

# Hailing, Failing, and Still Sailing

By Richard Saul Wurman

The winds of Puget Sound twisted, contorted, and destroyed the Tacoma Narrows Bridge but also promoted urgent and exacting aerodynamic research that ultimately benefited all forms of steel construction. Beauvais Cathedral was built to the limit of the technology in its day, and it collapsed, but subsequent cathedrals made use of its failure.

Who's to know where any technology ends if its limits are not stretched? The machines of the world's greatest inventor, Leonardo da Vinci, were never built, and many wouldn't have worked anyway, but he was trying solutions where no man knew there were even problems. Clarence Darrow became a legend in the courtroom as he lost case after case, but he forced re-evaluations of contemporary views of religion, labor relations, and social dilemmas.

Edwin Land's attempts at instant movies (Polarvision) absolutely failed. He described his attempts as trying to use an impossible chemistry and a nonexistent technology to make an un-manu-

facturable product for which there was no discernible demand. This created the optimum working conditions, he felt.

My play was a complete success. The audience was a failure.—Ashleigh Brilliant

### **An Ode to Error**

These people understood, tolerated, and even courted failure. They were alternately exhilarated, confident, and scared to death, but they didn't perceive failure as a stigma. They were able to say, "Sure, that didn't work, but watch this."

He's no failure. He's not dead yet.—William Lloyd George

They saw failure not as a sign of defeat but as a prelude to success. Failure to them was a stage or step to be understood and then used to best advantage—a delayed success. They embraced failure and manipulated it as a creative agent to drive their work. Their lives were failure-success cycles. Their submarines sank, their rockets exploded, their domes collapsed, their serums didn't work. But they documented their mistakes, they tried something else, then something else, and then something else again.

Failure is the condiment that gives success its flavor.—Truman Capote

From the artist's studio to the scientist's laboratory, for the satisfaction of a problem solved or a fortune gained, those who seek to live their dreams and to conquer the new or simply to challenge the status quo all risk failure.

Buckminster Fuller built his geodesic domes by starting with a deliberately failed dome and making it "a little stronger and a little stronger... a little piece of wood here and a little piece of wood there, and suddenly it stood up." He edged from failure to success.

There has never been a time in the industry where there are more opportunities but such a lack of human capital," laments high tech headhunter David Beirne. "The talent is not there to populate all the companies that have sprung up. So a lot of guys who have made mistakes are getting in on the opportunities. A lot of sins are being forgiven.—*Forbes*, "Bouncing Back" (July, 1997)

A television program on "The Mystery of the Master Builders," part of the Nova series, made reference to how architects learned from mistakes to create some of the world's most beautiful Gothic cathedrals.

Builders of Notre Dame in Paris discovered that wind velocity increases with elevations, causing greater stress to taller buildings. "Pressures at the top of Notre Dame were much greater than anyone had foreseen," said the show's narrator. "The builders here had pushed into unknown territory. They faced new challeng-

es, made mistakes, and devised new solutions. Notre Dame established the fashion for flying buttresses, but it was a fashion forged by necessity." And it was forged by trial and error. These discoveries led to the addition of flying buttresses to the cathedral at Bourges, France, which was not originally designed to have them.

But most of us equate failure with inadequacy or rejection. Failure suggests a shame to be borne in secret. Mistakes in school, on the job, or in social milieus are the switches with which we beat ourselves.

A major form of information anxiety exists because of the fear of failing to understand or of admitting a lack of understanding. Assimilating information means venturing into the realms of the new and unknown in order to come to understand them.

Every strike brings me closer to the next home run.—Babe Ruth

With any new undertaking, the risk of failure increases. Some people shun new information and new technology to avoid the risk. Others persist despite their fears, but the burden of their fear of failure will make the acquisition of the new information that much more difficult.

Perhaps if we kept in mind that many extraordinary people expect failure, we wouldn't fear it so much and could begin to learn how to use it.

## Proper Management of Failure Breeds Success

...In the high tech industry, failure is a prized, not a scorned, offense. Along Philadelphia's Main Line, on Wall Street, or in the Motor City, the executive who flops gets driven out and often becomes unemployable. But in Silicon Valley, failure is an everyday event. There's little (if any) stigma attached to a washout. Failing is even considered highly desirable management experience. This forgiving attitude is what makes the technology sector so dynamic. A failure is rarely a dead end; it's just another opportunity. The unemployment rate in Silicon Valley—consistently lower than the national average—reflects this entrepreneurial spirit. Currently just 3 percent of Silicon Valley residents are jobless, versus 5.3 percent nationally.—*Forbes*, "Bouncing Back" (July, 1997)

Success exploits the seeds that failure plants. Failure contains tremendous growth energy.

Human efforts that fail dramatize the nobility of inspired, persistent human endeavor. Great achievements have been built on foundations of inadequacy and error. The discovery of America was made when Christopher Columbus took a wrong turn en route (he thought) to the East Indies. Charles Goodyear bungled an experiment and discovered vulcanized rubber. Sir Isaac Newton failed geometry, and Albert Einstein lacked an aptitude for math. Paul Gauguin was a failed stockbroker, and Alfred Butts invented the

game of Scrabble® after he lost his job as an architect during the Depression. Robert Redford wanted to be a painter.

If failing can be seen as a necessary prelude to impressive achievement, then the process of succeeding itself can be better understood.

The aspiration and determination of an athlete to succeed when his body is ruined, of an engineer to build again when his bridge falls down, of a nation to prosper after its economy has crashed, or of a scientist to conduct years of unsuccessful experiments help us understand the origins of success. Their failures—sometimes quiet and interminable, sometimes quick and spectacular—define the foundations of success, and the spirit it needs.

While thinking about how I was taught values, I realized I was taught to value the effort and the exploration that came before success. I have found that failure and the analysis of failure have always been more interesting to me, and I learn something from them. I don't learn anything by basking in success. When I can honestly say, "I don't know," I begin to know. "I think of information as the oil in a piece of machinery," said Nathan Felde, the founding partner of Mezza. The information permits operation. There are a lot of systems now that are being designed by people who fail to notice that the exhaust pipe runs back into the passenger compartment. They are running along at quite a clip pouring exhaust into the cockpit or the passenger compartment; people are used to it; they have adjusted to a very high level of exhaust.

## You Won't Believe What Went Wrong

Flying is learning to throw yourself at the ground and miss.—Douglas Adams

In order to get to the bottom, in order to find what is there, you really do have to fail. We have a culture that sustains only the manifestation of success.

While many people probably aren't consciously aware of it, we all possess the capacity for endowing failure with more nobility—or at least with more humor and affections. When we look back on our lives, sometimes the things that we remember most fondly are the times when everything went wrong. I know a woman who could write a book about the terrible things that have happened to her on first days: the first day of school, the first day of a new job. Once she wore two different kinds of shoes and didn't discover it until the day was over. Another time she was beset by a case of static cling. After performing in what she thought was an exemplary manner during her first four hours at a new job, a co-worker informed her that she had a pair of rainbow-colored panties clinging to the back of her white blouse.

When people talk about their vacations, invariably what they recount with the most delight are the misadventures. Long after they have forgotten the names of the cathedrals and museums, they will remember the time they went to California and their luggage went to Caracas, when the hotel in Hong Kong lost their reservations and they spent the night in the hotel sauna, when they rushed to the JFK airport in New York to catch a plane that left from La Guardia.

Every exit is an entry somewhere else.—Tom Stoppard

In all my travels, one of my fondest memories was getting stuck on a hot runway in Jodhpur, India. I was en route to Jaipur, and the plane had mechanical difficulties. Airport personnel told us that we would be there for seven hours and would have to wait on the plane. I was the only foreigner on the plane. After an hour, I started berating the airline personnel. I insisted that they find a bus and take us into town so at least we could see the place and have lunch. They did. After letting everyone else off the bus at a restaurant, the driver turned to me and said, “You stay on the bus. You’re going to get a tour of Jodhpur.” We returned to the restaurant to find everyone else still waiting for lunch. Someone from the airlines came and, glaring directly at me, made an announcement, “The plane is ready now, but you are going to eat first.”

We all happily recount our misadventures when it comes to travel. We should be able to do more of this in our professional lives. When John Naisbitt was questioned for acting as a business consultant after his own company almost went bankrupt, he asserted that for this very reason, he was a better consultant. He understood from experience what could go wrong in a company.

In my company, I respect the person who can come to me and say, “I’m sorry. I tried something, and it didn’t work.” I know that the person had learned something.

### **The Breaking Point**

I am interested in failure because that is the moment of learn-

ing—the moment of jeopardy that is both interesting and enlightening. The fundamental means of teaching a course in structural engineering is to show the moment when a piece of wood breaks, when a piece of steel bends, when a piece of stone or concrete collapses. You learn by watching something fail to work. William Lear, who invented the jet that bears his name, invented a steam car and all sorts of other things that he was certain would fail. He felt that there was a cyclical relationship between failure and success, and that failure was the necessary first part of the cycle.

Because a fellow has failed once or twice, or a dozen times, you don’t want to set him down as a failure till he’s dead or loses his courage—and that’s the same thing.—George Lorimer

I often think one’s life is molded more by inability than ability. When I visited the aerospace museum in Washington, D.C., as marvelous as it is, I missed the epiphany of things that failed. A few years ago, to celebrate the anniversary of the Wright airplane, there was an article in *Scientific American* about the Wright brothers and their inventions. It made me think about the beginning of that wonderful film, *Those Magnificent Men in Their Flying Machines*, in which you see a litany of failed aircraft. You laugh, but you also see how seriously involved everybody was in trying to fly. All the failure, all the things that didn’t work, make you realize that the Wright brothers were really something. All the paths taken, all the good intentions, the logistics, the absurdities, all the hopes of people trying to fly testifying to the power we have when we refuse to quit.

## Museum of Failure Is Overnight Success

There should be a museum dedicated to human inventive failure. The only problem it would face would be its overnight success. In almost any scientific field, it would add enormously to the understanding of what does work by showing what doesn't work. In developing the polio vaccine, Jonas Salk spent 98 percent of his time documenting the things that didn't work until he found the thing that did.

A scientist's notebook is basically a journal of negative results. Scientists try to disprove their ideas—that is the work they do. "Images become useful to scientists to the extent that they contain information that contradicts conventional wisdom, forming the basis of a polemical understanding of nature," according to Chandra Mukerji in a paper, "Imaginary Dialogues: The Practice of Picture-Making in Scientific Research," delivered at the International Sociological Association and published in 1986.

As economist Kenneth Boulding said, "The moral of evolution is that nothing fails like success because successful adaptation leads to the loss of adaptability... This is why a purely technical education can be disastrous. It trains people only in thinking of things that have been thought of and this will eventually lead to disaster."

If you put a camera on the Golden Gate Bridge and photographed it for twenty years, you wouldn't learn very much because the bridge succeeded. You learn much more from the documentation of failure. So failure can be defined as delayed success.

The anxiety associated with failure inhibits us from exploiting our creativity, from taking the risks that might lead us into new territory, and from learning and thus assimilating new information.

An acceptance of failure as a necessary prelude to success is imperative to reducing anxiety.

## Some of My Failures

For most of my career, I was not successful. I couldn't glue two nickels together. At best, I kind of failed sideways my whole life, although to call some of what happened "sideways" would be to give it a pretty face.

Apparent failure may hold in its rough shell the germs of a success that will blossom in time, and bear fruit throughout eternity.—Frances Watkins Harper

I started an architecture firm with two partners, and for thirteen years the firm never made it. My partners couldn't get clients, and I couldn't bear the idea of doing what some body said to do; I was kind of an angry young man. Before the firm could go bankrupt, we closed it. I had no idea what I was going to do. That was not a trivial failure. I mean, thirteen years of struggling is not a trivial amount of time. I've had lots of other failures.

Through the 1970s I lived thinly, although other people always thought I was rich, even when I was living in a third-floor garret over a restaurant kitchen in a bad part of Philadelphia and didn't own a car. People thought I was independently wealthy because I dressed badly and didn't care what I said at meetings. "You always must have had money," they'll say to me now. "I mean, you always did what you wanted to do." Yeah, and that's equated with money.

It was the only way people could explain it to themselves. By 1981, all I owned was a used Honda. I didn't have a business.

Despite my subsequent success with Access Press, the Smart Yellow Pages, then with Information Anxiety, and the TED conferences as they found an audience, I have continued with failures. I have a phrase, like a mantra, that I tell people all the time: "Most things don't work." This doesn't just refer to bad ideas. I have lots of ideas; more than that, I have lots of good ideas. Lots of my good ideas never happen for various reasons.