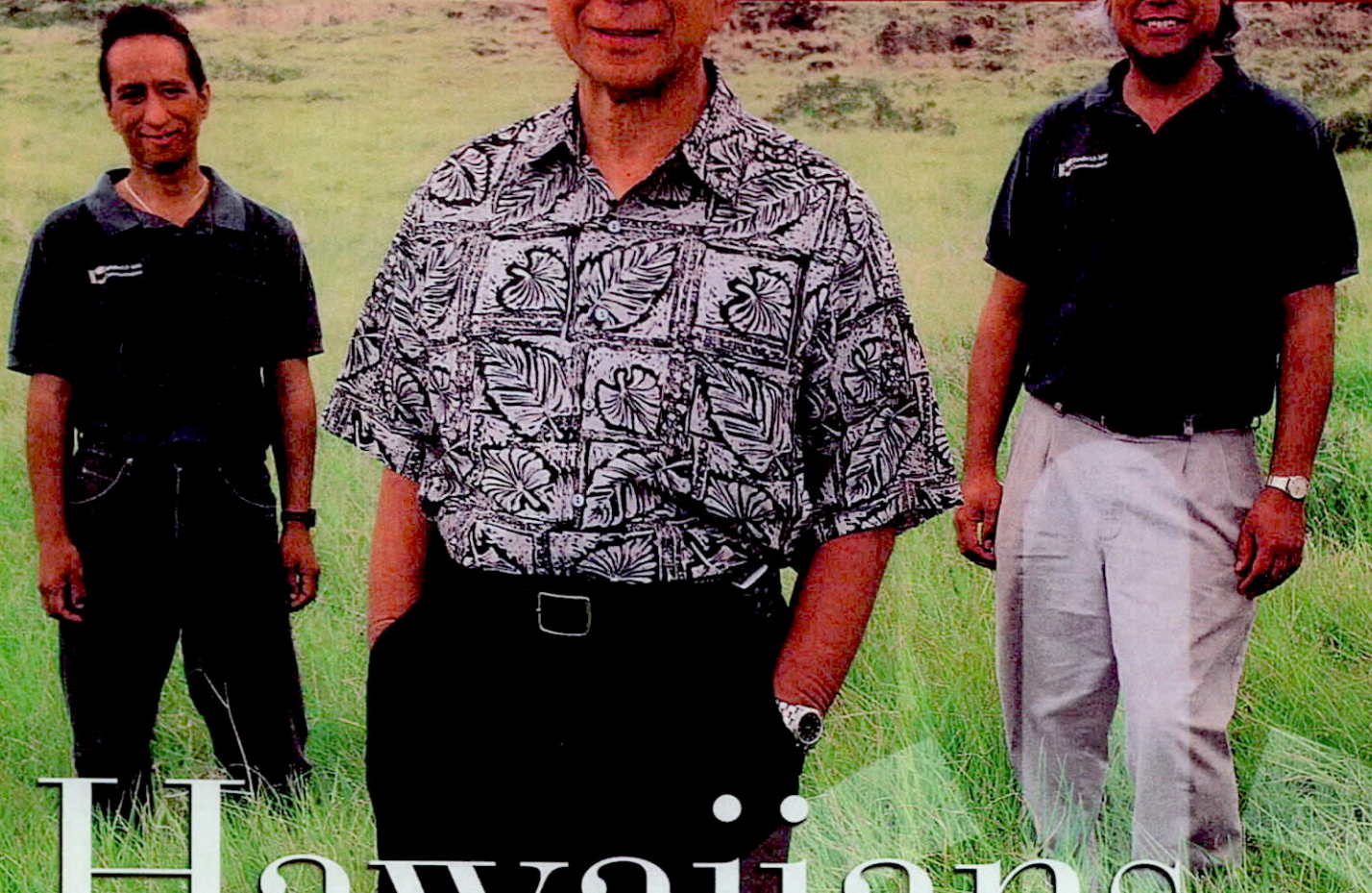


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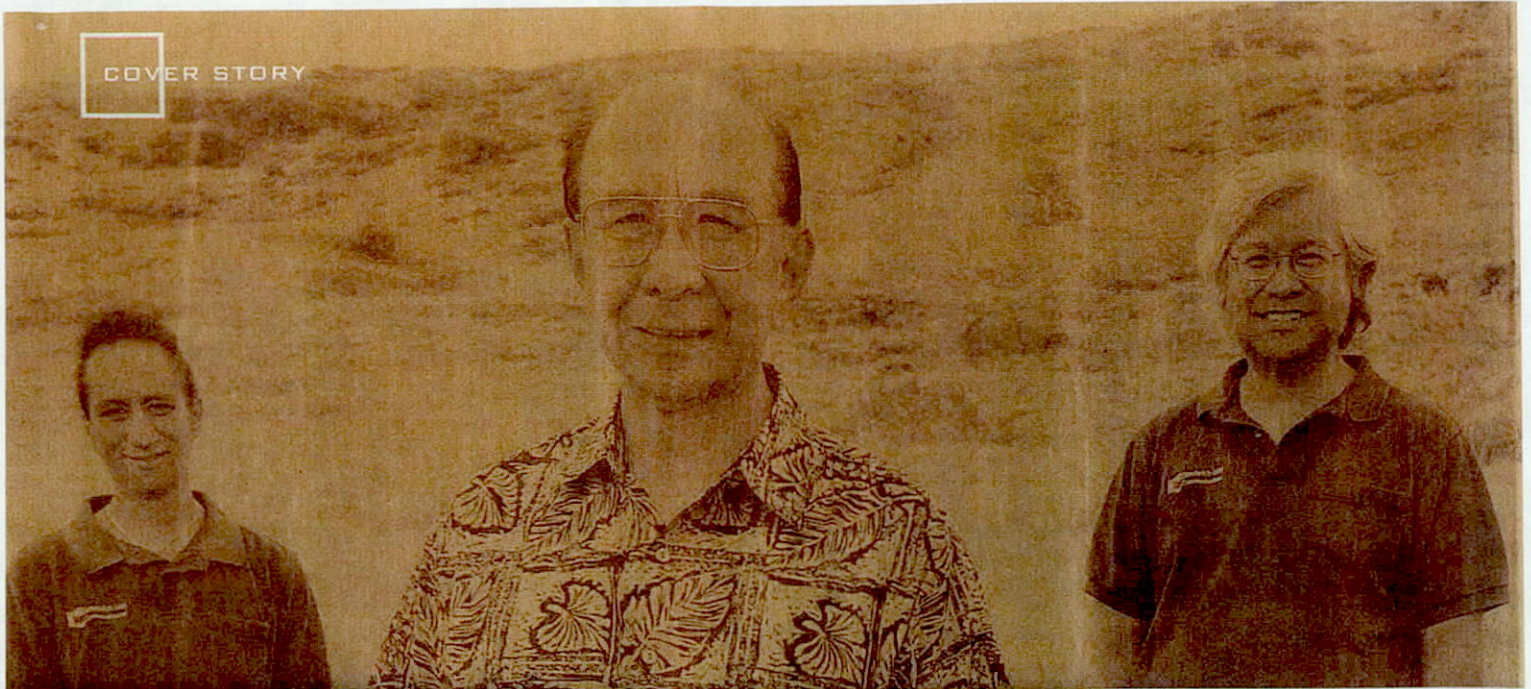


Hawaiians electric

SANDWICH ISLES COMMUNICATIONS INC. BUILDS THE STATE'S MOST EXTENSIVE FIBER-OPTIC NETWORK David K. Choo pg. 14

FROM LEFT TO RIGHT:
UILANE BECK, FIELD
TECHNICIAN, ROBERT
KIHUNE, CEO, AND
RODNEY KAULUPALI,
DEPARTMENT OF HAWAIIAN
HOMELANDS COORDINATOR.





Laniana OLELO

Sandwich Isles Communications Inc. builds the state's most advanced fiber-optic network. **By David K. Choo**

Hawaiians electric

PHOTOS: RONEN ZILBERMAN

▶ **A**l Hee, president for Sandwich Isles Communications Inc. (SIC) knows that if his company is successful in Kahikinui, it can be successful anywhere.

The 20,000-acre ahupuaa on the slopes of Haleakala is the largest and most remote parcel in the state Department of Hawaiian Home Lands' (DHHL) inventory.

THE CABLE GUYS: DHHL Coordinator Rodney Kaulupali and SIC President Al Hee check on Kahikinui's relay station; The two and SIC's Gil Tam survey the landscape; The cable.



COPTER COMMUTE: The only way to get to Kahikinui is via a dirt road or helicopter. (above) Sandwich Isles Communications Inc. CEO Robert Kihune.

An hour's drive from Kahului Airport, Kahikinui is up the road from Upcountry Maui's Ulupalakua Ranch and is as beautiful as it is brutal. Once verdant rainforest, the area, which translates into "big Tahiti," is now wind-swept scrubland, sunny and hot in the daytime and foggy and cold at night. Since 1998, two families have called the vast area home. They have no electricity or water—true homesteaders. But last month, thanks to Hee and his company, the homesteaders now have telephone service and DHHL can start placing an additional 70 families who have been waiting to settle Kahikinui.

"This is really at the heart of what we

are trying to do," says the camera-shy Hee as he gazes down at far-off Makena and Wailea. "We are bringing telephone service to Hawaiian homesteaders no matter where they live. By the time we are finished people here will be able to surf the Web as well as anyone in Honolulu. They'll be able to work from home or start their own on-line businesses."

Founded in 1995, Sandwich Isles Communications Inc. is a rural telecommunications company that has an exclusive agreement with DHHL to provide telephone service to the agency's 69 non-contiguous parcels totaling some 200,000 acres and located on the six major

■ HAWAIIANS ELECTRIC

ALL IN THE OHANA

Sandwich Isles Communications Inc. is starting a family of companies. Jacy L. Youn

Hawaiian Islands. The company is financed primarily by long-term, low-interest loans totaling more than \$400 million from the U.S. Department of Agriculture's Rural Utilities Service (RUS), which is responsible for promoting and supporting the development of utility infrastructure and services in rural America. This federal program is not based on race and has been in existence for more than 50 years. SIC's project is the first application of RUS funds in Hawaii.

In 1998 SIC completed its first project, providing telephone service to homesteaders in DHHL's latest Waimanalo development. Laiopua, above Kona, was next, followed by Kulana Oihi in Kaunakakai on Molokai in 1999 and Kalawahine next door to Oahu's Papakolea. Other projects include Puukapu in Waimea on the Big Island, Kapolei on Oahu, and the aforementioned Kahikinui.

"We are going as fast as Hawaiian Home Lands can build their projects," says retired Vice Adm. Robert Kihune, SIC's CEO. "We want to make sure that when they build the easements to their roads our cables go right into that trench."

The infrastructure that SIC builds comes at no cost to DHHL or its beneficiaries, which means the department saves millions of dollars and eventually more Hawaiians can be settled on homelands at an accelerated rate. SIC's customers pay comparable rates to others in the state for telephone service.

"Back when I was doing subdivision work, the cost for telephone infrastructure might have been as much as \$1,000 a house," says Mike McElroy, DHHL's land management administrator. "It really adds up and that is money we don't have to spend. We can stretch our dollars much further now."

So far, SIC has invested \$30 million in facilities, digital switching and related equipment and services. And the road has not always been smoothgoing, with SIC officials facing as many man-made barriers as natural ones. According to Hee, it took him four years to receive a license from DHHL and three years to get through the Public Utilities Commission when it takes three months for other applicants.

"When we first decided to do this everyone was blocking us and doubting us," says Kihune. "They looked at us like we were crazy. But we had a good goal and that's what drove us."

But as difficult as it was to navigate through government bureaucracy or con-

When Sandwich Isles Communications completes its fiber-optic cables throughout Hawaii, a number of local companies will have already enjoyed benefits as a result of the high-speed network.

Summit Communications, which was incorporated in 1996, went fully operational the following year, providing telecom solutions for multi-tenant buildings. In March 1998, with just 15 employees, Summit entered into a long-term service contract with Sandwich Isles Communications, dedicating roughly one-third of its staff to the project. According to Summit General Manager Chad Johnston, the contract is worth at least \$5 million. It is a five-year project with an option to extend.

"We get about \$100,000 a month," says Johnston, "So they are a big portion of our revenues." Last fiscal year, Summit reported revenues of about \$1.9 million and is looking at a 40 percent increase this year, with sales expected to reach \$3.2 million. Johnston says working with Sandwich Isles has allowed Summit to expand by about 15 to 18 employees. A few, like Johnston, are expatriates. "In the near future our company may increase to 50 percent of what we otherwise would've been, because of this network," he says. "I think Sandwich Isles wants to provide opportunities for our population here."

Sandwich Isle's Gil Tam, vice president for administration and community affairs, says that whenever possible they contract and support local businesses. Ohana Telcomm/Construction Inc. was incorporated in February 1999, after being approached by Sandwich Isles five years ago to do construction and material management for the project,

which hadn't even come on-line yet. "The Sandwich Isles project was actually one of Ohana's missions or charters," says Randy Funn, president for Ohana. Sandwich Isle's contracts with Ohana range from \$100,000 to \$5 million, and as of February, Ohana had completed seven projects. As a result, Ohana earned 2000 revenues of \$5 million and hired at least 50 employees statewide. "We've hired about six or seven expatriates, over 50 percent of our staff is part-Hawaiian, and we even have three employees that are actually moving onto these Hawaiian Homestead Lands as well," says Funn. Although Sandwich Isles doesn't require contractors to meet ethnic or racial guidelines, a majority of the companies that get contracts do make efforts to employ native and part-Hawaiians. "It's a consistent philosophy," Summit's Johnston says. "Not to the point of reverse discrimination, but just to provide opportunities for our fellow Hawaiians."

Alden Kealoha, owner of Maui-based Kealoha Construction, says that nearly all of his dozen or so employees are either native or part-Hawaiian. Kealoha Construction signed two contracts, valued at \$166,000 and \$138,000 respectively, to construct equipment buildings for Sandwich Isles on Maui this year. Revenues from these contracts will contribute to Kealoha Construction's anticipated \$3 million in annual sales.

All in all, the Sandwich Isles project has resulted in the creation of roughly 500 jobs statewide, the majority of which are temporary construction and contractor positions. But according to Tam, Sandwich Isles' ability to sustain employment remains one of its longer-term goals: "Right now we're sustaining about 100 jobs, and that's before we even launched the network."

HAWAIIANS ELECTRIC

SPREADING THE WEALTH

Cathy S. Cruz

The biggest wads of money won't be found in the pockets of contractors involved in Sandwich Isles Communications Inc.'s \$500 million, fiber-optic network. Instead, the real dollars will be generated from the network's capability to deliver voice, data and video traffic at the speed of light. And if Sandwich Isles meets its timeline, as many as 20,000 Hawaiian Homestead dwellers in six major Hawaiian Islands will have high-speed connections in just five years.

The economic impact of this fiber-optic project is limitless: Cable television for tots, telemedicine conferences for the elderly, and Internet-based classes for teen-agers. Once the network is installed, Sandwich Isles plans to deliver affordable rates and services to its Native Hawaiian beneficiaries—while operating independently from existing telecom providers in the state.

What makes the future network especially lucrative is its open-access agreement that will allow outside companies to piggyback on Sandwich Isle's infrastructure. The concept is at least three years away, but it goes like this: A company wants to expand its coverage on a Neighbor Island, so it leases conduits (pipes that house the fiber-optic, glass strands) from Sandwich Isles and installs its own fiber-optic connection. Financially, it's more practical than digging another trench.

"We're not going to block anybody from using our access," says Harold C. Johnston, sales and marketing director for Sandwich Isles. "We will make that backbone available to anybody who wants to use it. And yes, we will charge for that service. It'll be more cost-effective for them than to build their own."

The open-access agreement will bring Sandwich Isles to the same table as local exchange carriers Verizon Wireless and Oceanic

Communications. Right now, Oceanic provides circuits for Sandwich Isles clients in the Waimanalo area. But that may not be necessary once the proposed network is in place. Says Oceanic's vice president and general manager Ed Murley: "They're good customers, good partners. And by expanding competition to additional markets, more customers will get the price and service that results from having multiple carriers that compete for customer service." It also will garner additional revenue for Sandwich Isles in the next five, 10, even 30 years.

But rewind back to the year 2001. Sandwich Isles officials today say they don't want to talk specifics. They maintain their position as a rural telephone company that services approximately 700 subscribers in the Hawaiian Homelands. Their goal is not to be a telecom giant but to serve the underserved. "We have three priorities right now: build the network; create jobs, and lastly, generate profits, but that's No. 3 out of our priorities," says Gil Tam, Sandwich Isle's vice president for administration and community affairs.

Already some organizations hope to hitchhike on Sandwich Isle's high-speed highway. Take Akimeka LLC, a Web-based company that customizes healthcare solutions for Hawaii and the Pacific Rim. The company is only 5 years old but last year generated approximately \$12 million. Vaughn Vasconcellos, president of Akimeka, projects about \$10 million in revenues this year.

In addition to providing telemedicine services to the military, Akimeka assists patients from as far as western Micronesia. "We want to provide an application in the telemedicine area that's going to ride on their network, to provide Web-based tools for the native Hawaiian healthcare system to utilize," says Vasconcellos. "Our goal is to have native Hawaiians have better healthcare access."

nect places like Kahikinui to the rest of the world, SIC's job is about to get a lot tougher. Beginning later this summer and over the next three to five years, SIC will be working on the next phase of its grand plan, connecting all these communities (and all of Hawaii) to a 1,500-mile state-of-the-art fiber-optic network. Laying the fiber in the ground, which will stretch from rural landscapes like Kahikinui to the urban jungle of Honolulu and beyond, will cost more than \$150 million. Laying down the submarine portions of the network will cost an additional \$70 million.

With 48 fibers, the network's pipes will have at least twice the capacity of any other fiber-optic network in the state. In addition, SIC technicians will have the ability to increase that carrying capacity many times over thanks to recent developments in "multiplying" technology. They will also be dropping five empty conduits in the pipe for good measure. The entire network—the only all-fiber one in the state—will be either underground or underwater during its trek around the state. The cables will be inserted into micro tunnels through the crowded streets of downtown Honolulu, tiny openings as small as five or six inches in diameter that are dug without disturbing the surface. Again, state-of-the-art technology.

According to Hee, the resulting network will benefit Hawaiian homesteaders and nearly all residents of Hawaii in a number of different ways. First, homesteaders will suddenly have access to all that the on-line world has to offer, including cutting-edge communications, distance learning, telemedicine and e-commerce opportunities.

"High-speed Internet access helps fulfill DHHL's goals in its mission: education, health care and economic development," says Gil Tam, the vice president who is in charge of administration and community affairs for SIC.

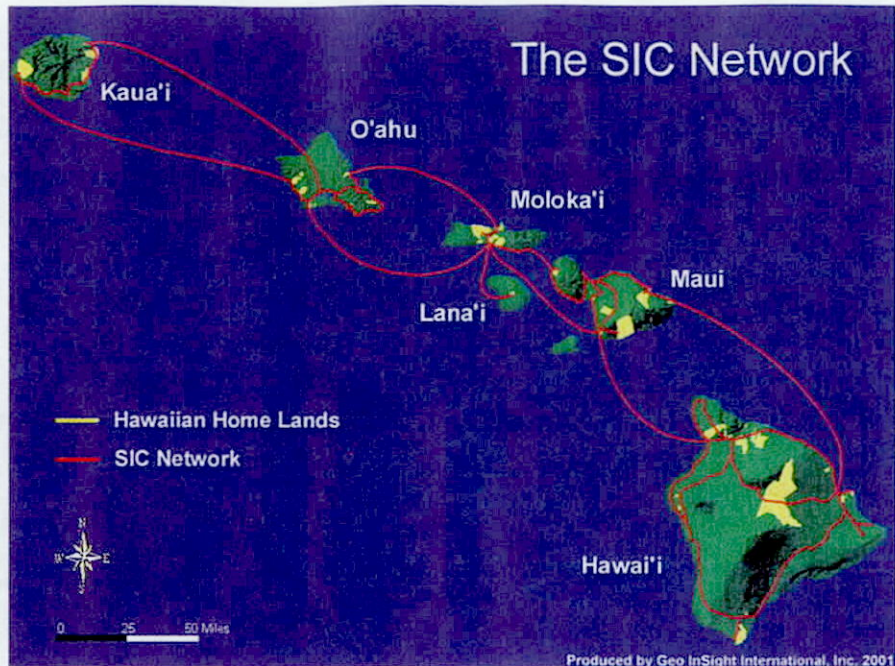
Secondly, SIC will be also wiring DHHL's nonresidential areas where the department maintains income and economic development property all over the state. According to McElroy, DHHL has designated a wide swath of Oahu as a high-technology corridor, stretching from Kalaeloa (formerly Barber's Point) to the Stadium Bowl-O-Drome property in Moiliili. Other parcels along this corridor include the Waipahu drum site near Leeward Community College and the Halawa laundry site, across from Aloha Stadium. The department has just completed a feasibility study to build a biotech center in Kalaeloa and will put

Having been raised on Hawaiian Homelands himself, Vasconcellos witnessed the health-care problems indigenous to native Hawaiians. Telemedicine, he says, will boost the living conditions in the remotest of neighbor Islands. And if plans to ride on Sandwich Isle's future network fall into place, a high-tech hub for Akimeka will have to be built.

Meanwhile, the University of Hawaii at Hilo has met with Sandwich Isles officials once to discuss a possible partnership in distance learning. The school also has upgraded its own infrastructure. Old analog equipment this year was replaced with digital, allowing for 10 interactive channels instead of a two-way system. "We're connected to the Hawaii Interactive Television System, which is home-based at UH-Manoa, and the STAN/DELTA systems, which connects to most of the state hospitals and many Pacific Island nations via the PEACESAT satellite or T-1," says Robert T. Okuda, UH-Hilo's associate director for technology and distance learning. The program offers baccalaureate programs in computer and marine science on Maui, Oahu and Kauai. Approximately 81 students in Hawaii are enrolled.

The program easily could beam into Hawaiian Homestead homes. If proper grants and loans are secured, money won't be an issue, university officials say. A fully loaded computer learning station can cost anywhere between \$1,200 and \$2,000. A videoconferencing system designed to host a group of students in one setting, retails for around \$10,000. But who knows? Computer prices are plunging, and maybe these price tags won't be the same in three to five years.

Meanwhile, while contractors work hard to link Hawaii to this \$500 million, fiber-optic network, Sandwich Isles officials say they won't be swayed by dollars, at least, not just yet. "We don't want to be distracted," Tam says. ■



COCONUT WIRED: Sandwich Isles Communications Inc.'s network connects six Hawaiian Islands, some 1,500 miles in all.

developer proposals for bid for a high-tech center later this year for the Bowl-O-Drome property. McElroy says that he has received serious inquiries about this property from high-profile companies and research institutes because of the cutting-edge connections and proximity to the University of Hawaii at Manoa.

Last, but certainly not least, SIC's vast network will be available to island businesses all throughout the state. (See sidebar on Page 18.) SIC officials try not to speculate about the possible opportunities that additional high-speed broadband access will bring the Islands. They liken themselves to road builders. What travels on the road or what is constructed beside it is anyone's guess.

"For the same reason that wide-body jet travel made Hawaii a market for tourism, for the same reason that tall sailing ships made it possible to export products from Hawaii a century and a half ago, broadband fiber is the pathway that allows Hawaii to participate in the new economy of the future," says Paul Brewbaker, chief economist, Bank of Hawaii.

The impact of 1,500 miles of additional broadband wire may be hard to gauge, but Hee knows for sure that Hawaii's profile in the global high-tech community will be greatly enhanced. "Mainland executives come to a convention here and



listen to all these claims about how much fiber we have coming into the state but that means nothing if they go back to their hotel and can't hook up," says Hee. "I don't know how many hotel rooms in Waikiki have Internet access, and I don't think there is anywhere you can get a T-1 connection. After we put our network in, you'll be able to do that."

According to Hee, isolated Kahikinui and DHHL's efforts to place Hawaiians on land is emblematic of the plight of the entire state in the electronic global village. "You can bypass the Hawaiian homelands and no one will know the difference," says Hee. "And you can bypass Hawaii and no one will ever know the difference. The notion that Hawaii is the hub of communications throughout the Pacific is just that, a notion. All the rhetoric doesn't mean anything if people visit here and aren't able to hook up to the Internet at the same speeds that they can at home." ■

BETWEEN THE LINES

TO MISS KAHELE, WHEREVER YOU ARE

My great grandmother is a mystery to me, literally. I only know her as "Miss Kahele." From what my family can cobble together from a very small and faded collection of documents that we recently obtained (none of which contain her first name), Miss Kahele was married in 1910 on the Big Island. She was 16. Her life would be hard, painful and painfully short. By 27 she was dead, gone without much of a trace. On some of those documents her race is identified as Hawaiian, on others she is a "Japanee." We are almost certain that she was hanai so she could have been either or both or neither. It's a mystery.

I thought about Miss Kahele as I stood on the wind-swept slopes of Haleakala in a vast ahupuaa called Kahikinui. The area is the Department of Hawaiian Home Lands' largest and most remote parcel of land, home to only two families so far. These people have no running water or electricity but just received telephone service last month, thanks to Al Hee and his company, Sandwich Isles Communications Inc. (SIC)

SIC is a rural telecommunications company that has been building infrastructure and providing telephone service to the Hawaiian homelands over the last several years, saving the department millions of dollars. With more than 20,000 residents on 200,000 acres on six Hawaiian Islands, it is quite a job. But later this summer that job gets considerably bigger when SIC starts connecting these Hawaiian homestead communities together via the Islands' first all fiber-optic network. Some 1,500 miles long, the network promises to catapult native Hawaiians and all residents of Hawaii to the very crest of the world's high-tech wave.

When Floyd told our editorial team about this massive project, our wheels started spinning. The business opportunities that this network would introduce seemed limitless. We immediately bumped our original cover story for April. (You can read our story, "Hawaiians Electric," which starts on page 14.)

What an important business story. But as I stood under Kahikinui's hale and listened to Hee, a passionate but world-wise man, talk about his dream

for his company and for all of Hawaii, all I could think about was my lost great grandmother.

"You can bypass the Hawaiian homelands and no one will know the difference," said Hee. "And you can bypass Hawaii and no one will ever know the difference. It is our job to make sure that Hawaiian homelands are important to Hawaii and Hawaii is important to the world."

Yes, and maybe someday soon people like Miss Kahele won't live lives that are tragic and short and they won't leave us without a trace. ■



A handwritten signature in black ink, which appears to read "David K. Choo".

DAVID K. CHOO
MANAGING EDITOR