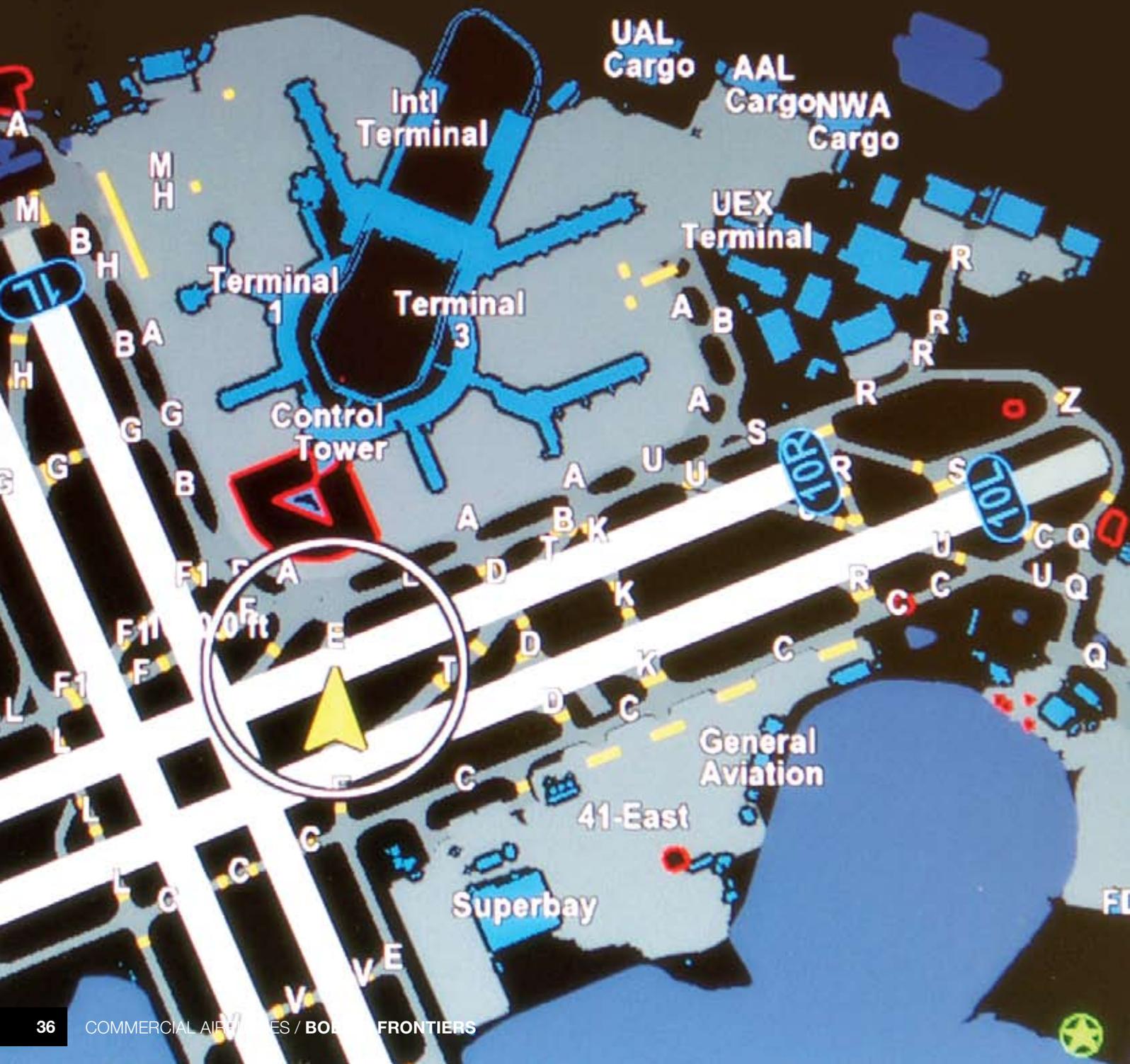
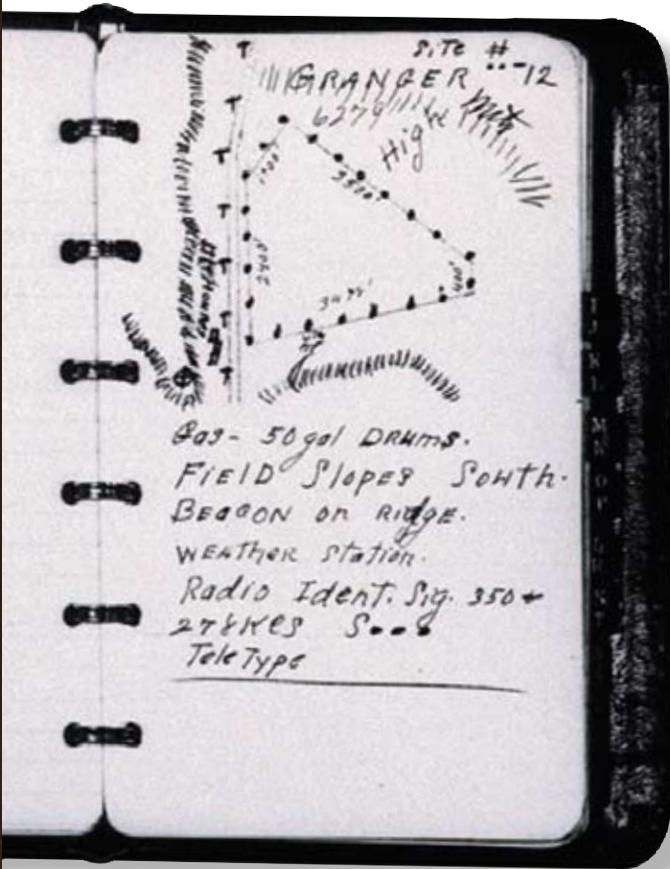


Charting



the course



From hand-drawn air navigation maps to the Electronic Flight Bag, Boeing subsidiary Jeppesen charts the future—on land, air and sea. **By Dawsalee Griffin**

PHOTOS: (LEFT) Highly accurate digital navigation data support applications such as this Jeppesen Airport Moving Map for taxiing flight crew.

(ABOVE AND RIGHT) Company founder Elrey Jeppesen started sketching airport maps to fly more safely. JEPPESSEN

In the basement workshop of his Salt Lake City home, airmail pilot Capt. Elrey Jeppesen, concerned about the safety of pilots because they didn't have proper navigation maps, produced the first instrument flying charts, depicting routes using new radio aids and flight patterns. It was 1934 and Jeppesen was flying for United Airlines, after previously barnstorming and flying for Boeing Air Transport.

Seventy-five years later, the company that Jeppesen founded and bears his name not only provides charts and navigation information but also offers pilot training, crew scheduling and trip planning for the aviation industry. And it is expanding into the marine and rail industries.

"Today, millions of commercial and private flights, thousands of ocean voyages and tens of millions of boating trips rely on digital navigation from Jeppesen," said Greg Bowlin, senior vice president and chief strategy officer of Jeppesen, a Boeing subsidiary. "Every day, more than a million people use Internet-based applications supported by Jeppesen technology to plan their rail travels, and some of the world's largest railroads use Jeppesen to plan their daily work schedules."

In September, Jeppesen introduced its new C-MAP 4D application for boaters, which features high-resolution 3-D coastal imagery overlaid on continuously updated vector data. The company also has added online training for sport and private pilot licenses.



“In 1973, we were updating 100 to 150 charts a week by hand. Today the department revises 1,000 to 1,500 charts a week using computer graphics and a variety of other electronic production tools.”

– Ted Thompson, corporate technical leader for charts and display standards

Both are complete courses and include multimedia lessons and preparation for FAA knowledge exams.

From the beginning, Jeppesen has been at the forefront of navigation in the aviation industry. In the early days of commercial flight, pilots used landmarks and roads to navigate visually. “Capt. Jepp,” as he was known, was concerned about safety and began documenting the routes he flew as an airmail pilot. His “little black book” included airport sketches, runway lengths and other information about the airports and surrounding terrain. Once other pilots learned about his notes and sketches, they began asking for copies.

The demand for Jepp’s navigation charts continued to grow, and in 1934 he

founded Jeppesen & Co. to sell the charts. By this time, aviation navigation technology had taken its first leap forward: Pilots began to navigate using ground-based, low-frequency radio, and Jeppesen provided the first instrument-based navigation charts. The company moved to Denver in 1941, where it is still based. Today, Jeppesen has 42 offices in 22 countries.

Capt. Jepp worked with what was then the Civil Aeronautics Administration (now the Federal Aviation Administration), to introduce in 1947 the first standard instrument approach procedures and to establish the National Flight Data Center. Jeppesen later set up an office in Frankfurt, Germany, to fulfill a contract with the U.S. Army. Today, that German

operation is strategically located to serve Europe, Asia, Africa and the Asia Pacific area.

Jeppesen both drives and reacts to technology changes in the aviation industry, according to Ted Thompson, corporate technical leader for chart and display standards. When Thompson joined Jeppesen as a draftsman in 1973, charts were updated and maintained by hand using strip film, film transparencies, and pen and ink overlays. In the early 1980s, the company entered a new frontier by making the charts digitally. Not only did the change improve accuracy and make maintenance easier, but Jeppesen laid the foundation for new products such as JeppView electronic charts and the



Electronic Flight Bag, which replaces heavy, hand-carried bags containing paper charts and other printed materials that pilots use.

“The conversion also made it easier to manage the increase in charts and aeronautical information around the world,” Thompson explained. That helped Jeppesen keep up with customer demand for new charts and new services.

“When I started in 1973, we were updating 100 to 150 charts a week by hand,” Thompson said. “Today, the department revises 1,000 to 1,500 charts a week using computer graphics and a variety of other electronic production tools.”

Jeppesen also has made use of new technology to improve how the charts are printed and distributed. Even as demand grows for electronic charts and integrated computerized navigation systems, the need for paper charts and manuals remains. Jeppesen systematically replaces old offset printing presses with new print-on-demand printers to reduce the number of pages to be hand-collated.

Using the offset printing method resulted in 87,000 pigeonholes, or small cubbyholes used to store printed charts and pages, said Ken Navarra, manager of Imaging and Printing Services. As a result, much of the collating of the Jeppesen Airway Manual was done by hand. Now, the new equipment reduces the number of hand-collated

pages to fewer than 15,000 and greatly speeds production.

“Some things, however, haven’t changed since the company’s founding,” said Mark Van Tine, Jeppesen president and CEO. “Jeppesen’s leadership is committed to continuing the tradition of providing high-quality, innovative products and services while retaining the focus on employees.”

Bowlin, chief strategy officer of Jeppesen, said the company already is planning for the next 75 years. “While we have certainly come a long way in how we support travelers around the globe, we look forward to the next 75 years to continue the innovation of products and services that transform the way the world moves in the air, on the water and over land.” ■

dawsalee.griffin@boeing.com

PHOTOS: (LEFT) The Electronic Flight Bag brings computer information management to the flight deck. ED TURNER/BOEING

(ABOVE) Digital technology is obsoleting the need to print and periodically update thousands of aeronautical charts. JEPPESEN

- 1934** Capt. Elrey Jeppesen launches business in the basement of his Salt Lake City home
- 1941** Company moves to Denver
- 1947** Jeppesen works with the Civil Aeronautics Administration (now the FAA) to establish standard instrument approach procedures and the National Flight Data Center
- 1957** Jeppesen opens a Frankfurt office to better serve U.S. Army
- 1974** Jeppesen and Sanderson Films, a pilot-training company, merge to form Jeppesen Sanderson
- 1989** Jeppesen acquires trip-planning firm Lockheed DataPlan
- 2000** Jeppesen acquires Nobeltec, provider of marine navigation services
- 2000** Jeppesen becomes Boeing subsidiary
- 2002** Jeppesen introduces Electronic Flight Bag
- 2005** Jeppesen launches marine division
- 2006** Jeppesen acquires Carmen Systems, provider of crew rostering services
- 2007** Jeppesen acquires C-Map, provider of leisure and commercial marine charting services