

The Day of the Flying Fish

The birth of modern sushi

Wayne MacAlpine had been working as Japan Airlines's lone cargo man in Canada for only a few months when the Teletype machine in his Toronto office began stammering with a surprising solution to the one-way traffic problem. Japan's two-decade-old national airline was thriving, and when its planes landed on foreign runways, cameras, optical lenses, textiles, and small electronics tumbled out. As the aircraft geared up for their return to Tokyo, however, those cargo holds were typically empty. In April 1971, the airline hired MacAlpine, a thirty-two-year-old Canadian who had worked previously for United Airlines, and employees like him around the world to rustle up freight business on outbound flights. At the time, JAL did not even have flights out of Toronto, but MacAlpine's assignment was to discover untapped exporters in eastern Canada whose products could be transferred onto Tokyo-bound JAL flights from Vancouver and Los Angeles. His target list included products such as business equipment, chemicals, aircraft parts—nonperishable goods that the industry calls “hard cargo”—that would find willing buyers in booming Japan.

The Teletype arrived in late summer from JAL's headquarters in Tokyo. It was written by Akira Okazaki, whom MacAlpine had never met but knew was the man responsible for uncovering new markets for cargo worldwide. The message had a simple request:

What could MacAlpine find out about tuna-fishing along Canada's eastern coast? The inquiry confused MacAlpine, who had entered the air-freight business thinking that the one-way problem would be sorted out in a factory, not on a pier. MacAlpine put his other work aside and began making phone calls to local governments in the maritime province. “I was a young guy and here was a request from head office to get information on something going on in my region,” he recalled.

A few days later, MacAlpine drafted a Teletype to Okazaki. He reported that anglers from around the world came each fall to the North Atlantic to pursue the local bluefin tuna. Sports fishermen were drawn to the small oceanfront town of North Lake, in Prince Edward Island, where the economic activity the annual tuna hunt generated was a source of great pride for the local government. MacAlpine included an additional piece of information as something of an afterthought. “What they did after they caught them is they had their picture taken with the fish and dug a hole with a small bulldozer and buried them,” MacAlpine reported back.

It was long after MacAlpine's response arrived in Tokyo that Akira Okazaki decided to make his way to Canada.



Akira Okazaki was born in prewar Japan and spent his preteen years in Shanghai with a father sent there to represent the Bank of Japan during that country's imperial occupation of northern China. Kaheita Okazaki had been trained as a lawyer, but he found utopian potential in business; high-school friendships with Chinese students in Japan convinced him that commercial ties between nations could “create peace within Asia.” Once, after learning that his son had sprayed a Chinese boy with a water pistol, Kaheita dragged young Akira across Shanghai so he could apologize—in the formal Japanese style of kneeling on the ground—to his damp victim.

In his twenties, Akira Okazaki went to work for Japan Airlines, a company born amid Japan's postwar recovery and initially so modest that in its first offices, in Ginza, executives sat on tatami mats. But its international expansion was swift: Two

years later, JAL opened offices in New York and Honolulu and, in 1954, inaugurated its first international flights, to San Francisco. The following decade, JAL would add service to Hong Kong, Singapore, and Frankfurt, among other cities, a sort of atlas of emerging-business opportunities for Japanese industry. In 1966, JAL started regular flights from Tokyo to New York, via Honolulu and San Francisco.

Okazaki was assigned to a sales office in Sapporo, on the rural northern island of Hokkaido. He quickly tired, however, of the abuse he received from passengers over the airline's high-priced domestic fares and asked to be moved to the cargo division. Freight would come to be a vital part of the airline industry—in some situations, the difference between an unprofitable route and a moneymaking one—and carriers have since committed many resources to winning business and loyal customers. But at the time, cargo represented only about 3 percent of JAL's business, due in large part to the one-way problem. For the national airline of a country developing an economy centered around high-value industry, the predicament was increasingly dire. Japan's unique economic model was contingent on importing raw materials, usually the type of bulky items that traveled by slow-moving container ship and were exported in finished form by air, which cost five times more than moving them by sea. When Okazaki requested a transfer to the cargo unit, his colleagues questioned a move they saw as a willful demotion to a backwater department. His maneuver, however, was quickly rewarded. An early assignment sent Okazaki to the Imperial Hotel, in Tokyo, where he was to help Marilyn Monroe assemble a packing list for the many gifts she had received on a Japanese trip. She came to the door in her underwear.

Okazaki was charged with developing new sources of cargo business for JAL, which was lagging behind Pan Am, the world's busiest carrier, and the increasingly dominant Flying Tiger Line, a freight-only airline founded immediately after the war by veterans of Claire Chennault's American volunteer air force (which had collaborated with Chinese nationalists to fight the Japanese across Asia). Typically cargo deals—whether by land, by sea, or by air—get struck because a seller has merchandise he

wants to bring to market somewhere, and looks for a way to move it most efficiently. However, in a globalizing economy, Okazaki was coming to realize, the existence of networks would determine what could be traded. Okazaki had trade infrastructure in hand and a consumer in mind, but no wares to sell. He had to find products.

From Hokkaido, he had discovered lily of the valley flowers and hairy crabs—although it was impossible to find a Tokyo retailer who wanted to stock the frightful crustaceans. When stationed in Hong Kong, Okazaki was introduced by a customs official to the United States' federal trade statistics, an annual phonebook-size accounting of all the international traffic moving in and out of the country. He mined its data tables voraciously for goods that could be shipped to Japan, and came to look closely at food products. Most did not lend themselves as readily to transport by air: Fruits and vegetables are typically a low-margin product with enough shelf life to survive an ocean voyage in a reefer boat. Many countries have restrictive laws about the importation of meat—for both health reasons and the desire to protect domestic agriculture—that do not make it always a good candidate for air freight, either. But when it came to seafood, Okazaki determined, the value and sensitivity to decay perfectly matched the economics of air freight.

Okazaki and his colleagues knew nothing about fish. "We did not know why canned tuna was white, and raw tuna meat was red," he recalled. But there was one place every Tokyoite would instinctively go to learn more. So one morning at 5:00, Okazaki headed to the Tsukiji Market in downtown Tokyo for an education. He knew vaguely what he was looking for: high-value items, whose prices could justify air-cargo costs, for which there seemed to be a competitive demand. As he wandered through the maze of wholesalers' stalls, Okazaki made note of salmon roe, sea bream, sea urchin, and ark shells, but it was the biggest beast there—whose silvery, cylindrical body did not look unlike that of an unpainted stainless-steel jet—that most piqued his attention.

That fish was a tuna, whose oily red meat had once been dismissed by Japanese diners disgusted by its fat content. But Japanese tastes were changing, not least because sushi, a century-

old picnic food sold by street vendors and on delivery bikes, had been pushed inside. In the postwar years, sushi became a luxury food preferred by Japan's burgeoning corporate elite. Just as Tokyo became the center of the country's expanding commercial empire, the city's sushi tastes shunted aside regional preferences. The preparation of the capital's *Edo-mae nigiri*—in which pieces of fish are pressed into rice and eaten on the spot, instead of waiting for the acidic rice to pickle the flesh—put a new premium on high-quality fresh ingredients. Whether among the businessmen and politicians who ate regularly at sushi bars or the ordinary Japanese who could afford to go only on birthdays, it seemed by the late 1960s that the one fish everyone wanted was tuna.

But market supply could not keep up with the growing demand. The tuna Okazaki saw at Tsukiji had found their way there either from local Japanese boats that moved their fresh catch into the market, or from the nation's expanding fleet of long-distance trawlers who brought back voluminous quantities in frozen form. Given the rising prices it fetched at market, and its exceptional size, the tuna was the perfect candidate for his new cargo program, Okazaki decided. "The gross tonnage of tuna is considerably larger, therefore, it might compensate to the airlines the huge expense for the project on the tuna development," he wrote at the time in an internal JAL report.

Okazaki set out to identify an untapped supply of tuna. He reached out to JAL branch offices, other airlines, and national fishing authorities in Europe, Canada, and the United States. Most of the contacts turned up no promising leads. "One reason for the negative replies, we later discovered, is that the bluefin tuna is not considered an edible fish. Thus, most people do not look at the bluefin as a possible item for export to Japan," Okazaki recalled. More specific demurrals—about how the local fishery found tuna to be "harmful fish" because they competed for available stocks of herring and mackerel, or how sport fishermen would just throw them out—suggested to Okazaki that the business of bringing the fish to Japan might be even more lucrative than he had initially anticipated. From his office in Tokyo, Okazaki was developing a more sophisticated

understanding of the world's tuna landscape than many of the men hunting for them in long-distance boats, and in ways not just economic. "Prior to our study, we had thought the bluefin was found only in the middle of the ocean. But to our surprise, tuna is found swimming near the coastline, like the grey mullets and mackerel," he recalled. "We heard many times that when you stand at the cliffs on the ocean in Canada, you will be quite amazed to see fish swimming in the near distance."

After receiving MacAlpine's promising report on Prince Edward Island, Okazaki realized there was still work to do at home. He enlisted two partners to work on what those at JAL had begun referring to as Okazaki's "tuna project." Soiji Kobayashi was a Tsukiji veteran from the auction house Tohto Suisan who could offer expertise on how to handle tuna according to market demands. Yoki Kumahara, an energetic young executive of the trading company Toshoku, would bring commercial know-how about international transactions. With his new team, Okazaki visited two Japanese ports and even spent a week on a boat, an experience that left Kobayashi and Kumahara violently sick. For his part, Okazaki came away determined that JAL would have two considerable obstacles to transporting Canadian tuna to Tokyo: He would have to discover a substitute for the chipped ice used to insulate fish at sea (it was heavy and prohibitively expensive to ship by air) and to find a way to ensure that fishermen used to recklessly shoveling herring and cod on dirty harbor floors would handle the tuna according to Tsukiji standards. "Ten thousand miles is an extremely long distance to transport such delicate fish successfully in a limited amount of time," Okazaki observed.

To replace the ice, Okazaki set up experiments to test urethane, a crystalline compound sprayed in foam form and allowed to shrink around an object. For the first experiment, Okazaki bought an inexpensive yellowtail—he could not justify spending even \$500 on a cheap tuna for a test "with absolutely no known outcome"—and carried it on domestic JAL flights for as many as four days. When they opened the package, they were struck first by the stench; the sight of a decayed fish quickly followed. The urethane shell was too thick, and generated heat when foamed in such quantity. Okazaki, with laboratory

discipline, tested the effects felt by different parts of the fish at select temperatures. Based on those results, he designed another experiment, this time on a yellowfin tuna caught off the Japanese coast four days earlier. The fish was gutted, and its stomach cavity packed with fifteen pounds of ice. The tail was adorned with ice chunks and wrapped in newspaper. The whole fish was blanketed in plastic wrap and then put into a vinyl bag, which was sprayed with a thin layer of urethane. It, too, spent four days traveling JAL's domestic routes, with the tuna's body temperature tested throughout. The experiment was far from flawless—the thermometer broke and the head was damaged en route—but the meat survived in good shape. Okazaki was convinced that the ice problem had been largely solved. "We questioned whether it was really impossible to bring the Canadian tuna to the Tokyo Central Fish Market four days after it was caught," he wrote. "But we were sure we wanted to try."



In October 1971, two Japanese businessmen wearing blue pinstriped suits and carrying attaché cases stood on Canada's eastern shore. Lashed by a cold northern wind, they admired the fins of tuna puncturing the Atlantic's surface. Okazaki and Kumahara, along with MacAlpine, trekked along the scabrous eastern coast of Prince Edward Island, meeting fishermen and dealers. Most looked at the Japanese men and their odd proposal with great skepticism. "We've been making a living by catching codfish for over a hundred years. We're not interested in other fish. You're trying to tell me that tuna would sell in Japan? Who'd eat such a fish?" one fisherman told Okazaki. Bluefin, it turned out, were a long-standing nuisance to the cod fishermen, who often found their nets ruined by the tuna enmeshed in them. The cynicism of local fishermen was offset only by enthusiasm from government agencies deputized with promoting local fisheries and foreign exports.

One fish dealer, however, welcomed the outsiders. Okazaki's team met Albert Griffin at the processing plant he owned on the cove next door to the North Lake Tuna Club, where sportsfishing captains kept their charter boats. At the end of the day, Griffin

invited the group into his home in Souris, a nearby rural town. As they sat at his kitchen table drinking beer, it became quickly clear that Griffin did not have the profile of an import-export pioneer: he had no formal education, was dealing with a drinking problem, and was fixated on the card game cribbage. Despite Griffin's seeming inability to tell one Japanese man from the other, the guests gamely joined Griffin for beers, then dinner, then rounds of cribbage. They repeated the schedule for several days. Even though MacAlpine had to translate Griffin's mumbled speech, Okazaki realized he had discovered a perfect collaborator. Griffin was receptive to the highly specific handling demands other fishermen dismissed: the need to kill a fish immediately to bring down its body temperature, to quickly cool it in an ice tank, and to pack it solidly in a box for air transit. "Griffin was agreeable to follow the dimensions to a T," MacAlpine said. "It became really evident to me early on that this was a guy who was astute enough to listen to what the buyer wanted."

Even though he was happy to have identified a local partner, Okazaki decided it was too late in the season to establish the necessary infrastructure to ship tuna that year. The group returned to Tokyo, where Okazaki prepared two reports he could distribute to Canadian fishermen. One booklet, filled with charts and marketing data, would be used to persuade fishermen of the commercial potential in selling to Japan. Another contained instructions on how to appropriately treat bluefin. Meanwhile, in Canada, MacAlpine journeyed repeatedly from his office in Toronto to North Lake, where Griffin would pick him up at the airport in a big brown Chrysler covered in red dust and quickly toss the keys to his visitor. Griffin began swigging from a small bottle as the two headed off to outfit Griffin's plant with the brine tanks and icemakers necessary for tuna.

At the beginning of the 1972 summer season, Okazaki traveled to Prince Edward Island to make his first attempt to get the product back to Tokyo on schedule. He arranged in advance for Griffin to catch a tuna and have it ready for shipment. Griffin enlisted the Dingwell brothers, a pair of local undertakers, to build a box, and retained a friend who owned a trucking company to haul it to New York for \$1,000. But upon his arrival, Okazaki

learned that the 704-pound fish had already been out of the water for three days, and had spent them idling under a pile of ice. The coffin and truck were in place, but confusion over whether the tuna had to be tested for mercury delayed the project for an additional eight days. At last, Okazaki got in the truck with the giant bluefin and set out on the road for a thirty-hour drive, including a stop at the U.S. border for customs, to the JAL cargo terminal at John F. Kennedy International Airport. There, it took almost two hours and many hands to pack the fish, and then it set off for the fourteen-hour trip to Japan on a DC-8.

Approximately twenty-eight hours after it left New York, the fish arrived at Tokyo's Haneda Airport. The temperatures largely held according to Okazaki's expectations: Most of the ice remained unmelted. But two weeks out of the water, the meat was in dismal condition. The first fresh Atlantic bluefin sold at Tsukiji for a lackluster eighty cents a pound, but market regulars marveled at the logistical feat.

The major problem with the fish was the condition known as "meat burn": prolonged exposure to oxygen en route gradually blanched the tuna's red color. Okazaki acquired new batches of yellowfin in Tokyo for a set of experiments in which the tuna were placed in bags sealed with various combinations of gases. "Someone had heard that the flesh of people who had committed suicide by natural gas was very pretty. We wondered why the gas caused such a phenomena to occur," Okazaki said. Scientists told him that it could be attributed to the mixture of carbon monoxide and hemoglobin, and that the same process should take place in the tuna's bloodstream if it were sealed with only carbon monoxide. After days, the control samples, sealed with air and nitrogen, had turned black. The carbon monoxide-packed tuna, however, had changed "from vermillion to crimson, but nothing more," Okazaki reported. But when he opened the bag, it became clear that the preservation was only flesh-deep: A foul stench filled the room, the bright red tuna nonetheless rotten. (Upon cutting it, Okazaki also discovered that more than an inch and a half below the surface, the carbon monoxide-treated fish had changed colors, too.)

There would be no way to stop a whole tuna from being

discolored with time; the best way to maintain a fish's quality was to handle and pack it properly and move it speedily at a low temperature to Japan. None of the existing systems were right for the job, though. Packing it with chunked ice added a lot of unnecessary weight, jelly ice did not cool the fish properly, and the existing refrigerated containers being used with chemical products, and frozen meat and fish, did not work up to expectations. The only real solution, Okazaki concluded, would be for JAL to design and build its own refrigerated container ("ref-con," in airline lingo) that would fit in the lower cargo compartment of the DC-8. "Random fishing all around the Japanese Archipelago, the exhausted marine resources, due to public pollution, and the need for fish, the most important protein supplier for the Japanese, all these factors predicated the need for growth in marine commodities and aero-transportation was one way in which this need could be fulfilled," Okazaki wrote. "Our only alternative was to take the risk. After so much time, energy and money already spent, it would be foolish to stop here, so we decided to build the container."



On August 14, 1972, at 5:15 a.m., over a year after his first Teletype arrived in Toronto, Okazaki stood in the auction room at Tsukiji, presiding over five Canadian bluefin about to be sold by the Tohto Suisan auction house, known as Tohsui. "The pre-auction inspection of these five fish was strangely serious on this day," he observed. Gawkers were in awe of the sight before them. "Take a look at the size of these tuna, we don't see them this fresh at this size around here very often," one said in earshot of Okazaki. Tohsui's director drew buyers' attention to the fact that "only four days ago they were caught in the Atlantic waters near Canada. Take a good look at them and bid a good price, okay?"

Okazaki observed the auction, whose rituals and vernacular had become familiar to him through his recurring fact-finding missions to the market over the previous year. But when he heard the auctioneer bellow, "*In-ni!*" Okazaki and his colleagues panicked. Literally "One-two!" in bidding slang, the auctioneer's call could mean 120 yen per kilo (about forty cents), 1,200 yen

(about four dollars), or 12,000 yen (about \$40); market regulars usually knew by context. "What immediately came to our mind was 120 yen per kilogram. We were so pessimistic after so many long, hard hours of work. The cost alone of shipping was 800 yen per kilogram. 120 yen wouldn't even pay for freight cost. Our investment alone had been \$40,000. I felt the world was coming to an end. We could never make up the loss of such a low price," Okazaki recalled.

Okazaki's glum countenance drew the attention of Tohsui's director, who turned and asked, "What's wrong? Is it too low?"

"What do you mean, too low? We've never sold a fish for less than 120 yen," Okazaki replied.

"It sold for 1,200 yen, not 120 yen, you fool!" the director said.

This became known in market lore as "the day of the flying fish." Okazaki was far from done in his efforts to generate new seafood cargo business for JAL, but his tuna project had proved successful. In the crudest sense, sushi was nearly two millennia old, but it was that morning at Tsukiji that the current experience of eating it was born. Sushi had started as a form of preservation, but it was becoming precisely the opposite: a way of using the infrastructure of modernity to chaperone a delicate dish around the world. The result was a previously inconceivable placelessness, at least for those who could afford to sit in a Tokyo restaurant and eat Canadian seafood as though they were upon a cliff along the Atlantic coast. Okazaki's shrewdness had transformed a cuisine of exigency into one of privilege. The hunt for freshness would not long remain the bailiwick of cargo men alone. Over the next generation, buyers, sellers, brokers, dealers, auctioneers, distributors, industrialists, chefs, and diners would meet along their common quest. The era of the flying fish demanded a business mentality prepared for the brand-new worldwide struggle of value against time.