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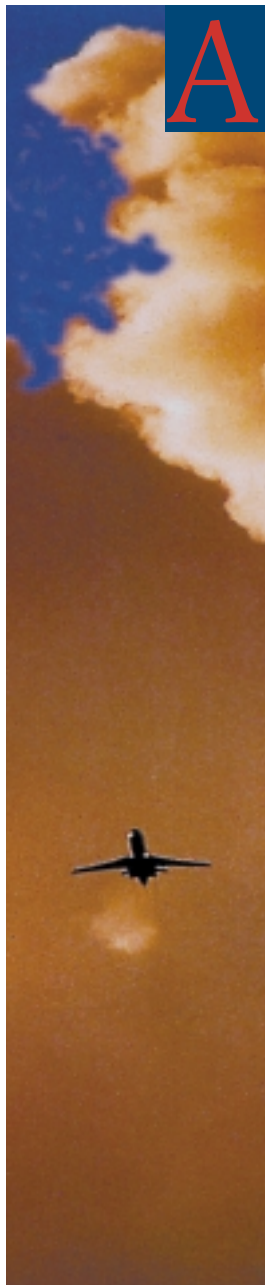
JOURNAL OF AIR TRANSPORTATION PROGRESS

WINTER 2001 ISSUE
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TRANSPORTATION DEVELOPMENT GRIDLOCK: SYMPTOM OF AN AMERICAN PROBLEM IN CREATING PROGRESS?

THERE IS A NEED TO BEGIN A MULTI-DISCIPLINE DIALOG ON HOW AVIATION AND OTHER ADVANCED TECHNOLOGIES CAN ATTACK CONGESTION AND INEFFICIENCY. DEEP CULTURAL CHANGES MAY BE NEEDED TO CREATE A LONG-TERM SYSTEMS APPROACH TO TRANSPORTATION...AND OTHER QUALITY-OF-LIFE ISSUES.



Air and surface transportation, education, energy, crime, the environment, drugs...what do they all have in common? For starters, they're issues which upset Americans and are sure to evoke animated debate. Moreover, all depend for solution on long-term infrastructure planning.

Americans can outperform just about everyone when it comes to fast-selling information technology products. We're experts in the quick-return-on-investment business, and lead the world in developing and building what can be consumed in time to assure respectable quarterly earnings. Politicians, faced with raising big money to be elected, are under pressure show their constituents and donors measurable results in two or four years. Long-term, comprehensive infrastructure development suffers in such a time-frame. Today everyone knows the diagnosis, but the cure is elusive.

An innate strength is found in the American ability to respond impressively to clear and present threats to our system, however flawed it may occasionally appear. The last two Briefings on World War II aviation related how U.S. technology was shamefully unprepared, but when the peril unfolded in Europe, our integrated response was massive.

Hiller Aviation Institute's Director of Education, Dr. David Nixon, cites the nation's rise to another crisis that teamed diverse technologies in an unstoppable systems effort: After Sputnik pioneered space, it was a U.S. imperative to catch up fast by planting man on the moon. Evidently, crisis works for us.

In the year 2001, transportation infrastructure *is* a crisis, says Dr. Nixon. *Page 2* ➤



David Nixon, the institute's Director of Education, was himself educated at the University of Belfast and earned his Ph.D. in Aeronautical Engineering from the University of London. Author of two books and over 140 articles about aerodynamics, he was most recently Chief of the Aeronautical Information Technologies Division at NASA Ames.

Hiller Aviation Institute: Developing a Vision for Transportation

The idea which created Hiller Aviation Museum was to bring to life a history lesson, a living foundation for planning future air transportation. Having developed what many agree is an impressive, even surprising, collection of aviation displays, the next step toward the original concept was taken by the Board of Trustees: an Education & Research Center was evolved from the museum. The consolidation is today's Hiller Aviation Institute, guided by Chairman Stanley Hiller and Executive Director Admiral William Kozlovsky.



The institute and its museum have goals that focus on the current and vital mobility issues of American life: (1) Grow as an education center for transportation progress; (2) cultivate Silicon Valley technologies to seize new roles in mobility development; (3) build a "long view" of infrastructure progress, exhibiting linkages from aviation's past to the next hundred years of *intermodal* transportation.

Here, in the nation's center of creative technology, is a place to begin replanning the operations and economics of transportation in long-term, human perspectives.

Not the "systems" solution:
THE INGLORIOUS ROYAL
AIR FORCE CAT DROP



In the 1950s, many Dayak villagers in Borneo had malaria, and the World Health Organization chose the simple and direct solution of spraying DDT. The mosquitoes died; malaria declined. But the DDT also killed tiny parasitic wasps that had previously controlled thatch-eating caterpillars, and the roofs of villagers' houses began to collapse. The colonial government issued sheet-metal replacement roofs, but people couldn't sleep when tropical rains turned tin roofs into drums. Meanwhile, the DDT-poisoned bugs were being eaten by geckoes, which were eaten by cats. The DDT invisibly built up in the food chain and began to kill the cats. Without cats, the rats multiplied. WHO, threatened by potential outbreaks of typhus and sylvatic plague, which itself had created, was obliged to parachute 14,000 live cats into Borneo. Thus occurred Operation Cat Drop, one of the odder missions of the British Royal Air Force.

Source: "Natural Capitalism" by Paul Hawken and Amory and L. Hunter Lovins. Little, Brown & Co., 1999.

► **Transportation Development:** (Continued from page 1) **But is there really a problem?**

The Repairing of America

Business Week editorial

Forgive us for sometimes feeling like Americans live in a Third World country. Planes don't take off and land on time. Electricity shortages plague business and consumers... Despite its vaunted high-tech prowess, America suffers from severe infrastructure problems that require immediate attention... It's the 21st century, folks, time to rebuild America's archaic infrastructure...

Flight Control Computers Fail

AP Newswire

...Many flights are cancelled... But the failure pointed to troubles with the nation's air traffic control system...now increasingly criticized as outdated. [UAL Chairman James Goodwin:] "Air traffic...delays and cancellation are growing exponentially, dragging down the entire air transportation system's performance and reliability."

Transportation Blueprint: 21st Century

San Francisco Chronicle

...The Bay Area is experiencing both aging and growing pains in its transportation system ...with more workers in-commuting [from other countries], further straining roads and rail... There's not much left in the region's bank account to pay for expansions and improvements to our highway and transit network...

President moves on airport congestion

Cox News Service:

Railing at what he called "horrendous" delays in commercial air travel, President Clinton announced a series of small measures aimed at easing congestion... The U.S. Chamber welcomed the measures...but said Clinton's plan did not address the core cause... [David Hirschmann, senior vice president:] "This has reached a point where it's a threat to the economic future of the country."

What's at Stake in U.S. Aeronautics Decline

Editorial, Aviation Week

[Quoted letter to editor:]...trend one is flight delays and congestion ...trend two is typified by poor morale, mindless cost-cutting, lack of vision at the top, and technology stagnation. [Letter from Boeing mission analyst Ken vanderHorst:] FAA certification procedures are giant obstacles to technological improvements...The results are delays and shrinking industry budgets. ...We don't have a technological problem but do have an administrative one.

AIRPORT HELL

Business Week

Airport delays are up 14% over last year...that's on top of a 58% increase in the past five years... [Current]...prescriptions don't cure the real disease: a lack of air and ground capacity to meet demand. ...there are lots of promising new technologies that could improve the efficiency of air space. But the FAA has been singularly unable to implement modern technologies, says Daniel M. Kaspar of economics consultancy LECG Inc. At least, the nation needs a national airport development plan that rises above local interests...

Envisioning a new millennium

Aviation Week (Segment by Burt Rutan)

With the exception of avionics, there have been no significant aerospace breakthroughs in the last 30 years... The convenience and speed of air travel have not improved in the last 40 years...despite advances in computers, virtual reality, communication, quantum mechanics, molecular level manufacturing, and energy.



In search of solutions

Americans are no longer in denial about the sorry state of the nation's transportation infrastructure, and technology-rich companies and federally-funded research organizations show frustration with the roadblocks keeping their capabilities out of the advancement of civil transportation. NASA and FAA staffers increasingly report their leaders don't even ask for long-range, integrated project financing for civil infrastructure, knowing it will be unpopular with congress.

Hiller Aviation Institute educational and research branches have been looking at this problem with the idea of promoting public awareness about it and creating a learning dialog among all relevant disciplines. Institute staff and the Technical Advisory Committee are encountering a pervasive belief in government, business and academia that a fundamental weakness exists in American socio-economics which is preventing long-term, comprehensive, systems-solutions in air and surface transportation, and it's the same weakness which stifles progress in other quality-of-life issues.

Are we permanently stuck with fast returns on investments and single-term results in politics? Are we forever locked in conflict between expectations of smaller government, tax relief and stock price growth, and expectations of

better personal mobility and education? It often seems so, when flyers, railroaders, teachers, medics and other public services join in a cacophony of grumbling about inadequate funds, even during a booming economy. No wonder: there is no comprehensive, long-range systems structure into which each solution fits. Bureaucratic chaos, some might call it.

Paul Hawken, in his co-authored book *Natural Capitalism*, sees an urgency in understanding the interlinked patterns in satisfying human needs. A "market economy" is real only if it deals in the long-term markets which work for our children and their futures, not just us and today. The book says fundamental reorganization of our economic culture is possible. "This systems approach not only recognizes underlying causal linkages but sees places to turn challenges into opportunities. Communities and whole societies need to be managed with the same appreciation for integrative design as buildings, the same frugally simple engineering as lean factories, and the same entrepreneurial drive as great companies."

Failing transport and education infrastructures will eventually defeat America in the global market. Creating a communications base for systems planning has therefore become an education and research purpose of the institute and its museum, linking lessons of the past to the next 100 years. ■

WILL AMELIA EARHART BE FOUND AT LAST?

THOSE WHO WON'T GIVE UP ARE FOCUSING ON A LOCATION: 20 TO 50 NAUTICAL MILES NNW OF HOWLAND ISLAND.

It was one of the last legs of a round-the-world flight that would move aviation to a new historic level in human mobility, certainly female mobility. At precisely 10:00 a.m. on July 2, 1937, Amelia Earhart and her navigator, Fred Noonan, took off from Lae, New Guinea, in the remote Southwest Pacific; destination, tiny Howland Island 2,200 nautical miles distant.

The eyes of the world were diverted momentarily from the evolving threat of a Japanese military, which later that same month would extend its drive to Asian dominance by invading China; diverted, too, from Germany's war plans, most visible in its new generation of combat aircraft, and a military coalition with Fascist Italy in support of Spain's dictator Franco. Although the U.S. was locked in neutrality treaties, global realists saw the Japanese and Nazi moves as a dress rehearsal for World War II.

Seated at his navigation table some ten feet aft of Amelia in the cockpit, Noonan shook off his evening's drinking party, which concluded just three hours before the 10 a.m. takeoff. In his book *The Last Flight of Frederick J. Noonan and Amelia Earhart*, retired Marine Major Bowen Weisheit tells of the fifth-a-day habit of his fellow navigator, but also proclaims him best in the busi-

ness. Noonan in the early 1930s had set up the first Pan Am flights crossing the Pacific Ocean and the China Clipper flights to the Far East, Philippines and the South Pacific. Major Weisheit, who in World War II himself plotted paths across the Pacific for U.S. transport planes, today believes Fred Noonan's loss was enormous in terms of America's preparedness for war; he was *that* respected as a teacher of early aerial navigation.

Between Noonan and Earhart there was evidently respect, but no love lost. At the last moments of their fateful flight in the twin-engine Lockheed Electra, such unfavorable

human factors seem to have caught up with them: disagreement over a critical turn as they sought Howland Island, the growing weariness of both pilot and navigator, the ten-foot separation between them exacerbated by a virtually uninsulated racket-roar of Pratt & Whitney Wasp engines, and the



pervasive smell of gasoline stored in extra cabin tanks. The lack of communications was seen by author Weisheit as both emotional and physical, building from weeks of strenuous global circumnavigation.

Dennis reenacts, reassesses

In 1997, venture capitalist and aviation adventurer Reid Dennis flew his Grumman Albatross amphibian along the Earhart global route in company with a restored Lockheed Electra 10E identical to Amelia's, piloted by aviation historian Linda Finch. Dennis bankrolled

Fred Noonan, world-renowned aerial navigator, and aviatrix Amelia Earhart, pictured with an identical Electra restored and flown by Linda Finch, exactly six decades later. Earhart was the first woman to fly across the Atlantic in 1928 at age 31, but she was also a social worker, author, educator, businesswoman, and promoter of women's rights. Perhaps the best book on her life is *East to the Dawn*, by Susan Butler. Da Capo Press, 1999, soon to be available in the Hiller Flight Shop.

From the cockpit of the restored Linda Finch Electra, Howland Island comes into view in 1997. It was the sighting Amelia desperately sought and never made, her errant plane running out of fuel in hazy conditions.

production of a documentary entitled *The Final Hours*, released on public tv in 1998. (The video is available in the Hiller Aviation Museum Flight Shop).

The two planes visited 20 countries on six continents, finally arriving at Howland

Island. Dennis says his experience helped confirm the location of the original plane's crash as it ran out of fuel.

Now that most alternative conjectures about the cause of Amelia's and Fred Noonan's disaster have been laid to rest, (including Japanese capture of the couple for spying), there is a new interest in finding their plane on the ocean floor. (See announcement page 4). Why? because the location has been continually refined in research, and deep-sea retrieval technology has advanced in recent years.

Stay tuned, says Dennis, despite his own healthy doubts. We haven't heard the last of Amelia Earhart's fateful flight.

Admiring crowds surround the Reid Dennis Grumman Albatross. His round-the-world flight with the restored Electra was tied to educational programs at the Smithsonian Institution and various schools. Dennis learned to fly in the sixties, and spent seven years rebuilding the Albatross to modern standards.

Coming Events

FOR MORE INFORMATION, PLEASE CALL 650-654-0200

SPECIAL FORUM PROGRAM: AMELIA EARHART

SATURDAY, MARCH 17



The Earhart mystery is explored by a panel of experts as fresh plans are laid to find her somewhere in the Pacific Ocean.

1:00 p.m. Overview and introductions. Master of Ceremonies: Aviation spokesman Gordon Bowman-Jones.

1:05 p.m. to 1:30 p.m. Author and historian Elgen Long: *Solution to the Earhart Mystery* (video & overheads).

1:30 p.m. to 2:10 p.m. Aviation veteran and venture capitalist Reid Dennis: *Presentation depicting the fateful Earhart flight*.

2:10 p.m. to 2:50 p.m. David Jordan of Nauticos, the deep sea exploration company that found Titanic, and Steve Lyons, NOVA tv consultant: *The Alliance Solution*.

2:50 p.m. to 3:00 p.m. Master of Ceremonies introduction of honored guests.

After 3:00 p.m. Opportunity for press and tv interviews of participants.

STAR WARS "PODRACER" EXHIBIT VISITS MUSEUM

MARCH 3 – MAY 30

"Science Fiction to Science Fact" is an unusual visiting exhibit at the Hiller that will excite the imagination of the whole family. It's a replica of Anakin Skywalker's Podracer from the 1999 movie *Star Wars: Episode I The Phantom Menace*.

This interactive exhibit explores the role of science fiction imagination as inspiration to those who create actual technology. It's comprised of two suspended engines, a cockpit, and life-size Anakin Skywalker, along with five exhibit cases and two *Nintendo 64* game stations. Visitors can take the controls in the *Star Wars: Episode I Racer* video game created by LucasArts and Nintendo.



NEW GYROPLANE HIGHLIGHTS VERTICAL FLIGHT AWARD

SATURDAY, MARCH 24

11:00 a.m.



In this special event, the "Pioneers of Vertical Flight Award" will be presented by Groen Brothers Aviation, Inc., to Stanley Hiller. Immediately following, GBA will demonstrate the world's first jet powered gyroplane, the Hawk 4. The impressive new vehicle is expected to receive FAA certification next year, and GBA so far has ten authorized dealerships with deposits for nearly 150 aircraft. The award to Stan Hiller recognizes those aviators and designers who produced historical advancements in vertical flight.

Annual Membership Drive

March 3 - May 30

At a time when public concern for air and surface transportation is at an all-time high, private support for organizations addressing these issues is both relevant and timely. The Hiller Aviation Institute, a 501(c)(3) non-profit organization, brings together historical, educational and technological resources to build programs which increase public understanding of transportation issues and inspire career opportunities in aviation and intermodal transportation.

The institute's Aviation Museum branch displays over 50 aircraft exhibits with educational descriptions which analytically look back a century and forward to the next hundred years. From the experience, a clearer vision of where aviation is going can be derived from where it has been. Aircraft events, demonstrations and history programs are scheduled throughout the year.

The Education & Research Center branch has programs for all ages, exemplified by the Science Education Community Outreach Program, model airplane building and flying contests, and rides in planes for ages 8-17 via the Young Eagles program. A Bachelor of Science degree program in transportation is offered through an alliance with Menlo College, and a series of adult forums addresses issues on how transportation changes can affect socio-economic quality of life.

To insure our ability to expand these projects and influence a constructive dialog on transportation solutions, a major part of our funding must come from individuals who believe our mission is worthy. Annual memberships are tax deductible. Membership benefits, which increase at each contribution level, are shown below.

-Dr. William B. Roberts, Director of Development

Membership Application

BECOMING A MEMBER OF THE HILLER AVIATION INSTITUTE MEANS YOU ARE PARTICIPATING IN THE GROWTH OF MUSEUM EXHIBITS AND OF EDUCATION CENTER PROGRAMS.

- Sustaining \$50
- Supporting \$100
- Directors Circle \$250
- Patron \$1,000
- Benefactor \$2,500
- Trustees Circle \$5,000
- Founders Circle \$10,000 and above

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- Annual renewal
- Gift Membership: from _____

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Benefits	Founders Circle \$10,000	Trustees Circle \$5,000	Benefactors \$2,500	Patrons \$1,000	Directors Circle \$250	Supporting \$100	Sustaining \$50
Membership card for free unlimited admission with the following number of guests	7	7	7	5	5	3	1
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Merchandise discount in Flight Shop	20%	20%	20%	15%	15%	10%	10%
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Invitations to new exhibit previews							
Annual Donor Recognition Luncheon							
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BRIEFINGS

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Check our website for
future events
and membership
information:
www.hiller.org

HILLER AVIATION INSTITUTE VOLUNTEER CHRONICLES

BOB MICHAEL: Aviation and All that Jazz



Back in the 50s, Stan Hiller often said the most effective and hard-to-find people in aviation are “creative and articulate engineers.” He found one in Bob Michael, who joined Hiller Aircraft Company in 1956 as a designer. He had come from Lockheed and Transocean Airlines, where he had been a design engineer after serving as a marine staff sergeant in World War II.

One of those versatile employees most companies treasure, Bob enjoyed building employee good will and finding the special humor in a company still remembered for the fellowship nurtured there. It wasn't enough to be a hot engineer who designed the first hydraulic rescue hoist for light helicopters, or developed the human factors for the FH-1100 turbine helicopter well ahead of its time, or took on the job of design/safety engineer for the world's first tilt-wing VTOL transport, the XC-142. He was also a company cartoonist, an events coordinator, a public spokesman, and when someone had to test that rescue sling the first time, it would be Bob Michael.

When Hiller Aircraft left California to become Fairchild

Hiller in 1965, Bob worked for a year helping design a tandem rotor helicopter at Filper Research, then returned to Lockheed, working on the C5A transport and the famed yet secrecy-shrouded DSRV deep submergence rescue vehicle.



Concurrently, he found time somehow to teach engineering at San Jose State University.

Retirement in 1992 was to be a sham from the first, simply allowing him to be more active in radio announcing which he'd done since 1970; to encourage music in young people; to mc for jazz shows and anchor for jazz stations KOHL and KCSM; to arrange musical events; to write for magazines of the San Jose Jazz Society and the Monterey Jazz Festival; to serve as media coordinator for the AT&T San Jose Jazz Festival.

It's all still happening for Bob, along with volunteering for the Hiller on its Exhibits and Display Committee, and giving several speeches a month about the institute to Bay Area civic groups. Recently his talents contributed to a fine new video presentation made for the institute and museum with Weststar Media Productions.

In Bob Michael, founder Stan Hiller still has one of his most creative, articulate-and loyal-engineers at his side.



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