. We hope that this awareness, as the EMP Commission continues its work, will be more widespread. We hope that the American people will respond by doing two things: one, demanding that their government, that their Representative make the right kinds of choices and appropriate the right kinds of moneys to start on the path to developing a military that is immune to EMP attacks and to, as quickly as possible, develop a national infrastructure that will not collapse like a house of cards with an EMP attack. And, also, I believe that our citizens will demand that we tell them what they can do.

There is an interesting phenomenon, Mr. Speaker. If in anticipation of a hurricane this fall, one goes to the grocery store now and stocks up on some things that they need, they are going to be a patriot because they are improving the economy. If they wait until the hurricane is on its way and then they go to the store to stock up on what they need, they are no longer a patriot. They are now a hoarder. So exactly the same act is really a very good act or a very bad act depending upon when they do it. If they buy it in long anticipation of the event, they are now a real patriot. They are providing some assurance that they will not be a liability

and they are helping the economy. If they wait until the threat is at their door and they now buy it, now they are a hoarder and nobody wants a hoarder. So our homeland security needs to help us to know what we need to do so that we will be as self-sufficient as possible, an asset and not a liability.

Mr. Speaker, there is an old saying that to be forewarned is to be forearmed. I know that probably not even one in 50 Americans has ever heard of EMP, but I will assure the Members that all of our potential enemies know all about EMP. We see it in their writings. We see it in their war games. And what we need to do, Mr. Speaker, is to proceed as rapidly as we can to develop a military that is immune to EMP, to develop an infrastructure that as quickly as possible will be less and less damaged by EMP, and to provide each American citizen with the information they need so that they, their family, their social club, their church, as individuals, as families, as groups, can plan so that they will be as self-sufficient as possible in whatever emergency occurs.

And who knows what the terrorists might do to us. This is clearly the most devastating, the most asymmetric attack that could be made on our country; but there could be lesser ones that could for one's family, one's locality be just as devastating as an EMP attack.

Mr. Speaker, I know the American people will respond and know when our enemies see us responding that the risk of this kind of attack will be immensurably lessened because the less vulnerable we are, the less likely they are to attack.

□ 2215

#### GENERAL LEAVE

Ms. JACKSON-LEE of Texas. Mr. Speaker, I ask unanimous consent that all Members may have 5 legislative days within which to revise and extend their remarks and include extraneous material on the subject of the Special Order today by the distinguished gentlewoman from California (Ms. WATERS).

The SPEAKER pro tempore (Mr. FITZPATRICK of Pennsylvania). Is there objection to the request of the gentlewoman from Texas?

There was no objection.

#### LEAVE OF ABSENCE

By unanimous consent, leave of absence was granted to:

Mr. LEWIS of Georgia (at the request of Ms. PELOSI) for today and the balance of the week on account of illness in the family.

Mr. CARTER (at the request of Mr. DELAY) for today after noon and June 22 on account of official business.

Mr. CONAWAY (at the request of Mr. DELAY) for today after 2:30 p.m. and June 22 on account of attending the funeral of a fallen soldier who was killed in Iraq.

Mr. YOUNG of Florida (at the request of Mr. DELAY) for today on account of business in the district.

#### SPECIAL ORDERS GRANTED

By unanimous consent, permission to address the House, following the legislative program and any special orders heretofore entered, was granted to:

(The following Members (at the request of Ms. JACKSON-LEE of Texas) to revise and extend their remarks and include extraneous material:)

Mrs. MCCARTHY, for 5 minutes, today.

Mr. EMANUEL, for 5 minutes, today.

Mr. BROWN of Ohio, for 5 minutes, today.

Mr. DEFAZIO, for 5 minutes, today.

Ms. CORRINE BROWN of Florida, for 5 minutes, today.

Mrs. JONES of Ohio, for 5 minutes, today.

Ms. WOOLSEY, for 5 minutes, today.

(The following Members (at the request of Mr. JONES of North Carolina) to revise and extend their remarks and include extraneous material:)

Mr. POE, for 5 minutes, today.

Mr. GUTKNECHT, for 5 minutes, June 28.

Mr. PAUL, for 5 minutes, today and June 22.

Ms. FOXX, for 5 minutes, June 23.

Mr. MCCAUL of Texas, for 5 minutes, today.

Mr. NORWOOD, for 5 minutes, June 22.

Mr. WELDON of Pennsylvania, for 5 minutes, today.

Mr. JONES of North Carolina, for 5 minutes, today and June 22.

(The following Member (at her own request) to revise and extend her remarks and include extraneous material:)

Ms. JACKSON-LEE of Texas, for 5 minutes, today.

#### SENATE BILL REFERRED

A bill of the Senate of the following title was taken from the Speaker's table and, under the rule, referred as follows:

S. 1282. An act to amend the Communications Satellite Act of 1962 to strike the privatization criteria for INTELSAT separated entities, remove certain restrictions on separated and successor entities to INTELSAT, and for other purposes; to the Committee on Energy and Commerce.

#### BILL PRESENTED TO THE PRESIDENT

Jeff Trandahl, Clerk of the House reports that on June 21, 2005 he presented to the President of the United States, for his approval, the following bill.

H.R. 483. To designate a United States courthouse in Brownsville, Texas, as the "Reynaldo G. Garza and Filemon B. Vela United States Courthouse".

#### ADJOURNMENT

Ms. JACKSON-LEE of Texas. Mr. Speaker, I move that the House do now adjourn.