

contained, not to mention the political and moral consequences? In a singular act we would martyr our enemy, alienate our friends, give comfort to the non-declared nuclear states and impetus to states who seek such weapons covertly. In short, such a response on the part of the United States is inconceivable. It would irretrievably diminish our priceless stature as a nation noble in aspiration and responsible in conduct, even in the face of extreme provocation.

And as a nation we have no greater responsibility than to bring the nuclear era to a close. Our present policies, plans and postures governing nuclear weapons make us prisoner still to an age of intolerable danger. We cannot at once keep sacred the miracle of existence and hold sacrosanct the capacity to destroy it. We cannot hold hostage to sovereign gridlock the keys to final deliverance from the nuclear nightmare. We cannot withhold the resources essential to break its grip, to reduce its dangers. We cannot sit in silent acquiescence to the faded homilies of the nuclear priesthood. It is time to reassert the primacy of individual conscience, the voice of reason and the rightful interests of humanity.

### IRAQ POLICY

Mr. KERREY. Mr. President, the world witnessed a diplomatic success in United Nations Secretary General Kofi Annan's trip to Baghdad last weekend. We saw a successful conclusion to an episode that has been and probably will continue to be a very long drama of confrontation with Iraq. This success is not due solely to Mr. Annan's considerable powers of persuasion. Mr. Annan's mission was backed by force—by the real, credible potential for violent punishment from U.S. forces if a diplomatic solution was not achieved. He said this about his successful negotiations: "You can do a lot with diplomacy, but of course you can do a lot more with diplomacy backed up by firmness and force." It takes nothing away from Mr. Annan's success to note he shares star billing as a peacemaker with the soldiers, sailors, airmen and marines of the United States.

The smile of diplomacy combined with the force of the gun has produced an offer from Baghdad to allow U.N. weapons inspectors into sites previously denied to them by the Iraqi government. For the moment there is hope that air strikes to reduce Iraq's capacity to use weapons of mass destruction will not be needed. Gratefully, for now, we will not again be witnesses to the necessary violence of combat. The images of war, which increasingly shape and limit our national tolerance for war, will thankfully not supplant Seinfeld on our TV screens this week.

And yet our gratitude for peace is not entirely satisfying. A sour taste remains in our mouths. We wonder again if Saddam Hussein has got the better of us. The question nags: Did we win a diplomatic battle but not the war? These feelings and this question flow from our national discussion of Iraq policy over the past several weeks, especially the growing realization that America should not deal with the Iraq

problem episodically, but rather with finality, even if greater effort is required.

This problem was eloquently stated last Wednesday at Ohio State University by a veteran. He said:

I spent twenty years in the military; my oldest son spent twenty-five; my youngest son died in Vietnam; six months later, his first cousin died in Vietnam. We stood in the gap. If push comes to shove and Saddam will not back down, will not allow or keep his word, are we ready and willing to send the troops in? You see, I have no problem with asking any one of these guys in the Armed Forces to stand in the gap for me now, that we stood in the gap back then. . . . I think all of Congress wants to know. Are we willing to send troops in and finish the job, or are we going to do it [half-hearted] like we've done before?

Mr. President, this veteran speaks for me. He gave the nation a clarion call to finish the job. It falls to us to determine what finishing the job means. We must do so with the understanding that wherever and however we stand in the gap, our stand and our actions will be globally public. All of us who are given power by the Constitution to declare war and raise armies must take note of how much is won or lost over the airwaves.

We will not restrict the flow of images in the next war as we have in the past. The recently released CIA report on the Bay of Pigs thirty-six years after the report was written, represents the old way of making: war in secret. The new way is portable video cameras and satellite communications opening the battlefield to full view. And victory may hinge more on the impressions of the battle conveyed through the media than on the effect of the combatants themselves. Even if the struggle is only diplomatic, it is no less public and global, and the impression made on the public who witness the struggle through the media is at least as important as the diplomatic outcome.

Television images are powerful and effect all who watch. Two and one-half billion people watched Princess Diana's funeral. Perhaps as many watched the war of words between the U.S. and Iraq. I am concerned that to date, we may be losing this battle of the airwaves. A ruthless dictator who has starved and brutalized and robbed his people for over twenty years actually appears in some media to be more interested in the welfare of his people than do we. To win, we must have an objective that is clear, will justify war's violence if war comes, and will enable us to rally world opinion. We need a mission that puts us in the gap not just to reduce a threat but to liberate a people and make a whole region secure and prosperous. We need a cause which will unite moral leaders like Nelson Mandela, and Vaclav Havel with other political and military leaders. We need an objective which will permanently remove the threat the Iraqi dictatorship poses to the United States, to our allies, to our interests, to its neighbors, and to its own people.

The containment of Iraq—although it has been a success—cannot be such a cause. Containment reduced the Iraqi military threat and introduced UNSCOM inspections, which are our principal means of limiting Saddam's production of weapons of mass destruction. But the ultimate failure of containment is signaled by the word "reduce" as a policy goal. With biological weapons, reduction or limitation are not sufficient. We need to be sure such weapons are eliminated from Saddam's arsenal. To "reduce" is not enough.

Let me say a word about the fear that has been aroused over the potential of biological weapons, both Iraqi weapons and possibly such weapons in the hands of terrorists in this country. Fear is a natural reaction, but fear is also the great debilitator. Fear keeps us from taking necessary action. We must manage our fears, we must keep fear from paralyzing us, and we must realistically measure the threat posed by these weapons. If we are to truly stand in the gap with regard to Iraq, we must do something hard: we must have a broader perspective than just altering our fear of biological weapons. We must transcend that fear and convert it into a hope for freedom. A democratic Iraq is certainly in our interest, an Iraq free of weapons of mass destruction is certainly in our interest, but it is above all for the sake of the Iraqis that we must replace Saddam.

A review of what Saddam has done to his people underscores the need to remove him. After over 20 years of Saddam, it is hard to recall that Iraq was once the heart of the Fertile Crescent, a country blessed with oil resources, rich agricultural potential, and a vibrant middle class. Through a disastrous war with Iran and then the invasion of Kuwait, Saddam mortgaged and then caused the destruction of much of Iraq's oil capacity. Through static economic policies, he marginalized a middle class which has since been almost wiped out by the effect of sanctions, which is to say, by the effect of Saddam's behavior. Per capita income in Iraq has dropped from \$2,900 in 1989 to \$60 today, in currency terms. The dinar, which was worth three dollars in 1989, is now at the rate of 1,500 to one dollar. Iraqis have seen their salaries drop to five dollars a month, and their pensions evaporate. We are also familiar with the starvation and the permanent health crisis he imposes on his people while he builds palaces and other grandiose monuments to himself.

Saddam's policies have killed hundreds of thousands of Iranians and Iraqis and thousands of Kuwaiti citizens, many of whom are still unaccounted for. His reign of terror continues to kill, including between 500 and 1,200 prisoners murdered in his prisons last December. His weapons of mass destruction, with which we are too familiar, were tested on living human beings, according to British press reports. In sum, if there is a dictator in the world who needs to be removed, it is Saddam Hussein.

Force, either our own or that of dissident Iraqis, will be required to remove this regime. But in my view, Desert Storm is not the model. A much better example of the marriage of military force with diplomacy, a success story in the making, is the U.S. deployment to Bosnia. An initial agreement was reached at Dayton as a result of the use of U.S. military force. Then our troops led an allied force into the country and provided, and continue to provide, the overarching security and stability beneath which a traumatized people regain the confidence to govern themselves democratically and live civilly with each other. The lesson of Bosnia is that force persuaded diplomacy, which has in turn given the people of Bosnia a chance for a lasting peace. Iraq, with its devastated middle class and ethnic divisions, may need the same kind of long-term application of potential force, once Saddam's regime has passed.

It took hope, at the worst moments of the Yugoslav war, when Sarajevo was a deadly obstacle course for its citizens, to dream of a peaceful Bosnia, and it took courage to make the commitments which are now slowly bringing that dream into reality. In the same way, we must get past our pessimism about Iraq and the Middle East, summon our hope, and dream the successful outcome of our policy: a democratic Iraq. Imagine its characteristics: a democratic Iraq would be at peace with its neighbors. It would have no weapons of mass destruction. A democratic Iraq would enjoy the benefits of its agricultural and oil wealth and would share them equitably across their society. A democratic Iraq would be a tolerant society, in sharp contrast to some of its neighbors. It would not oppress its minorities. Its Kurdish population, secure and free in northern Iraq, would not be a base for an insurgency against Turkey. A democratic Iraq would be a powerful example to the rising oil states of Azerbaijan, Kazakhstan, and Turkmenistan, a proof to them that a government can use oil revenue for something other than hiring police and buying weapons.

There is a dissonant sound to the words "Iraq" and "democracy" side by side, but this dream, aided by a sound American strategy, can become real. I know of no genetic coding that predisposes the Iraqis, or any people, to dictatorship. In November, I laid out a road map which included the following steps and I repeat them today.

First, we must convince our core European and Asian allies that democracy, not just the temporary compliance of a dictator, is the right long-term goal for Iraq. We must use the facts about Saddam's brutality to convince our allies to support a transition to democracy in Iraq, and to convince them the security and economic opportunity that would flow out of a new, democratic Iraq is worth more than the money owed our allies by Saddam's regime. In other words, we must convince our allies to forgive the debts of a post-Saddam Iraq. Beyond debt forgiveness,

we should clearly state the loan and foreign assistance preferences which a democratic Iraq would receive from U.S. and multinational lending agencies.

Second, we should fill Iraqi airwaves, by means of Voice of America and commercial means, with the horrific truth about Saddam's regime. The Iraqi people must learn that we know what Saddam has done to them, and that weapons of mass destruction are not our sole concern. Two recent news stories exemplify the kind of information we should be putting in every Iraqi home. The first, from the Los Angeles Times for February 9, describes the murder of up to 1,200 prisoners in Iraq's main prison. The second, from the January 18 Sunday Times of London, relates in detail how Saddam's government tested biological weapons on human beings. Mr. President, I ask unanimous consent both these articles be printed in the RECORD at the conclusion of my remarks.

The PRESIDING OFFICER. Without objection, it is so ordered.

(See exhibit 1.)

Mr. KERREY. Third, we should openly and consistently state our goal of a free, democratic Iraq, even if we have to state it repeatedly for years. To accept less and say less is simply unworthy of our heritage.

Mr. President, there are additional steps which are essential if we are to achieve our goal:

We should announce our intention to see Saddam Hussein indicted and tried for war crimes and genocide.

As some commentators have suggested, the United States should form an umbrella organization of pro-democracy Iraqi exile groups and support them with money and military supplies.

When the exile group seizes significant Iraqi territory, the United States should recognize it as Iraq's government and make frozen Iraqi government funds available to it.

The UN has already decided to expand the amount of oil Iraq can sell in exchange for food and medicine. We should work with the UN to facilitate greater amounts of life's necessities getting into the hands of the Iraqi people. Over the long term, we should consider the usefulness of sanctions in overthrowing Saddam. The debilitating effect of sanctions on ordinary Iraqis may actually help keep Saddam in power. Our policies should serve the strategy of removing this dictator from office and creating the democratic Iraq and peaceful Middle East which is our goal.

Mr. President, I am laying out what could be a long road for the United States. But when you compare today's situation with tomorrow's possibilities, it is a road worth taking. It is a road worthy of our heritage as liberators and as a free people. Mr. Annan carefully selected these familiar words to describe the U.N.'s success this week: "We the peoples of the world can do anything if united." We have dreamed the possibility. Now it is time for us to make it real.

I yield the floor.

EXHIBIT 1

[From the Los Angeles Times, Feb. 9, 1998]

FREED INMATE TELLS OF MASS EXECUTIONS AT IRAQI PRISON

(By John Daniszewski)

Amman, Jordan—Ammar Shehab Dein shudders at the memory of the "meals" served up at the notorious Abu Ghraib prison outside Baghdad.

A "meal" is what guards there called the Iraqi prison's periodic mass executions. "We have a meal tomorrow," they would taunt the terrified inmates.

During the last 20 days in December, said Shehab Dein, there were at least three "meals" in his section alone. Each time, an officer would stand in front of the two-story cellblock and read off the names of those who were to die.

The doomed men would then have their hands tied behind their backs and be led away—crying, shouting, "Allahu Akbar" (God is great) and, in some cases, cursing the name of Iraqi President Saddam Hussein.

Later, other inmates would be ordered into the execution chamber to clean up.

As it was described to Shehab Dein, the chamber was "primitive," ropes suspended over 12 wells. Bound prisoners would be put into a noose and then pushed to their deaths, he said. Doctors were present mainly to determine if the prisoners were dead.

Shehab Dein, a 27-year-old Jordanian trader who was imprisoned last year, is not only a rare survivor of the Iraqi leader's death row. In interviews with The Times, he is also the first released inmate of Abu Ghraib prison to publicly corroborate and add detail to accounts that emerged at the end of 1997 of a series of executions of hundreds or even thousands of political prisoners and common criminals in Iraq.

At the time, U.S. State Department spokesman James Foley called the reports of mass execution "horrific" and said they would constitute "a gross violation of human rights" if true.

Shehab Dein's statements were supported by a second released inmate, a 31-year-old Jordanian businessman who said he was badly tortured shortly after his 1995 arrest and that he fears being identified by name.

"The last weeks before Ramadan, we heard [that] about 500 people were killed. . . . We used to hear them [executions] every day," the businessman said.

Both men were interviewed in Amman days after their Jan. 21 release in a surprise amnesty, announced by Hussein, for all Jordanian prisoners. (Hussein declared a further amnesty Thursday for all nationals of other Arab countries, apparently in a goodwill gesture hours after he met with the secretary-general of the Arab League.)

According to Iraqi opposition sources in Jordan, Britain and the United States, Hussein's regime executed 800 to 1,200 inmates at the Abu Ghraib and the Radwanayah prisons, both near Baghdad, in a cleaning out that began Nov. 20 and lasted into December.

After the State Department raised the issue Jan. 1, the Iraqi Information Ministry angrily denied the accusations, calling them another example of the "hostile propaganda" of Iraq's opponents.

With the world focused on Iraq's standoff with the United States and the United Nations over access to disputed sites by arms inspectors, the allegations have elicited relatively little attention.

But the experiences of the two Jordanians, who went to Iraq voluntarily for business and say they once were sympathetic to Hussein, nevertheless are a reminder of the unpredictable brutality inside Iraq.

"If I had a choice between dying and going back to Iraq, I would prefer to die," said the businessman, who declined to discuss details of his torture except to say: "Execution was something I wanted."

Since mid-December, opposition groups have been circulating accounts of the executions, which they said were ordered Nov. 19 by Hussein's powerful younger son, Qusai, and underscore his preeminent role in the spheres of "security and repression," in the words of one opposition newsletter.

The Iraqi National Congress, a U.S.-backed anti-Hussein group, has compiled lists identifying 160 of the victims.

It said one brother of an executed Iraqi Kurd had to comb through 12 cold-storage rooms containing 30 bodies apiece before he was able to find his sibling and claim the remains. The opposition Iraqi Communist Party, meanwhile, said that 109 of its followers apparently were killed in one day.

Decreed at a time when Iraq appeared to have driven a wedge between the United States and other U.N. Security Council members, the executions may have been ordered to celebrate this diplomatic "triumph on the part of Saddam Hussein," speculated the Iraqi Broadcast Corp., the oppositions' radio station in northern Iraq.

Neither Shehab Dein nor the businessman actually saw any hangings, but both stated without hesitation that hundreds of their fellow inmates died.

Shehab Dein's younger brother, Jihad, and that when he visited his brother in prison in December, he saw other families collapse in sobs and wails upon learning that loved ones had been executed. He was once told that he should leave the prison because a round of executions was about to take place, he said.

Shehab Dein, who lived with his family in Iraq for most of the past six years, was arrested Sept. 9 and sent to Abu Ghraib on Dec. 10 after being condemned to death for allegedly buying up cheap construction equipment in Iraq to be dismantled and smuggled out for sale abroad.

Although Shehab Dein and his five brothers buy and sell heavy machinery, he denies being a smuggler and blames his arrest on a false accusation from a business rival who stood to get a significant chunk of Shehab Dein's assets as a reward from the Iraqi regime.

As soon as he arrived at Abu Ghraib after three months in a cell in Baghdad's Public Security Department, Shehab Dein said, he was told by fellow inmates about the mass executions that had been taking place.

"Between November and December, they used to take 50 people, 80 people a day," he said. "It was not something normal."

From Dec. 10 until Dec. 30, when executions were stopped in observance of the start of Ramadan, the Muslim holy month, Shehab Dein said, he saw or heard a total of 56 men dragged away—27, 15 and 14 at a time.

None ever returned to his section, which housed more than 1,000 people who had been sentenced to death for various crimes, ranging from corruption to theft to murder.

He said he believes that prisoners from other sections, including political prisoners and those containing people sentenced in long prison terms but not death, were being executed daily. Among those killed, he said, was a friend he had made earlier at the Public Security Department cells, a likable would-be counterfeiter whom he knew as "Eyad the Palestinian."

Eyad's name was among those called out one morning, and he was led out with his hands tied behind his back.

"They allowed him to say goodbye to his friends," Shehab Dein said quietly. "Eyad came to me right away because I was the only other Palestinian. He said, 'Forgive me

if I have done anything wrong, and give charity in my name if you have the chance.'

"I cannot describe to you the feeling—someone saying that to you. What I thought was, how dear he was to me, and I was helpless to give him any consolation," he said.

Shehab Dein said prison conditions were appalling.

He was in a 5-foot-square cell with three other condemned men. They took turns sleeping. But that was "paradise" compared with other cells of the same dimensions packed with seven or eight prisoners.

He said he was sentenced to die based on a confession he never made and upon the written testimony of two "witnesses" whom he had never met and who were not even present at his trial.

Iraq executed four Jordanian students Dec. 9 for smuggling, despite repeated entreaties from Jordan's King Hussein that they be spared.

Shehab Dein, who had been condemned Dec. 7, said he believed that he surely would be the next to die. But he got a reprieve when Saddam Hussein suddenly ordered all Jordanians in his prison let go, apparently to mollify Jordanian anger.

"I thought I was dead," Shehab Dein murmured, recalling the moment he learned that he would escape the noose. "But I was reborn."

[From the London Sunday Times, Jan. 18, 1998]

#### SADDAM TESTED ANTHRAX ON HUMAN GUINEA PIGS

(By Marie Colvin and Uzi Mahnaimi)

Evidence has emerged that Saddam Hussein, the Iraqi dictator, has had prisoners tied to stakes and bombarded with anthrax in brutal human experiments with his biological and chemical armoury.

Dozens of prisoners are believed to have died in agony during a secret programme of military research designed to produce potent new weapons of mass destruction.

In one incident, Iranian prisoners of war are said to have been tied up and killed by bacteria from a shell detonated nearby. Others were exposed to an aerosol of anthrax sprayed into a chamber while doctors watched behind a glass screen. Two British-trained scientists have been identified as leading figures in the programme.

As the first details of Iraq's use of human guinea pigs came to light, Saddam threatened yesterday to expel United Nations weapons inspectors unless they complete their work within six months. The British aircraft carrier *Invincible* is sailing for the Gulf to support American forces.

Saddam's biological and chemical warfare programme is at the heart of his latest confrontation with the UN, which began when a team of inspectors was prevented from visiting Abu Gharib jail, near Baghdad, to investigate evidence that some prisoners were sent to a military facility for experimentation two years ago.

The Sunday Times has obtained evidence about the programme from several sources, including UN inspectors, Iraqi dissidents and Israeli intelligence. The evidence suggests that tests on human beings began in the 1980s during Iraq's eight-year war with Iran after initial experiments on sheep and camels.

According to Israeli military intelligence sources, 10 Iranian prisoners of war were taken to a location near Iraq's border with Saudi Arabia. They were lashed to posts and left helpless as an anthrax bomb was exploded by remote control 15 yards away. All died painfully from internal haemorrhaging. In another experiment, 15 Kurdish prisoners were tied up in a field while shells contain-

ing camel pox, a mild virus, were dropped from a light aircraft. The results were slower but the test was judged a success; the prisoners fell ill within a week.

Iraqi sources say some of the cruellest research has been conducted at an underground facility near Salman Pak, southwest of Baghdad. Here, the sources say, experiments with biological and chemical agents were carried out first on dogs and cats, then on Iranian prisoners.

The prisoners were secured to a bed in a purpose-built chamber, into which lethal agents, including anthrax, were sprayed from a high-velocity device mounted in the ceiling. Medical researchers viewed the results through fortified glass.

Details of the experiments were known only to Saddam and an inner circle of senior government officials and Iraqi scientists educated in the West.

Madeleine Albright, the American secretary of state, said Saddam was "tightening the noose around himself". She added, "By not letting this inspection team go forward, in almost a strange way it's almost as if he has come close to saying, 'Okay, you caught me'."

#### IRAQ TESTED ANTHRAX ON POW'S

They started with domestic cats and dogs. But the scientists at Salman Pak, a military complex 50 miles southwest of Baghdad, were under pressure from President Saddam Hussein to prove the potency of the technology that would underpin their new weapons of mass destruction. It was inevitable that their experiments would eventually be conducted on human beings.

From behind a reinforced glass screen they watched as, one by one, Iranian prisoners of war were strapped to the bed in a chamber at the underground facility.

The terror of their victims as a high-velocity device mounted on the ceiling dispensed a lethal spray can only be imagined. Sometimes it contained anthrax bacteria, which penetrate the skin and lungs. The prisoners died in agony from internal hemorrhaging.

At other times the aerosol was of toxins suitable for use in chemical weapons. The results were no less devastating. The facility, which is understood to have been built by German engineers in the 1980s, has been at the centre of Iraq's experiments on "human guinea pigs" for more than 10 years, according to Israeli military sources.

The first details of the atrocities carried out there and in experiments in the open air emerged this weekend as Saddam threatened to expel United Nations weapons inspectors unless they complete their work within six months.

Dozens of prisoners have died during the research. In one test, 10 Iranian prisoners were taken to an open-air site near Iraq's border with Saudi Arabia. There they were tied to posts and left helpless while shells loaded with anthrax were detonated by remote control 15 yards away. The prisoners' heads were shielded to protect them from shrapnel so that the effectiveness of the bacteria could be observed. All died from the disease.

In another experiment, 15 Kurdish prisoners were tied up in a field while shells containing a pox virus were dropped from a light aircraft. The virus was camel pox, normally a relatively mild disease. Iraqi scientists, however, are believed to have developed a more virulent strain by genetic manipulation. All the prisoners fell ill within a week.

The programme is the focus of Iraq's latest confrontation with the UN, which began when inspectors were prevented from visiting Abu Gharib jail, near Baghdad, to investigate evidence that prisoners had been sent away for experimentation two years ago.

Two of the leading researchers in Iraq's biological programme studied in Britain. Rihab al-Taha, educated at the University of East Anglia, is the head of Iraq's military research and development institute. Another scientist, who received a doctorate in molecular biology from the University of Edinburgh, is said by Israeli sources to have specialized in anthrax although her precise role, if any, in human experiments is unknown.

The evidence compiled by the Israelis could not be independently corroborated. But it appeared consistent with information about Iraq's chemical and biological programmes in documents recovered by UN inspectors after the 1995 defection of Hussein Kamel, Saddam's son-in-law, who had been in charge of Iraq's military procurement programme.

Apparently afraid of what Kamel would reveal after he fled to Jordan, Iraqi officials led the inspectors to a cache of papers they said they had discovered in a shed on his chicken farm in the hope that he would be blamed for the programme. Inspectors raised eyebrows at the fact that the boxes were shiny new while their surroundings were filthy. Kamel was killed on his return to Iraq in 1996.

Among the "chicken farm" documents on biological warfare was a photograph of a human arm with lesions. The inspectors also found video footage of dogs that had died after being exposed to unidentified agents.

Iraqi opposition sources said last week they had received reports of prisoners disappearing from their cells, only to return with mysterious illnesses that proved fatal.

The prisoners, they said, were usually released out of fear of contamination and died afterwards at home.

#### EDUCATION IN AMERICA

Mr. DOMENICI. Mr. President, I note the presence on the floor of the chairman of our committee that handles education matters, Senator JEFFORDS. You have talked to me a lot of times about the reforms necessary in education. I look forward to your committee doing some real reform work.

I ask unanimous consent to have printed in the RECORD something I read today with great embarrassment and chagrin on the front page of the Washington Post: "U.S. High School Seniors Rank Near Bottom" when it comes to math and science. They are not at the bottom of the free world when they finish the first grade and the fourth grade. They are in good shape. However, when they graduate from high school, they are at the bottom rung of all the countries that will be competing with us in the next millennium for the kind of competitive industries and the kinds of things that are necessary to keep America strong.

There being no objection, the material was ordered to be printed in the RECORD, as follows:

[From the Washington Post, Feb. 25, 1998]

U.S. HIGH SCHOOL SENIORS RANK NEAR BOTTOM—EUROPEANS SCORE HIGHER IN MATH, SCIENCE TEST

(By Rene Sanchez)

American high school seniors have scored far below their peers from many other countries on a rigorous new international exam in math and science.

The test results, which were released yesterday, present a damning assessment of

American students in their last year of mandatory schooling: In both subjects, their scores ranked close to last among the 21 nations that participated. And their showing was much worse than the marks that American elementary and middle school students have earned on similar international exams in the past two years.

Even the scores of academically elite American students—those who take either physics or advanced math courses in high school—were a disappointment. They also finished below the international average and lagged behind many other nations on the latest test.

The nation's education leaders reacted with dismay to the poor results yesterday. Education Secretary Richard W. Riley called the American scores "unacceptable" and said that too many schools are failing to establish tough academic standards for students and often lack qualified teachers in math and science even when they do.

"We need to have higher expectations for our students," Riley said. "Many of our students stop taking math and science after 10th or 11th grade."

Riley said that middle schools also may be a source of the problem. "Other nations begin to introduce challenging concepts such as algebra, geometry, probability and statistics, but we continue to focus on arithmetic, even though our students are good at arithmetic," he said. "So we shouldn't be surprised that by the 12th grade, our students have fallen even further behind our counterparts abroad."

The work of American fourth-graders is quite strong in math and science when compared to similar students in other countries, but from that point their scores decline in international tests. American eighth-graders posted mediocre marks in both subjects when their work was matched recently against counterparts around the world.

In a speech to the National Council of Jewish Women yesterday, President Clinton said the fact that fourth-graders do well while eighth- and 12th-graders struggle indicates the problem lies in instruction, not in the abilities of students, or that the United States has more students from disadvantaged backgrounds than other nations.

"The fourth-graders represent the same socioeconomic diversity" as the older students, Clinton said. "Therefore, there is something wrong with the system. . . . I do not believe these kids cannot learn. I am tired of seeing children patronized because they happen to be poor or from different cultural backgrounds than the majority. That is not true."

About 10,000 seniors selected randomly from more than 200 public and private high schools across the United States took the international exam. American high schools are often run quite differently from secondary schools abroad. Here, most schools are comprehensive and strive to teach all types of students. In other countries, however, many teenagers are instead placed into specific kinds of schools, some heavily academic, others vocational. But test officials said they accounted for the differing academic arrangements in other countries by giving the test to students from varying backgrounds and types of schools.

The 90-minute test assessed students' general knowledge of math and science concepts through problem-solving and multiple-choice questions.

Only 57 percent of American students, for example, chose the correct answer to this question: "Experts say that 25 percent of all serious bicycle accidents involve head injuries and that, of all head injuries, 80 percent are fatal. What percent of all serious bicycle accidents involve fatal head injuries?" The answer is 20 percent.

American students fared poorly in math and science even though they expressed more enthusiasm for learning the subjects than their peers in other nations and reported using computers and having lab experiments and practical lessons more often in class.

Also, none of the Asian nations that have finished at the top of other similar tests in math and science participated in this one. Most of the countries that excelled on the exam are in Europe, in particular the Netherlands, Sweden and Norway. But Canada and New Zealand also had higher marks than the United States. American scores were comparable to those of students from Russia, Italy and the Czech Republic. American students outperformed students only in Cyprus and South Africa.

"This study is a wake-up call for us to change the culture in the classroom," said Gerry Wheeler, executive director of the 53,000-member National Science Teachers Association. He added that many science teachers say they get mixed signals about what to teach and lack the time and resources to achieve more in class.

A report on the test, which was supervised by the Education Department and similar government agencies around the world, does not give conclusive reasons for why American students had such a dismal performance. But it offers possible clues.

First, researchers said that school curricula seem stronger in other nations than in the United States. The percentage of high school seniors taking math and science courses also is lower here than in most other nations. American students spend fewer hours on homework than most of their international peers. And many more American high school seniors work. More than half of them who took the test said they spend three hours a day at a paid job. Only about one-fifth of high school students from other nations had to balance a daily job with their class work. American students reported watching roughly the same amount of television weekly as students abroad.

To some educators, the test results starkly reveal how far the nation's high schools are from the goal state governors set at the start of the decade: to make American students "first in the world" in math and science.

Many states and school districts have begun the difficult task of revamping what they teach in those vital subjects, and there are signs that strides are being made. On another highly regarded exam, the National Assessment of Educational Progress, student scores in math and science have risen in recent years.

But some of the nation's top business leaders, worried about American competitiveness in the global economy, have been pressuring schools to show more academic progress. "These results are very disappointing," said Susan Traiman, who directs education initiatives for the Business Roundtable, a national group of executives from large corporations. "It looks like reforms are taking hold in the early grades, but one we get beyond the basics, it's clear that our curriculum is still not demanding."

Other educators, however, contend that drawing profound conclusions from an international test is risky, even dubious, because the educational systems of other nations are so different from those in the United States, where schools are run locally and often have extraordinarily diverse student enrollments. Of the 21 nations that took part in the latest test, for example, half had a strict national curriculum, a notion that much of the American public views either with suspicion or hostility.

Riley said the poor test results offer compelling evidence for why states and Congress