

Bookeye® in Polar Exploration

Explore by E-Mail

Ny-Ålesund on Spitzbergen is the most northerly human settlement in the world. The Koldewey station, amid the eternal ice and the polar bears, is used by up to 80 scientists per year to research the atmosphere. When they need literature for their work, they turn to a library in Bremerhaven.

The corridor is long. Shelf after shelf extends to right and left, only movable by crank-handles. About 115000 books and periodical volumes are stored here, some over a hundred years old. Marcel Brannemann looks after them.

We are in the Alfred-Wegener-Institute (AWI), the center of German polar and maritime research. The institute has existed for 20 years, and its staff contribute to our understanding of the relationships between ocean, ice and atmosphere, especially in the polar regions. The Arctic and Antarctic have a decisive influence on the global climate, therefore, research in these areas is especially important for the prediction of possible environmental changes. Alfred Wegener (1880 - 1930), after whom the institute is named, formulated the hypothesis of continental drift.

The inter-disciplinary research institute runs the Koldewey station in the Arctic and the Neumayer station in the Antarctic. The latter is occupied in the summer months by 30 to 40 scientists. Nine of them also spend the winter there. A radio station provides a permanent transfer of scientific data to Bremerhaven at 64kBit/s via satellite.

The ice-breaker "Polarstern" (Pole Star), currently the best equipped research vessel in the world, is also in the service of the Alfred-Wegener-Institute. Since 1982 she has been on 32 expeditions in the Arctic and Antarctic. Sometimes, the scientists need literature from the AWI library for their work. But how do you post the photocopy of an article to the "Polarstern" when she is cruising in the Atlantic?

Since the beginning of this year, the AWI has been using a new method of dispatch. The books with the required articles are sought out, the pages scanned, converted to PDF format and sent by e-mail. Marcel Brannemann is

enthusiastic: "This enables us to supply the remote stations better." He points to the Bookeye overhead scanner. This machine has been in operation in Bremerhaven since the beginning of the year. Instead of copying, putting in an envelope, writing the address, taking it to the post office, the dispatch now occurs in one operation.

The scanner, made by ImageWare Components GmbH in Bonn, is especially well suited for bound, thick books. Brannemann shows us the library and some of his treasures. His brown eyes light up at the sight of the century old books.



The qualified geologist only became a librarian by chance: "my degree did not exactly give me the best prospects for employment." After completing his degree, he looked for an alternative. "Then, I had no idea how or where to become a librarian."

With some detours, he landed up at the university library of the Free University of Berlin and looked into the everyday life there. "The book is still the primary medium for the transfer of knowledge. And books have always interested me." Brannemann chose to specialize in scientific libraries and took his first

job as IT and area head at the Württemberg Library in Stuttgart in 1986. He has been head of the AWI library since August 1999. Carefully, he puts his precious books in the fireproof safe and heads for the offices. Here it is airy and light. Verena Graßmann is sitting at the Bookeye and scanning an article for the Helgoland station, which has to be sent to the island as quickly as possible. She is one of the scientific assistants who work in the library. "Without the help of students, we would not be able to offer the transmission of literature", Marcel Brannemann emphasizes.

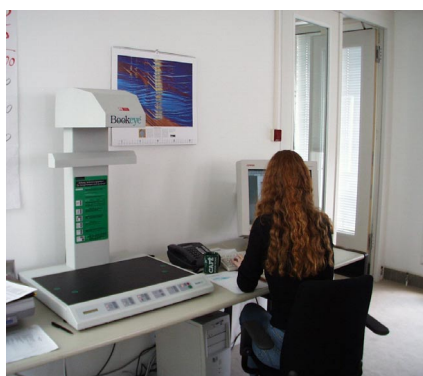
And how does that work exactly? Verena Graßmann carefully smooths out the book and aligns it. She rapidly presses two buttons on the machine, the lamp goes on and the page appears on the monitor. Then comes the next page.

"I can do some orders in two minutes, if the paper is good", says Verena Graßmann. Glossy paper takes more time, as several attempts are necessary. Small print under 6 point and photos are also critical. A small margin also causes problems. This occurs when periodicals are bound together in annual volumes. To get a good scan, she must move the book around on the scanner.

The automatic center binding correction in the software calculates the correction for the binding. "This improves the quality a lot", enthuses Marcel Brannemann. With earlier copiers the text was distorted by the curve of the paper at the center of the original. Another advantage is the reduced wear and tear on the books, as they don't need to be pressed face-down on the glass. For extra thick books, ImageWare has a special book cradle.

The AWI belongs to the Helmholtz Society of German Research Centers, in which various research institutes are represented. The member libraries and

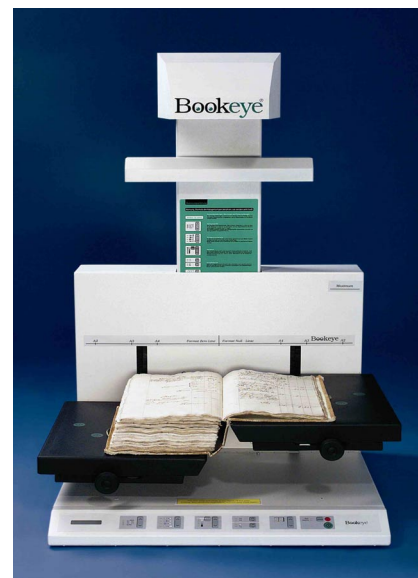
the maritime institutes at home and abroad can access the AWI library, soon via an online catalog. The institute cooperates with ten universities in teaching and research. About 40 requests for articles come in per day, and the trend is rising. Most come from the branches of the Biological Institute of Helgoland and Sylt, which has belonged to the AWI for two years. Other requests come from the research center in Potsdam. The articles can contain text, tables, graphics and photos. Verena Graßmann sets the appropriate resolution for each type. At the moment she scans photos on an HP flatbed scanner, as this processes gray levels. The picture files are stored as separate TIFF formats in the network. Verena Graßmann links them in to the complete file in the correct page order and saves the complete article in PDF format. With the planned extension of the software she will soon be able to select both scanners from the main menu, and all the scanned pages will be in the document in the right order straightaway.



With the BCS-2 software, the Bookeye can be integrated into a PC network under all Windows platforms. The originals can be up to A2 format, which is important for the oversized books of the AWI library. They can be fitted to a predefined format, DIN A4 being particularly important, as the pages can then be printed on normal printers. Marcel Brannemann favors the PDF format: "In our branches we use all sorts of different operating systems. All users can read the PDF format." After dispatch, the files are deleted. Why? Could a digital library not be built up as a by-product? "It would be possible", he explains, "if there were appropriate licensing agreements with

the publishers." But a digital archive is not cost-effective. "An article is not requested more than once or twice." Publishers are already starting to offer reference works only in electronic form. But these are too expensive at around DM 1000 (\$450) for the annual subscription. The AWI has 211 scientific periodicals alone. With about 500 other journals, the library has exchange agreements with its own magazine "Polar Research Reports". In this way, even Russian periodicals get to Bremerhaven. The more recent issues of periodicals are often available online in the Internet as well. The copyright laws do not apply to older books. The library head can archive these digitally, for example a book with the observations of the Russian polar station at the mouth of the River Lena. This originates from the time between 1882 and 1884. He leafs through the virtual book with the Acrobat Reader. "That was my biggest project up to now," he says. The 378 pages of text and illustrations take up 36 megabytes of storage. The many tables and the large format were tricky. Marcel Brannemann did not take the selection of the appropriate scanner lightly. An overhead scanner from Minolta was also in the running. "The library world is small," he says. He phoned a few colleagues last year and asked them about their experience. "That was important information for me up front, but the demonstration was decisive." This took place in October 1999. He tested the machine with a few colleagues, and had prepared a few difficult cases. A volume of the magazine "Science" with an 8cm thick backbone and very small margin, a large format and some photos. The library head summarizes for Info 21: "both representatives knew their machines very well. And the scanners were comparable in quality. But we liked the operation of the Bookeye better." For him and his staff the deciding factor was that the buttons were directly on the machine. According to Brannemann, the competing product is mainly operated with the mouse. Another advantage was the automatic format recognition of the Bookeye. "We work with so many different book formats – the scanner must recognize these."

In the middle of July the AWI set up a satellite link at the Expo to the Neumayer station in the Antarctic. A large screen showed the researchers in the eternal ice. The visitors asked a lot of questions about their work and the conditions in the station. *cl*



Technical Data of Bookeye®

"Bookeye is designed with the philosophy of a copier – and this is operated with buttons on the machine", says ImageWare. The scanner has the following features:

- Digitizing originals up to DIN A2 format and up to 20cm book thickness.
- Bitonal gray-level scanner: Color depth for PC image of 16 or 256 gray levels, color depth for scanner image of 1024 gray levels.
- Software BCS-2: Bookeye Capturing System for electronic document delivery and web publishing.
- Scan and mail interface for: Microsoft Outlook/Exchange, Lotus Notes and Netscape Communicator.
- Integrated interfaces for archiving and delivery systems such as Jason, Subito, Easy, Xerox Documentum, ACS Hyparchive.
- Developed and manufactured in Germany

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