Darlene always has a smile for everyone who walks into my office. She always knows who to call to solve a problem. She has been a mother figure and an inspiration to all of the young people who have interned in my Las Cruces office.

Darlene has been my representative to the business community, worked extensively with county and municipal government officials and of course, the Hispanic community. She has worked on border issues and has helped keep the Texans under control The latter is no small feat.

I want to thank Darlene for all of her hard work, and wish her the best in retirement. God bless you, Darlene, for all that you have done for me and for the people of New Mexico.●

HONORING RODRIGO d'ESCOTO

● Ms. MOSELEY-BRAUN. Mr. President, it is my honor to rise today to recognize a distinguished resident and successful businessman from my home state of Illinois, Mr. Rodrigo d'Escoto. Last month, Mr. d'Escoto was named the National Minority Male Entrepreneur of the Year by the U.S. Department of Commerce's Minority Development Agency. This award recognizes Mr. d'Escoto's Hispanic heritage, his success as an entrepreneur, and his service and dedication to the community.

Mr. d'Escoto is the founder and chairman of d'Escoto, Inc., a Chicago-based architectural engineering firm. Established in 1972, d'Escoto, Inc. is one of the largest Hispanic-owned firms of its kind in the Midwest. Over the last twenty five years, the firm has participated in some of the most ambitious and important design/construction projects in the Chicago area. These projects include the Northwestern Memorial Hospital Expansion project, the expansion of the McCormick Place Convention Center and Hotel, the construction of the new Cook County Hospital, the ongoing expansion of O'Hare International Airport and the construction of the airport's new international terminal. Certainly, Rodrigo d'Escoto and d'Escoto Inc. have contributed greatly to the look and structure of Chicago, one of the world's great architectural cities.

As is often the case with someone who has achieved so much professionally, Rodrigo d'Escoto is a committed community member. Among the many boards and organizations that Mr. d'Escoto has given his time and expertise to are: the Harold Washington Foundation, the Urban League, the United Way, the United States Hispanic Chamber of Commerce, the Pilsen Resurrection Development Corporation, the National Association of Latino Elected and Appointed Officials, the Centro Hispano Americano, the City of Chicago Planning Commission, the Alliance of Latinos and Jews, and the Hispanic American Construction Industry Association. It is important to note that this is only a partial list of the many worthwhile and important enterprises that Rodrigo d'Escoto has touched over the years.

Mr. President, as one can see, the dimensions of Rodrigo d'Escoto's professional and civic accomplishments are of breathtaking proportions. Indeed, he is quite deserving of being named the National Minority Male Entrepreneur of the Year. I am confident that my Senate colleagues will join me in congratulating Mr. d'Escoto and d'Escoto, Inc. for this prestigious award, and in wishing them much continued success in the future.●

HIGHER EDUCATION REAUTHORIZATION ACT

● Mr. ABRAHAM. Mr. President, I rise today to express my strong support for the Higher Education Reauthorization Act that passed the Senate by a 96–0 vote last week.

Mr. President, this legislation illustrates this Congress' strong support for education, particularly higher education. This bill will make strong investments in our future by increasing the availability of financial aid to students in need, thereby allowing more students to benefit from our higher education system. Specifically, the bill lowers students' five-year loan rate to the lowest it has been for 17 years. Congress was able to strike a balance of lowering the rates students pay on their loans to 7.46 percent while keeping commercial lenders in the market. This reduction in interest rates will result in a savings of $700 on the average debt of $13,000 and savings of more than $1,000 on a $20,000 debt. By striking this balance, the long-term stability of the student loan program will continue.

The Higher Education Reauthorization Act also increases the maximum Pell Grant available to low-income students. Beginning in 1999, the maximum student Pell Grant authorization level will increase gradually each year from the current level of $3,000 to $5,800 in 2003. This change will enable low-income students to afford college and accumulate less debt.

The bill also includes an important change to the State Student Incentive Grant (SSIG) program that is of particular importance to me. Under this legislation, the SSIG program was reformed and changed to the Special Leveraging Education Assistance Partnership (LEAP) Program. Working with Senators JEFFORDS, COLLINS, and REED, I was able to have language included under the LEAP Program to provide scholarships for low-income students studying mathematics, computer science, or engineering. I believe this language is particularly important given the current shortage of high-tech workers. Through the LEAP program, States are provided matching money from the Federal Government to provide grants for students entering various fields of study.

The Higher Education Reauthorization Act makes a strong commitment to pre-K and K–12 education by creating a loan forgiveness program for students who earn a degree and obtain employment in the child care industry, as well as for students who gain teaching jobs in school districts serving large populations of low-income children. The loan forgiveness program will provide an important incentive for teachers to go into underserved areas and fields. Coupled with this provision, the Higher Education Act strengthens and promotes greater accountability within current teacher preparation programs. The legislation provides State and local partnerships with incentives to place a greater focus on academics and strong teaching skills for teacher certification programs. By focusing on teacher preparation, this bill increases the likelihood that students will be adequately prepared and able to succeed in our higher education system.

In all, this legislation demonstrates the bipartisan nature of this Congress' commitment to education. This bill will impact thousands of college-bound students each year and will prepare thousands of school-age children for higher education in the years to come.●

THE TRUE STORY OF HYDROGEN AND THE ''HINDENBURG'' DISASTER

● Mr. HARKIN. Mr. President, for many years I have spoken of the promise of hydrogen energy as our best hope for an environmentally safe sustainable energy future. My vision, and the vision of many of our top scientists is simple. Hydrogen, which is produced by renewable energy with absolutely no pollution and no resource depletion of any kind, will prove a truly sustainable energy option.

I recognize that hydrogen is not yet a form of energy widely known to the American public. In fact, hydrogen has an unfortunate association. I would like to spend a few minutes dispelling one unfortunate myth of hydrogen energy.

Mr. President, mention the word ''hydrogen'' and many people remember the *Hindenburg*—the dirigible that caught fire back in May of 1937, killing 36 of the 97 people on board. Now, thanks to the scientific sleuthing of Addison Bain, a retired NASA scientist with 30 years experience with hydrogen, we can state with a fair degree of certainty that the *Hindenburg* would have caught fire even without any hydrogen on board.

This detective story was reported in a recent issue of Popular Science. I ask that the Popular Science article be printed in the CONGRESSIONAL RECORD at the conclusion of my remarks.

Addison Bain collected actual samples from the *Hindenburg*—the cloth bags that contained the hydrogen—which were saved as souvenirs by the crowd awaiting the *Hindenburg* at Lakehurst, New Jersey on May 6, 1937. When these samples were analyzed by modern techniques, Bain discovered

that the bags had been coated with cellulose nitrate or cellulose acetate—both flammable materials. Furthermore, the cellulose material was impregnated with aluminum flakes to reflect sunlight, and aluminum powder is used in rocket fuel. Essentially the outside of the *Hindenburg* was coated with rocket fuel!

Addison now believes that the *Hindenburg* probably caught fire from an electrical discharge igniting the cellulose-coated gas bags. Remember, the ship docked at Lakehurst with electrical storms in the area, which was against regulations.

I would like to personally thank Addison Bain for his valuable contribution to the history of the *Hindenburg,* and to lessening the public's concerns over the safety of hydrogen. Hydrogen, in my judgment, will become a premier fuel in the 21st century, since burning hydrogen produces no pollution of any kind, just pure, clean water. And hydrogen can be produced by using sunlight or wind electricity to split water.

Hydrogen energy has been used safely in the Nation's space program for many decades, and I believe it can be used safely for many other applications here on Earth. For example, hydrogen could be a safe alternative fuel for cars. It would be much less dangerous than gasoline in an accident. Hydrogen gas disperses rapidly, while gasoline lingers in the vicinity of the accident, increasing the risks to survivors of the crash. I believe there are also countless other uses for hydrogen. We can pursue those options without fear because of Addison Bain's efforts. Thanks to Addison Bain, we can continue down the path toward a renewable hydrogen future without the undue fear of a singular event from 60 years ago.

The article follows:

WHAT REALLY DOWNED THE HINDENBURG

(By Mariette DiChristina)

May 6, 1937. The sky still appears moody after a stormy day. A stately, silvery marvel, the 240-ton *Hindenburg* airship glides 200 feet above Lakehurst, New Jersey, at around 7:21 p.m. In a 6-knot wind, the Zeppelin is attempting its first ''high landing'': The crew throws the spider lines out, preparing for mooring. The gigantic ship, nearly three football fields in length, would be slowly winched down.

If you think you know exactly what happened next, Adison Bain has a surprise for you. Six decades after the infamous *Hindenburg* disaster, when 36 of 97 aboard died during the horrific blaze that halted rigid-airship travel, Bain has revealed a stunning new explanation for what started the fire. Bain, a recently retired engineer and manager of hydrogen programs who spent more than 30 years at NASA, has recently concluded several years of scientific sleuthing work in search of the culprit behind the conflagration. He combed through thousands of pages of original testimony and materials at four archives in the United States and one in Germany, interviewed survivors and airship experts, and ultimately tested original materials from the model LZ–129 *Hindenburg* and its contemporaries. Contrary to what the investigators ruled at the time, asserts Bain, the fire did not start with free hydrogen lit by natural electrical discharge or sabotage.

The hunt for the truth about the *Hindenburg* began in the late 1960s for Bain, a genial man with slicked-backed dark hair and a face lined by many smiles. He was working on a hydrogen safety manual for NASA. Sitting in a ''Florida room'' of mint and mauve tiled floors and furniture in a Cocoa Beach apartment, Bain recalls how he paged through the literature on hydrogen. ''Invariably,'' he says, ''the topic of the *Hindenburg* would come up. At the time, I didn't think a lot about it.''

Over the years, however, as he continued his NASA work in hydrogen systems, the reference began to accumulate in his mind. ''What I was starting to notice is that the authors were inconsistent,'' he says. Hydrogen detractors said the gas was so flammable it killed everyone on the *Hindenburg,* which wasn't true—about one-third of those aboard had died. On the other hand, hydrogen promoters pooh-poohed safety concerns and claimed that those who perished did so only because they jumped from the burning airship, which also wasn't true. Says Bain: ''I thought, wait a minute! Where are they getting their information?'' He has also seen the famous photos of the *Hindenburg's* bright, blistering hot fire and knew that hydrogen doesn't burn in that way. A hydrogen fire radiates little heat and is barely visible to the unaided eye.

By 1990, Bain pulled a one-year assignment in Washington, D.C., at NASA headquarters, then across the street from the National Air & Space Museum. ''I like airplanes, so I went over there. Lo and behold, there's this 25-foot-long model of the *Hindenburg* used in the 1975 movie with George C. Scott,'' he recalls. ''I'm looking at that model and a plaque on the wall. The plaque says something about how the hydrogen exploded,'' As a hydrogen expert, he knew that the pure gas doesn't just explode. That was enough: He made an appointment with the archivists upstairs, dooned a pair of protective gloves, and lost himself in decades-old original documents in the museum's *Hindenburg* files for the rest of the day.

His research soon became something of a part-time obsession. Over the next few years. Bain would steal away to the archive and travel to others in College Park and Suitland, Maryland, poring through thousands of pages and copying documents in search of answers. He even traveled to the Fires Sciences Lab in Missoula, Montana. He speculated that, perhaps, some of the airship's materials had played a role in the ignition. Maddeningly, however, he couldn't find the exact formulations used. ''I had the idea of the problem, but needed enough evidence to back my story up,'' he says.

That was as far as he got until 1994, when he ran into Richard van Treuren, a space shuttle technician, at a conference on hydrogen. Van Treuren, a self-avowed ''helium head'' and member of the airship aficionados called the Lighter-Than-Air Society in Akron, Ohio, was seeking Bain to talk about hydrogen. Van Treuren had a book about airships. Bain spotted the book in the crook of van Treuren's arm and bought it from him on the spot.

''The rain still spatters the wet ground in starts and stops. The air is highly charged from the thunderstorms, investigators would rule later. Six and three-quarter acres of *Hindenburg* fabrics is kiting in the breeze. A witness later would recall a bluish electrical phenomenon that dances over the aft starboard side of the *Hindenburg* for more than a minute.''

Through van Treuren, Bain learned that pieces of the *Hindenburg's* skin still existed. Bain traveled around the country to procure them, spending hundreds of dollars buying original materials, books, and papers from collectors. ''What I was trying to find out is, what did they use specifically in the coating?'' he says.

Hepburn Walker, who had been stationed in Lakehurst in the early '40s, was among those in possession of pieces of the *Hindenburg,* Walker had found them in the soil. Another sample, a part of the swastika painted on the *Hindenburg*'s side, was kept in a safe by Cheryl Gantz, head of the Zeppelin Collectors Club in Chicago.

Bain remembers meeting Gantz. ''May I have a little clipping, just anything to take to the lab?'' he begged. Gantz was willing, but wanted to impress upon Bain the fabric's value to her: ''How much do you value your firstborn?'' she asked. Bain laughs: ''I got the message!'' Bain also located fabric samples in Germany that were representative of the top of the *Hindenburg,* where the fire started.

Materials in hand, Bain headed to NASA's Materials Science Laboratory at the nearby Kennedy Space Center. Over the next 14 months, he carefully laid out a systematic testing protocol involving some 14 researchers who would volunteer their spare time to assist in what became known as Project H.

''A jagged fire licks along the aft starboard side of the *Hindenburg,* another witness later recalls. Crewman Helmut Lau, on the lower left of the craft, looks up through the translucent gas cells and sees a red glow. In moments, cells begin to melt before his eyes. The fire crests the top of the *Hindenburg* and spreads outward and downward, toward lau and the others. Girders start cracking and wires snap. With hydrogen still in the cells, the giant airship maintains level trim.''

What was in that fabric? Work to create a chemical and physical analysis included using an infrared stectrograph and a scanning electron microscope, which provided, respectively, the chemical signatures of the organic compounds and elements present.

A startling variety of highly flammable compounds proved to have been added to the cotton fabric base. ''They used a cellulose acetate or nitrate as a typical doping compound, which is flammable to begin with—a forest fire is cellulose fire,'' says Bain. ''OK, you coat that with cellulose nitrate—nitrate is used to make gunpowder. And then you put [on] aluminum powder. Now, aluminum powder is a fuel used on the solid rocket boosters on the space shuttle.'' The wood spacers and ramie cord used to bind the structure together, along with the silk and other fabrics in the ship, would also have added to the fuel-rich inferno. Even the duralumin support framework of the *Hindenburg*'s, rigid skeleton was coated with lacquer, ostensibly to protect it from moisture.

In a flame test, a fabric section ignited and burned readily. The arc test, in which 30,000 volts were zapped across a piece of fabric several inches long, was even more revealing: ''Poof, it disappeared. The whole thing happened faster than I can explain it,'' Bain says. ''I guess the moral of the story is, don't paint your airship with rocket fuel.''

Bain is quick to point out, however, that it's not that the Germans and other airship and aircraft makers of the era were simply foolish in doping the fabric the way they did. They had a number of technical problems to solve using the materials of the time. Today's synthetic fabrics, with their range of properties, did not yet exist. The cotton or linen fabric skin was swabbed with the chemicals to make it taut and reduce flutter for aerodynamics, and then painted with the reflective red iron oxide and aluminum so the sun's heat wouldn't expand the gas in the cells, to help prevent gas from escaping. The skin had to be protected from deterioration from sunlight and rot from moisture. When engineers changed one part of the formulation to address flammability concerns, the

mixture might not have adhered well or other problems would crop up.

''And I'm not saying hydrogen didn't contribute to the fire,'' adds Bain. It is after all a fuel, he notes—and one he is hoping will develop into a replacement or supplement to natural gas. ''But it was a fuel-rich fire already; the hydrogen just added to it.'' Bain figures that maybe half of the 5 million cubic feet of hydrogen remaining aboard the *Hindenburg* after the Atlantic crossing burned in the fire. ''But so what? It's academic.''

Also made academic, perhaps, are decades of speculation over the causes behind the start of the Zeppelin fire. All have blamed hydrogen, with various ideas about how the gas became free and ignited. One popular theory has it that a wire punctured a gas cell. Bain, obviously, finds this doubtful. ''If that happened, it should have occurred during one of the final maneuvers.'' But, ''The ship was stationary for 4 minutes before the first fire was indicated.'' If cells were leaking gas that long, ''The ship should really start going like this,'' Bain says as he tilts a handheld *Hindenburg* model nose upward. ''And it's not. [At the start of the fire,] it's still in trim.''

What about the possibility of loose hydrogen from the vents? Hydrogen was released to help maintain level flight, and others have theorized that a valve may have stuck open. ''The *Hindenberg* had an excellent venting system'' says Bain, with vents between cells that measured some 2 feet high and 7 feet across. If hydrogen accumulated—difficult to imagine for the lightest element, which has the greatest dispersal rate in the universe—how come, he asks, none of the fires were observed at the vent sites atop the ship?

''In seconds, the rear half of the *Hindenburg* is engulfed in bright, writhing flames. Gas cells one and two expand and burst with explosive force; the released hydrogen adds fuel to the conflagration. The ship lurches forward, breaking off water tanks attached by light-release connectors near the bow of the craft. Having lost ballast, the airship's nose heads upward and people start jumping to escape the flames, some too far from the ground to survive the fall.''

What is perhaps most stunning about Bain's research is that what he has discovered comes 60 years after some German airship experts already knew it. While visiting an archive in Germany, he copied two 1937 letters handwritten in German that had not been seen by earlier investigators. Their shocking contents were revealed to Bain only after he returned to Florida and had them translated. They were written by an electrical engineer named Otto Beyerstock, who had incinerated pieces of *Hindenburg* fabric during electrical tests conducted at the behest of the Zeppelin Co. In the notes, Beyerstock testily dismissed the idea that hydrogen could have started the fire, stating with certitude that it could only have been caused by the fabric's flammability in a charged atmosphere. In a similar craft flying under the same atmospheric conditions that the *Hindenburg* faced in Lakehurst, the same sort of conflagration would occur, even if noncombustible helium were used as the lifting gas. (In fact, notes Bain, such a fire did take place in 1935, when a helium-filled airship with an acetate-aluminum skin burned near Point Sur, California.)

''I beg you to kindly inform me about the corrective measures to be taken or that have already been taken,'' Beyerstock wrote to Zeppelin. Some modifications were made in a subsequent airship plan, such as the addition of a fire retardant. ''They knew,'' Bain says simply. But shortly after the *Hindenburg* disaster, and probably because of it, the great Zeppelins were removed from service.

Some detractors are still not ready to put aside the idea of hydrogen as fire-starter. ''Addison Bain's hydrogen background carries some weight,'' says Eric Brothers, the editor of Buoyant Flight, the Lighter-Than-Air Society's bulletin, but not everyone at the society is convinced. The bulletin this year ran three articles detailing the skin-ignition research, coauthored by van Treuren and Bain. As for Brothers: ''I would like to see more independent verification of the tests, though I recognize that that's difficult to do,'' he says. Still, ''I'm 90 percent convinced that the fabric had some role.''

One of the Buoyant Flight articles' most stringent critics is Donald E. Overs, a retired engineer and pilot who worked on Goodyear blimp construction and engineering for more than 20 years. ''Based on the authors' cover burn rate tests, it would have taken anywhere from 15 minutes to probably an hour or more for the cover alone to burn off. The entire ship, on the other hand, was consumed in less than 60 seconds,'' he says. Overs' detailed e-mail challenges to Bain's theory—and the various defenses supporters—would occupy some 50 printed pages. ''Bain can at most demonstrate or argue that the cover was a brief link in the early ignition of the hydrogen, but he cannot prove even that,'' concludes Overs.

''Like the mythical Icarus who ventured too close to the sun, the *Hindenburg* goes down in flames. As it touches the ground, the ship bounces lightly, perhaps still buoyant with remaining hydrogen.''

None of what Bain has learned has diminished his admiration for the engineering achievement in creating the great airships. ''With all due respect,'' he says, ''the Germans did a fantastic job. I admire their technology.

''It was just an unfortunate little flaw, just like the flaw on the *Titanic* and the flaw in the *Challenger*,'' he says, referring to the ''unsinkable'' ship's sulfurous, brittle steel and the space shuttle's O-ring—both of which failed under the prevailing weather conditions. ''You never know what Mother Nature is going to do to you.''●

HIGH-INTENSITY DRUG TRAFFICKING AREA

● Mr. SMITH of Oregon. Mr. President, I rise today to speak for a High-Intensity Drug Trafficking Area (HIDTA) designation for the State of Oregon. On October 1, 1998 Senator WYDEN and I sent letters to the Director of the Office of the National Drug Control Policy, General Barry McCaffrey and Attorney General Janet Reno requesting the designation.

High-Intensity Drug Trafficking Areas (also known as HIDTAs) were authorized in 1988 by the Anti-Drug Abuse Act of 1988 and are administered by the Office of National Drug Control Policy. HIDTA designations are granted to regions that are centers of illegal drug production, manufacturing, importation or distribution and have harmful impacts on the entire country. Once a HIDTA has been designated, increased funding is granted to the State, design strategies to combat drug threats are adopted and these designs are then strategically implemented. The Office of National Drug Control Policy's HIDTA Program has been profoundly successful in those regions where it has been implemented.

Mr. President, the State of Oregon is in desperate need of this designation. Western States—California, Washington, Arizona, New Mexico, and regions in the Rocky Mountains—have received designations to help them combat tremendous drug trafficking challenges. Oregon has been too long without assistance, fighting national and international traffickers.

This request is not idly made. It comes following more than a year of work with local and federal law enforcement agencies, and the U.S. Attorney's Office. There experience, dedication and tireless commitment to eliminating drug production, trafficking, and use is to be commended. Unfortunately, they have insufficient resources to combat this scourge in Oregon or the country. I appreciate their coordinated efforts and have learned through meetings with them and extensive work in my State that we must act—and act now.

I am proud to report that in our first meeting of the HIDTA steering committee, of which I am a member, the Department of Defense announced it was sending Joint Task Force Six to Oregon to engage in a drug threat assessment. As we speak, Task Force Six is conducting its study in our state and will present its report to us at our next steering committee meeting on October 29, 1998. Having requested a copy of the threat assessment for Washington State's HIDTA Program in the Seattle-Tacoma areas and met with Washington State Drug Enforcement Administration (DEA) specialists, I am confident our request will be accepted. The obstacles we face in fighting drug production and trafficking are similar.

Oregon's central location along the Interstate 5, and its proximity to the coast, render it particularly vulnerable to those who move heroine, cocaine and marijuana. For many years traffickers have moved large quantities of illegal drugs along interstate 5, highway 101, highway 97 and interstate 84. Crackdowns along interstate 5 have been successful, but the insufficiency of resources has produced an unbalanced, under-powered drug defense. Drug shipments from Central America moving along these routes continue to increase, while Pacific Rim countries feed the problem through Oregon ports. These drug shipments are then trafficked throughout the continental United States.

This flow, from sources outside Oregon, has introduced a criminal element into the fabric of Oregon society. They came to produce and sell drugs, and stayed to enjoy the climate, the abundance of space and breathtaking beauty, as well as the serenity and tranquility of our fields and forests. These very qualities that make Oregon unique are also the qualities that drug traffickers found beneficial to their trade.

The facts are indisputable. In 1991, only 7 years ago, there were 39 drug-related deaths in Oregon. There were 221