TO IMPROVE AND EXPAND SERVICES PROVIDED

What began as a most simple—even elegant—scheme for preserving the records of Jersey parentage has evolved over 130 years into a vast and complex system of data collection, processing and dissemination requiring state-of-the-art technology.

The design of "a trustworthy Herd Book that shall be accepted as a final authority in all questions of Pedigree," recalled Thomas J. Hand in his condensed history (circa 1896), was due to the first Secretary, Col. George E. Waring, Jr.

"It flashed upon him as we were lying on the grass during one of our visits to Mr. (Sam) Sharpless. It was entirely novel, none, so far as I know, bearing any resemblance to it, having ever been devised."

In a single row, stretching across the Herd Register's open pages, Waring recorded nine columns of data about each animal: its name; color and distinguishing marks; by whom bred or imported; when dropped or imported; from what place and in what vessel; present (or last) owner; sire; dam; and in the first column, its Herd Register number.

Even so basic a recording scheme was not left untouched for long.

"In the arrangement of the page, improvements have been made from time to time, such as enlarging the column for description by abolishing that reserved for importations, which were relegated to footnotes with reference figures. The last change, which puts sires and dams together and does away with 'owners,' gives a column of such width that in two lines the most astounding freak of Harlequin markings can be minutely described. As the ownership of many animals changes between the date of registration and that of the publication of a volume, one wonders now that the owners' column was not long since abandoned.

"The page is now perfect."

Hand recounts what must be the only time in 130 years that Jersey breeders chose to reduce the amount of information they wanted from The American Jersey Cattle Club. At all other points since 1868, their appetite for data has been insatiable. And the sheer mechanics of collecting, compiling and providing that information to herd owners have provided some of the more dramatic moments in the Jersey association's history.

Secretary R. M. Gow entering registration applications in the ledger at his desk in the New York offices.

Electronic data processing had come to the association in 1943, when $10,000 was allocated for the purchase and installation of a punch card system to process records received by the Production Testing department. That innovation allowed the Jersey association to publish its first *Jersey Performance Register* in 1951, a compendium of DHIR production records received between 1943 and 1950. The volume was produced annually through 1978.

Two records were set during the AJCC's 85th year of operation, 1953. The two millionth animal was entered into the Herd Register, and 85,606 registrations were recorded during the fiscal year 1952-53. Each and every one of those certificates had been produced by hand, by a secretarial legion that numbered over 100 people. Their labor was relatively inexpensive and the volume of work was high. It would take another decade, with hundreds of thousands certificates typed up, before the Board of Directors would examine a total conversion of the AJCC's databanks to electronic data processing.

It was not a moment too soon. Costs were creeping up, revenues from registrations and transfers were declining, and savings were needed. The proposal presented to the Board was to switch to the new IBM 1440 Disk-Tape Data Processing System, "which would perform animal registrations, herd performance analysis and performance volume publication operations, as well as general accounting work." Not only would such a decision reduce costs, it would provide the same level of service as Jersey breeders had become accustomed to.

The Board voted unanimously on June 13, 1964 to move forward, beginning an arduous process of data conversion, computer programming and testing that would take longer and cost more than had been budgeted. The original plan allowed one year for converting information from file cards to IBM punch cards, after which it would take three to four months to compile the master tapes and pilot test the system.

The timeline for data conversion was met. "All key punching with the exception of our current registrations is completed," Executive Secretary J. F. Cavanaugh reported to the Board at its winter meeting in 1966. The magnitude of the task had been astounding, however, even through only records dating back to

More than 60 secretaries are pictured in the registration and transfer section of the AJCC's offices in the late 1940s.

January 1, 1954 were converted. "From the registration standpoint alone, records were converted on over 750,000 animals with about 2.3 key punch cards per animal. When the number of cards on registrations, transfers and owners is multiplied by the number of strokes of the key punch involved, we had approximately 137 million key punch strokes during the conversion period."

April 1, 1966 was the revised target date for the first work to roll off the new system, but it came and went without a registration certificate. There were three reasons. First, the programmer hired at the outset of the project "proved to be inadequate" to the task. In his stead, the AJCC hired a consultant firm "to assist us in a 'crash program' to process registration certificates and transfers, to complete the unwritten program and correct the inadequately written programs."

Then, there were the inevitable corrections to the data as originally entered. "When we started to write certificates the information in our tapes was challenged by the new applications," Cavanaugh told the members attending the 1967 Annual Meeting. "Any errors made had to be reckoned with. Corrections going back sometimes two, three, four or five generations or three or four transfers had to be made."

But no one had anticipated in 1964 that the Board would declare a moratorium on over-age registrations in 1965. "Breeders promptly took advantage of the opportunity to bring their registration papers up to date. Registrations received increased

49.6% in November and 83.3% in December." It was over 50% more work than had been planned for.

Row after row of boxes with registration applications began accumulating and the staff, already working overtime, extended their efforts into second and third shifts.

TOWARD THE WORLD WIDE WEB

For the first 12 years of electronic data processing, the American Jersey Cattle Association rented unused processing time from businesses in the Columbus area. Secretarial staff would enter work on punch cards during the day. The assembled cards would be then be picked up and processed by another employee during the midnight shift. "The computer back in the '60s was almost manual," Gene McCain of the data processing area noted in a 1981 interview.

While cost-effective, this procedure was becoming less able to meet Jersey owners' demands for faster turn-around of registration work and access to genetic evaluations by the mid '70s. In 1978, the Board of Directors authorized purchase of an in-house computing system. It took six years to design, test and implement the system, based originally on a stand-alone mainframe DEC PDP 11-34, at a cost of $184,300. A smaller investment of $51,000 between 1985 and 1987 added to its functionality. Additional modifications were made in 1995 at a cost of $55,000.

Computer technology is nothing but dynamic, and that last investment was really a Band-Aid®. As smoothly as the system was working, it was just too limited to provide for the ever-expanding information requirements of Jersey breeders. The user interface, once state-of-the-art, was like that of a line printer, cumbersome and inefficient in the world of Windows®. That problem was becoming more and more obvious as the World Wide Web was capturing people's imaginations and showing them a more user-friendly and flexible approach to obtaining and delivering information.

The Board of Directors, at its June 1997 meeting, approved a complete re-engineering of the AJCA's data processing system, basing it upon the Internet/Intranet architecture. Over the past two years, operations performed internally by AJCA staff were programmed, as were operations to be deployed on the Internet for breeders' use. Its price tag was $450,000. The first registrations and transfers from the Intranet side of the system rolled off last fall. This past March these functions were made available online at *InfoJersey.com*. Internet users also have the ability to request Official Performance Pedigrees at any time of the day or night, seven days a week, and compiled in real time with the most up-to-date information. The AJCA is the only livestock recording association to offer such services.

InfoJersey.com will be available to process your registration work on January 1, 2000. It is fully Y2K compliant.

shifts.

But by November of 1966, the AJCC had achieved "current operational status. The patience and understanding of most breeders were exemplary and appreciated, as the backlog of work cleared during the year and conversion became a reality." Expenses charged to the conversion totaled nearly $145,000, or $55,000 more than originally estimated.
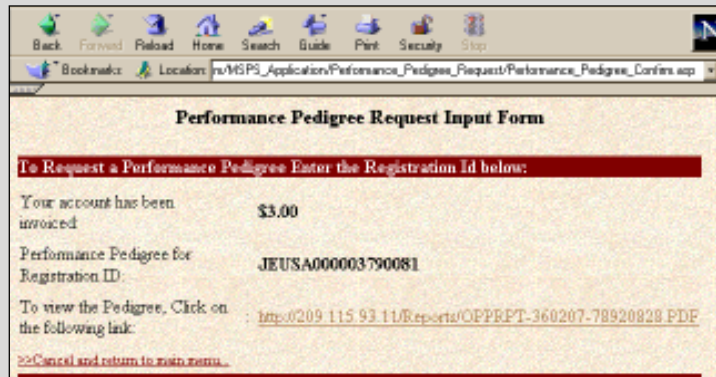
The pain of birth was short-lived, as illustrated by an article in the February 5, 1967 issue of *Jersey Journal*. As part of an international survey of livestock recording societies, the Jersey organizations were asked to determine "the six most important decisions" in its history. Past and present Presidents and Directors, the presidents and secretaries of all state organizations, and an assortment of university, A.I. and news media personnel were polled. Among the "most important decisions" was "the adoption of electronic data processing and other improvements in office procedures for testing, classification, and registration."

Such an evaluation clearly didn't come from assessing the short-term costs of entering electronic data processing, but rather from considering its long-term benefits. At least one director predicted such. "At the June 1964 Board Meeting, Director C. Grier Beam expressed an opinion that we would never save the first $20,000, because we would *change our programs* to provide more service."

Beam's observations appeared all the more prophetic after the Board adopted USDA sire evaluations on January 1, 1968.