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2002 ANNUAL REPORT



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## ABOUT EMBREX, INC.

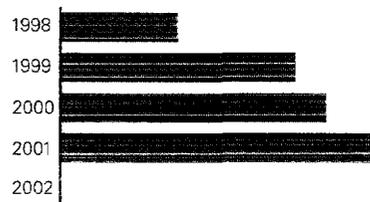
Embrex, Inc., The In Ovo Company,<sup>SM</sup> is an international company specializing in providing *in ovo* (in-the-egg) products and solutions to the global poultry industry. With customers located in 32 countries on six continents, Embrex is focused on realizing the value inside the avian egg. Our goal is to maintain the leading position as the supplier of *in ovo* delivery systems, devices and novel *in ovo* biological products worldwide. We are achieving this goal by developing and commercializing patented biological products and delivery and detection devices that improve bird health, help reduce production costs and provide other economic benefits to the poultry industry.

## 2002 HIGHLIGHTS

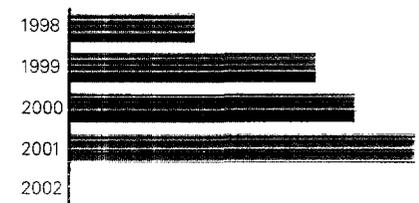
- Bursaplex<sup>®</sup> infectious bursal disease vaccine received regulatory approval in China, Mexico, Sri Lanka and Venezuela
- Initiated plans to build manufacturing facility for Inovocox<sup>™</sup> vaccine, the first *in ovo* vaccine against coccidiosis being reviewed by the USDA
- Initiated commercial trials with proprietary Gender Sort system with partner Cobb-Vantress, the largest U.S. broiler breeder
- Strengthened intellectual property position with five new U.S. patents and foreign patents issued
- Installed Inovoject<sup>®</sup> Egg Remover<sup>™</sup> and Vaccine Saver<sup>®</sup> systems with new and existing customers worldwide

NOTE: This Annual Report may contain forward-looking statements. See Item 7 of the Form 10-K included in this Annual Report.

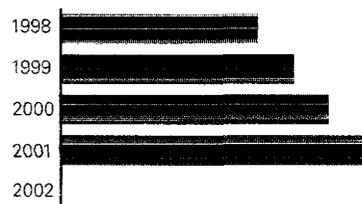
### EARNINGS PER SHARE



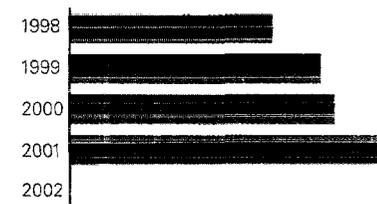
### NET INCOME



### REVENUE



### EBITDA



### FINANCIAL HIGHLIGHTS (in millions except per share data)

Year Ended	1998	1999	2000	2001	2002	% Change 2001-2002
Earnings per share	\$0.34	\$0.68	\$0.77	\$0.92	\$0.82	-11%
Net income	2.9	5.7	6.6	8.0	7.2	-10%
Revenues	28.6	33.8	38.8	44.7	45.3	+1%
EBITDA	8.8	10.9	11.5	13.4	13.6	+2%

## TO OUR SHAREHOLDERS:

2002 was a year of significant progress and challenge for Embrex. Our progress included many successes in product development with the Gender Sort project, Newplex™ *in ovo* Newcastle vaccine and Inovocox™ *in ovo* coccidiosis vaccine. These advances reinforced the confidence we have in the strength and potential of our product pipeline. We also made solid progress with international expansion, placing Inovoject® systems and Egg Remover™ systems worldwide.

This progress occurred, however, in an environment that became progressively more challenging for Embrex and the global poultry industry as the year unfolded. U.S. producers reduced production and egg sets in the face of trade issues with Russia, higher feed costs and excess supplies of all types of meat. Certain international markets faced domestic economic issues, industry scandals and regulatory delays that affected our ability to place systems and sell vaccines. Consequently, the progress we made in expanding our business was essentially offset by the circumstances in the poultry industry.

With that in mind, senior and middle management approached our normal annual business planning process at the end of 2002 taking care to be especially thorough to ensure that both short- and long-term opportunities were maximized. This effort resulted in a comprehensive and balanced strategic plan approved by our Board of Directors in February 2003. After evaluating various options and scenarios, we concluded that the best strategy for the company and, therefore, shareholders was to use our business and financial strengths to further invest in our high-potential projects. We also opted to pursue monetary damages against Fort Dodge Animal Health. We believe their refusal to support and market Bursamune® *in ovo* infectious bursal disease vaccine hampered Embrex's ability to derive revenues from European markets.

The decision to invest further in R&D was made carefully based largely on the following assessment: we perceive low technical risk for our Gender Sort system and our Inovocox™ vaccine projects; we believe our patent positions have strengthened; and we believe that market potential in these areas is great.

## LOOKING AHEAD

Now I'd like to share with you our business strategy starting with a brief historical explanation. During the last few years, we identified and reported to you on four projects that looked promising from both a product and market perspective. These four programs included our *in ovo* Newcastle disease vaccine, our proprietary Gender Sort system, our novel *in ovo* coccidiosis vaccine, and improving methods to identify fertile versus infertile eggs. The latter already has resulted in two commercial products: the Vaccine Saver® option and the Egg Remover™ device. Notably, U.S. demand for the Egg Remover™ device for 2003 has significantly exceeded our expectations and we are responding with additional people to install these new devices and service customers in the United States. We believe that Egg Remover™ installations will help us offset some of the current economic conditions the U.S. poultry industry is facing and will further enhance the value we provide to poultry producers. The three other projects will be the primary focus of my letter. However, before elaborating further on them, I'd like to mention one thing: We knew that the likelihood of moving all four of these projects forward to a successful commercialization concurrently would be a challenge, so we obtained \$8 million in outside funding to minimize the financial burden. These monies — in the form of grants and collaborations — defrayed our costs substantially over the past four years, with one very important benefit: We did not relinquish much in the way of potential future revenues. One significant result from our year-end 2002 planning effort was our strategy to self-finance these projects through the final stages of development so that future earnings potential would not need to be further shared with future collaborators.

### NEWCASTLE DISEASE AND THE NEWPLEX™ VACCINE

Embrex's Newplex™ Newcastle vaccine is awaiting U.S. Department of Agriculture approval. We expect Newplex™ vaccine to be the only Newcastle disease product available that is effective and safe *in ovo*. Following USDA's decision, we plan to immediately move forward with regulatory applications in the top 10 potential markets worldwide. Newcastle disease, a highly contagious respiratory disease, usually is more prevalent in Latin America and Asia with sporadic outbreaks elsewhere around the world. We believe that a primary impact of Newplex™ vaccine will be its ability to drive additional Inovoject® system placements in these key markets in addition to the sales revenue that the vaccine will garner for Embrex.

## GENDER SORT SYSTEM

This may very well be the most talked about Embrex project at present. As promised, we installed a commercial-scale prototype at a commercial breeder hatchery during 2002 and in doing so we have made a great deal of progress in conjunction with our partner Cobb-Vantress. Developing an automated system for what is currently a manual process is quite challenging, but not unheard of at Embrex. Indeed, it is reminiscent of the development of the Inovoject® system more than 10 years ago when people were skeptical that we could automate the *in ovo* injection process. But we believed we could — and did. We continue to refine the Gender Sort system and have reached the point where we are designing the second-generation prototype intended to lead to the device we expect to place with customers. To maintain timelines, design of this second-generation prototype system is occurring concurrently with our field trials of the first prototype. We plan to target the breeder industry first, then the layer and turkey markets because all three fully sort birds by gender. We intend to further explore opportunities in the broiler market, which would require refinement of our technology to suit this customer's needs. We estimate the total opportunity for Gender Sort is approximately \$300 million based on our market research.

## EMBEX TO MANUFACTURE INOVOCOX™ COCCIDIOSIS VACCINE

In 2002, we decided to invest more than \$11 million in a manufacturing facility for our proprietary *in ovo* vaccine to prevent coccidiosis, a parasitic disease of the bird's digestive system. Our investment reflects the confidence we have in this potential product as a result of several trials run in commercial broilers raised under commercial conditions. We are well into the USDA review process for this product but still have several steps ahead of us since a key component of the regulatory process is the safety and efficacy of the product produced at our manufacturing facility, now under construction. That means our new facility, which we hope to complete by year-end 2003, as well as the product produced there, will require USDA approval.

Industry interest in Inovocox™ vaccine has been high. The industry currently spends more than \$350 million globally on chemical compounds and live vaccines delivered post hatch to protect against coccidiosis. However, there is a movement away from using chemical compounds (some of which have been banned in

the European Union) toward the use of live vaccines which are considered to be a "greener" approach to disease control. Also, existing products are used on a rotational basis due to resistance issues. We believe our *in ovo* vaccine option presents a great opportunity for Embrex and our customers. Compared to post-hatch vaccines administered by spray cabinets or in drinking water, the *in ovo* vaccine provides a uniform dose to every bird and should result in improved protection.

## CONCLUSION

These projects — built on the solid business and financial foundation that is Embrex today — have the opportunity to open, or in many cases to open wider, hatchery doors to Embrex. We believe these opportunities, pushed aggressively to completion, will have the profound effect of making our existing business more valuable to the world's poultry producers. As a result, we envision the Embrex of the future pursuing a market opportunity that we believe will quadruple from \$200 million today to more than \$800 million annually during the second half of this decade.

The progress made during the last two years has confirmed a strength we have stressed for several years: Embrex has amassed a unique and diverse team of scientists, engineers and poultry experts capable of developing innovative products that intertwine engineering, biology and avian embryology. We have established a customer service team that consistently exceeds customer expectations. Many of our chief inventors and sales and service professionals have significant tenure with our company. Embrex is an organization with expertise and discipline, dedication and enthusiasm, and we look forward to capitalizing on the opportunities our investments will provide in the coming years. Our thanks also go out to you, our shareholders and our customers, for your continued support. I look forward to reporting our progress to you in 2003.

Sincerely,



Randall L. Marcuson  
President and Chief Executive Officer  
March 14, 2003



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## PART I

### ITEM 1. BUSINESS

#### GENERAL

Embrex, Inc. ("Embrex" or the "Company") is an international agricultural biotechnology company engaged in the development of innovative *in ovo* ("in the egg") solutions that meet the needs of the global poultry industry. Embrex is focused on developing patented biological and mechanical products that improve bird health, help reduce production costs and provide other economic benefits to the poultry industry. The Company was incorporated in 1985 in North Carolina and is headquartered in the Research Triangle Park, North Carolina area.

Embrex has developed and commercialized the Inovoject® system, a proprietary, automated in-the-egg injection system which can inoculate 20,000 to 50,000 eggs per hour and eliminates the need for manual, post-hatch injection of certain vaccines. The Inovoject® system is designed to inject vaccines and other compounds into targeted compartments within the egg. Embrex markets the Inovoject® system to commercial poultry producers, charging a fee for each egg injected. The Company has also introduced the Vaccine Saver® option and Egg Remover™ module to provide additional automation benefits to the poultry hatchery. The Vaccine Saver® option for the Inovoject® system identifies infertile and early-dead eggs and selectively prevents vaccination to these eggs. The Egg Remover™ module works in conjunction with the Inovoject® system to remove infertile and early-dead eggs from incubator trays prior to inoculation through the Inovoject® system.

In addition to the Inovoject® system and related devices, Embrex has developed and is marketing a virus-antibody complex vaccine technology, VNF®, useful in the development of certain avian vaccines. The Company also has developed and is marketing Bursaplex®, a VNF®-based vaccine for protection against avian infectious bursal disease ("IBD"). Embrex also is developing various other proprietary mechanical and biological products to improve bird health, reduce bird production costs and provide other economic benefits to the poultry industry. These products are in various stages of development, and some are being developed in collaboration with major animal health companies, the United States Department of Agriculture (the "USDA"), major poultry producers and several leading universities in the field of avian science. These products are being designed to be delivered through the Inovoject® system, and some may also be administered prior to incubation as well as after hatching.

#### EXISTING PRODUCTS

##### Inovoject® Egg Injection System

Embrex has developed and commercialized a proprietary, automated in-the-egg injection system, which can inoculate 20,000 to 50,000 eggs per hour and eliminates the need for manual, post-hatch injection of certain vaccines. This proprietary system, called the Inovoject® system, is designed to inject vaccines and other compounds in precisely calibrated volumes into targeted compartments within the egg. Embrex markets the Inovoject® system to commercial poultry producers, charging a fee for each egg injected.

In 2002, the Company converted a number of hatcheries to the Inovoject® system and continued operating Inovoject® systems in hatcheries converted prior to 2002. The Company estimates that its Inovoject® system inoculates in excess of 80% of all eggs produced for the United States and Canada broiler poultry markets and, therefore, expects diminished growth in the number of system installations and only minor Inovoject® system revenue growth in this market. Therefore, the Company must expand its Inovoject® system, along with Vaccine Saver® and Egg Remover™, installations and vaccine product sales in worldwide markets in order to realize sustainable overall revenue growth. The Company estimates that approximately 70% or more of the world broiler production occurs outside the United States and Canada. Accordingly, the Company is continuing its strategy to further market its Inovoject® system and other products outside North America.

During 2002, the Company placed a number of Inovoject® systems for trial and on contract at locations outside the United States and Canada. The Company's initial expansion outside the United States and Canada was focused on Europe, the Middle East, and Africa. In 1997, the Company began expansion efforts in Asia and, in 1998, in Latin America. Currently, the Company has Inovoject® systems either operating on contract or on trial in 32 countries.

Overall, the placement of Inovoject® systems outside the United States and Canada is dependent on market acceptance of various *in ovo* ("in the egg") vaccines and obtaining regulatory approval of these vaccines in numerous countries.

Embrex has developed and introduced the Vaccine Saver® option for the Inovoject® system, which identifies infertile and early-dead eggs and selectively prevents vaccination to these eggs. It is designed for use in select markets where vaccine prices are high. The Vaccine Saver® option was introduced in Europe in 1999. Embrex has also developed a related system, the Egg Remover™ that works in conjunction with the Inovoject® system to remove infertile and early-dead eggs from incubator trays. This product has been placed in ongoing hatchery field trials and several commercial installations, primarily in North America and Europe.

Certain poultry diseases are more prevalent in some geographic regions than in others. For example, Marek's disease, for which the Inovoject® system primarily is used in the United States, is not as widespread in Europe as in North America. Infectious Bursal Disease (also known as Gumboro disease) is prevalent in Northern Europe, the Middle East, Asia, parts of Latin America and, to a lesser extent, in the United States. The Company expects that the primary usage of its Inovoject® systems will vary by geographic region according to the prevailing diseases as well as regulatory approval and market acceptance of vaccines for *in ovo* delivery. There are a number of poultry vaccines marketed by various animal health companies in the United States and other markets, which can be used with the Inovoject® system or after hatch. The relative demand and cost for these vaccines and customer willingness to use *in ovo* delivery or substitute *in ovo* vaccines for after hatch vaccines will influence Inovoject® system, Vaccine Saver® and Egg Remover™ usage.

#### VNF® (Viral Neutralizing Factor)

Embrex has developed, patented and commercialized a virus-antibody complex vaccine technology, VNF®, which permits single-dose immunization of the avian embryo effective for the life of the bird. By using the VNF® technology to form a virus-antibody complex, immunization is provided in a single step, reducing or eliminating many of the multiple vaccinations carried out in the industry. The presence of the VNF® antibody delays the onset of virus replication allowing the safe *in ovo* administration of moderately attenuated vaccine viruses. By using VNF® in this manner, certain virulent vaccine viruses can be made into a safe and effective vaccine, which can be used *in ovo* or after hatch.

The VNF® technology is the subject of five issued U.S. patents and several foreign patents and foreign patent applications. The U.S. patents are owned by the University of Arkansas and exclusively licensed to Embrex for avian use on a royalty basis for the life of the patents. The last of these U.S. patents will expire during 2012. VNF® is a component in the Company's Infectious Bursal Disease vaccine, Bursaplex®, described below. Embrex has also applied VNF® technology to other avian disease vaccines, including Newcastle disease, which is currently under registration review by the USDA. There is no assurance that the Company's research will result in product opportunities.

#### Infectious Bursal Disease (IBD) Vaccines

VNF® technology has been used in a vaccine against avian IBD, which weakens a bird's immune system. Birds infected by IBD typically exhibit poor growth or can succumb to other diseases because of a compromised immune system. This disease is currently widespread in Northern Europe, the Middle East, Asia, parts of Latin America and, to a lesser extent, in the United States. To date, IBD has been treated post-hatch via manually delivered vaccines or in drinking water. Existing vaccines are associated with certain limitations, and some IBD vaccines cannot be used safely or effectively *in ovo*. The Company estimates the worldwide market for IBD vaccines is approximately \$60 million annually.

Embrex currently is seeking regulatory approval in selected Latin American, Middle Eastern and Asian markets for *in ovo* and post-hatch use of Bursaplex®. Regulatory approval and market acceptance of various *in ovo* vaccines can facilitate the placement of Inovoject® systems in certain markets. To date, regulatory approval for Bursaplex® has been received in 24 countries besides the United States, and regulatory approval is temporary or pending in seven countries. Currently, Bursaplex® is being marketed in most of these countries where regulatory approval has been obtained.

The Company's VNF® technology has been used in an IBD vaccine produced by Fort Dodge Animal Health, a division of Wyeth, formerly American Home Products, which was to be marketed by Fort Dodge in certain European countries under Fort Dodge's trade name Bursamune®. During the second quarter of 2001, Fort Dodge advised its distributors that certain other Fort Dodge products, which compete with Bursamune®, could potentially be used *in ovo* in place of Bursamune®. Also, Fort Dodge has informed Embrex that it has discontinued manufacturing and does not intend to market or seek further regulatory approvals for Bursamune®. Embrex believes Fort Dodge remains obligated under its agreements with Embrex. After discussions with Fort Dodge to reach resolution on this matter were unsuccessful, the Company filed a complaint in April 2002 in Wake County Superior Court, North Carolina against Fort Dodge Australia, Pty. Ltd. and Wyeth, alleging breach of contractual obligations to develop, register and market Bursamune® in the territories of Europe, the Middle East and Africa, unfair and deceptive trade practices and related claims. In May 2002, the case was moved to the United States District Court for the Eastern District of North Carolina. In July 2002, Wyeth asserted a counterclaim against Embrex alleging breach of contract and related claims, which Embrex intends to vigorously defend. Embrex does not expect to generate further revenues from either the sales of VNF® to Fort Dodge or the royalties generated from Fort Dodge's Bursamune® sales. January of 2003 Embrex amended its complaint to add seven entities that are subsidiaries of or otherwise affiliated with Wyeth as additional defendants. In responding to the amended complaint, the original defendants withdrew five of seven counterclaims.

## PRODUCTS UNDER DEVELOPMENT

Embrex is developing individually, and in collaboration with others, additional products and devices which address poultry health and performance needs *in ovo*. These additional products are in various stages of development. There can be no assurance that Embrex will successfully develop or market any of these products. Also, there is no assurance regulatory approval will be obtained. Marketing products developed jointly with others may require royalty or other payments by Embrex to its co-developers.

### *In Ovo* Products for Control of Coccidiosis and Newcastle Disease

The Company is developing a novel *in ovo* biological control method for coccidiosis. Coccidiosis is caused by a protozoan parasite, which attacks the gut of the chicken, causing significant problems with the intake and digestion of feed and, therefore, the physical and economic performance of the bird. Currently, virtually all broiler chickens, and most poultry in general, receive anti-coccidiosis compounds called coccidiostats incorporated into poultry feed. Over the years, coccidia have developed levels of resistance to these coccidiostats and thus effectiveness has been somewhat reduced. Additionally, environmental and food safety groups, especially in Europe, are lobbying to have coccidiostats removed from the market. While Embrex believes that these factors will lead to a change in the market where coccidiosis vaccines are favored over coccidiostats, this cannot be guaranteed. Currently, a limited number of live vaccines have been developed and are administered orally soon after hatch. However, due to difficulties in providing a precise oral dose to each bird, growth depression and non-uniformity can occur in broiler flocks. Therefore, such live vaccines are used primarily in parent stock. Using its Inovoject® system technology and its knowledge of avian embryology, the Company is developing a novel, efficacious and cost-effective means of preventing coccidiosis in broiler chickens. This program is aimed at overcoming many of the problems associated with current practices. The Company estimates that the worldwide market for products that control coccidiosis is approximately \$350 million per year.

In 1997, the Company established the feasibility of an *in ovo* biological control method for coccidiosis. In late 1997 the Company began working with Pfizer Inc. and in 1999 the two companies entered into a collaborative research and development program to research and develop a live coccidiosis vaccine for *in ovo* delivery to poultry. During 2000 and 2001, Embrex conducted large-scale field trials, coordinated with two major U.S. poultry producers that demonstrated that Inovocox™, Embrex's *in ovo* coccidiosis vaccine under development, is safe and efficacious, with performance equivalent to the commonly used coccidiostats. Although these field trials have been positive, there is no assurance that ongoing research and development will result in a marketable product. In June of 2001, the Company announced that it had acquired an exclusive worldwide license from Pfizer Inc. to all pending patents relating to *in ovo* poultry coccidiosis vaccines. Under the license agreement, Pfizer will receive milestone payments from Embrex and a royalty on future sales of the vaccine. Two patents covering the process of vaccination *in ovo*, against coccidiosis, issued in the United States in December 2002. Collectively these patent rights, held by Pfizer

and licensed exclusively to Embrex, cover the use of various life stages of the parasite for immunization *in ovo*. In January 2003, Embrex broke ground on construction of a biological manufacturing facility located near Laurinburg, North Carolina for the purpose of manufacturing Inovocox™ - the Company's proprietary *in ovo* coccidiosis vaccine. Continued development of this project will involve further clinical and field trials. There can be no assurances that any of these development efforts will be successful. Embrex has initiated the USDA regulatory approval process with respect to these development efforts, and does not expect any coccidiosis product developed by the Company to reach the market until USDA approval is obtained. Although this product has been submitted for registration there is no assurance that USDA approval will be obtained.

The registration application for Newplex™, Embrex's Newcastle disease *in ovo* vaccine which like Bursaplex® is based on VNF® technology, was submitted to the USDA during July 2001. Following an initial positive response, the USDA allowed the manufacture of pre-licensing serials (vaccine lots), which were used in field trials required for product registration. Reports on the field trials and label texts were supplied to the USDA in September and November of 2002. Although this product has been submitted for registration there is no assurance that the USDA approval will be obtained.

#### Gender Sorting Device

During 2002, Embrex continued its efforts to automate avian gender sorting. The Company believes that the economical and efficient *in ovo* determination of a bird's gender before it hatches will lead to an increase in the practice of raising birds separately by gender. In a number of independent studies, gender-separate rearing has been shown to increase the efficiency of feed utilization, improve processing plant operations and ultimately provide consumers with more uniform and economic poultry. In 1999, Embrex received a Phase I Small Business Innovation Research (SBIR) grant to support the development of an automated device to sort poultry eggs by gender and, in 2000, Embrex was awarded a \$270,000 follow-on Phase II SBIR grant to support development of an automated device for sorting poultry eggs by gender. The USDA's Cooperative State Research, Education and Extension Service (CSREES) supported the grants.

Embrex has made substantial progress in developing a gender sorting prototype and in laboratory scale trials has determined gender in a series of eggs with 100% accuracy. In April 2001, Embrex entered into a Credit Agreement with Advanced Automation, Inc. under which Embrex agreed to loan Advanced Automation up to \$3.4 million in connection with development and construction of a gender sorting automation module for the Inovoject® system. In July 2001, Embrex entered into a Research, Development and Marketing Agreement with LifeSensors, Inc. under which Embrex and LifeSensors are collaborating in the development and production of a gender sorting biosensor module for the Inovoject® system. The Company also entered into a Beta License and Non-Disclosure Agreement with Luminex Corporation for evaluation of an alternative assay for gender sorting in August 2002.

In July 2001, Embrex entered into an agreement with Cobb-Vantress, a world leader in broiler breeding, under which Cobb-Vantress agreed to provide funds for Embrex's ongoing development of patented technology and a device to determine the gender of poultry *in ovo*. Embrex subsequently received initial funding from Cobb-Vantress. Upon the achievement of certain milestones in the development and commercialization of Embrex's gender sort device technology, to the mutual satisfaction of the parties, Embrex anticipates receiving additional non-refundable payments from Cobb-Vantress. In return, Cobb-Vantress will receive favorable commercial terms upon adopting the gender sort device, if and when the device is ultimately commercialized. Embrex estimates that the worldwide market potential for the new gender sorting technology is in excess of \$300 million annually.

In June 2002, the gender sort prototype was placed in a commercial hatchery for further field development. Although the Company believes that this prototype placement and the Cobb-Vantress arrangement are positive steps forward, no assurances can be made that Embrex's development work will lead to a commercial device.

#### Other Products Under Development

In June 2000, Embrex announced that it had embarked on a research collaboration with Origen Therapeutics, Inc., a privately held biotechnology company based in Burlingame, California, aimed at combining Origen's avian embryonic stem (ES) cell technology with Embrex's *in ovo* technology. The goal of the collaboration is to develop methods that enhance poultry production economics through intervention early in embryonic development. In July

of 2001, Embrex along with Origen Therapeutics, Inc. was awarded an Advanced Technology Program (ATP) grant totaling \$4.7 million from the National Institute of Science and Technology (NIST), a division of the U.S. Department of Commerce. The four-year grant will help fund a project, with a proposed budget of \$9.7 million, for development of technology aimed at the large-scale production of poultry utilizing avian embryonic stem (ES) cells and *in ovo* technology. Although the Company believes that this arrangement and this grant are positive steps forward, no assurances can be made that Embrex's development work will lead to a commercial technology.

Embrex routinely enters into collaborative agreements with various animal health companies, pharmaceutical companies as well as research and academic institutions to evaluate the utility of certain of their compounds, technologies and devices when delivered or applied *in ovo*. Depending upon the outcome of these evaluations, Embrex may or may not proceed with these collaborations for further development. There is no assurance that these efforts will yield products or further collaborations.

## PATENTS AND PROPRIETARY RIGHTS

Embrex controls (either through direct ownership or exclusive license) 41 issued U.S. patents, 20 pending U.S. patent applications, 126 issued foreign patents and 155 pending foreign patent applications. In addition, Embrex has executed confidentiality agreements with its collaborators, subcontractors, employees and directors.

The Inovoject® system utilizes a process of injecting viral, bacterial or fungal vaccines into avian eggs that was patented in the United States by the USDA in 1984 (the "Sharma Patent"). Embrex held the exclusive license to this patent through its expiration in June 2002 and Embrex has supplemented this patent with seven additional issued U.S. patents (and numerous foreign patents and patent applications) covering specific design features of the Inovoject® system. See Item 3, "Legal Proceedings", below.

Embrex also owns or licenses method-of-use patents for the *in ovo* administration of VNF® vaccines and other compounds to elicit various beneficial responses in poultry. Two U.S. patents issued in 1995 for methods of treating IBD virus infections using VNF® vaccines, including *in ovo* administration, are owned by the University of Arkansas and licensed exclusively to Embrex. A U.S. patent claiming the use of VNF® viral vaccines in all non-primate animals was issued in February 1999. A U.S. patent claiming the use of VNF® bacterial vaccines issued in 2002. These patents and additional patent applications encompass the use of VNF® vaccine compounds regardless of the source of the VNF®. These VNF® patents additionally include composition-of-matter claims to VNF® vaccines against IBD virus disease and composition-of-matter claims to VNF® vaccines for combating viral diseases in non-primate animals. These patent claims cover the vaccine preparation, regardless of the manner in which the preparation is used.

The Company filed three new U.S. patent applications in 1998, 10 new U.S. patent applications in 1999, six new U.S. patent applications in 2000, six new U.S. patent applications in 2001 and 12 new U.S. patent applications in 2002. During 2002, Embrex also filed nine new foreign patent applications. Each application covered various aspects of *in ovo* technology.

Embrex continues its efforts to patent methods of delivering compounds *in ovo*, including early intervention methods and devices. During the years 1998 through 2002, 24 U.S. patents were issued or allowed, further expanding Embrex's proprietary position with respect to *in ovo* technology.

Additionally, Embrex has federally registered the trademarks Embrex®, Inovoject®, VNF®, Bursaplex® and Vaccine Saver® in the United States, and has applied for federal and foreign registration of other various trademarks including Egg Remover™, Newplex™, Inovocox™ and The In Ovo Company<sup>SM</sup>.

## COMPETITION

The competition for the Inovoject® system is presently the manual, post-hatch administration of biological products. Since most of Embrex's products and potential products are being designed to be administered through the Inovoject® system, the Inovoject® system must continue to be accepted within the poultry industry and operated as intended under long-term commercial conditions for these potential products to be marketed successfully.

The Company's exclusive license to the U.S. patent for injecting vaccines into an avian embryo, the Sharma Patent, expired in June 2002. Embrex has supplemented this patent with seven additional U.S. patents covering specific design features of the Inovoject® system. In addition, Embrex relies on numerous foreign patents to protect its intellectual properties and to afford a competitive advantage. See "Patents and Proprietary Rights" above. There can be no assurance, however, that a competitive delivery method, either within or outside the United States, will not gain commercial acceptance, particularly now that the Sharma Patent has expired. Embrex continues to monitor for the presence of any competitive *in ovo* administration systems worldwide. See Item 3, "Legal Proceedings," below.

Competitive success for Embrex will be based primarily on the current comprehensive customer service and commercial acceptance of third-party and in-house *in ovo* products, achieving and retaining scientific expertise and technological superiority, identifying and pursuing scientifically feasible and commercially viable opportunities, obtaining proprietary protection for its research achievements, obtaining adequate funding and timely regulatory approvals, and attracting corporate sponsors or partners in developing, testing, producing, and marketing products, none of which can be assured. In addition, a primary competitive factor affecting Embrex is its ability to conduct research and development. Embrex's ability to successfully compete also is dependent on its ability to attract and retain key personnel. Maintaining financial and human resources, therefore, are important factors for success.

## **PRODUCTION, MARKETING AND DISTRIBUTION**

### **Production**

Embrex currently subcontracts the production of all of its mechanical and biological products and expects to continue to do so for the foreseeable future. The Company believes that alternative sources of manufacture and supply generally exist.

In March 2003, the Company announced that it had broken ground on construction of an \$11.0 million biological manufacturing facility located near Laurinburg, North Carolina. The facility will be designed to manufacture the Company's Inovocox™ *in ovo* coccidiosis vaccine upon approval from the USDA. Design and construction of Embrex's biological manufacturing facility is being managed by Lockwood Greene, a firm with extensive experience in the design and construction of pharmaceutical manufacturing facilities. The main manufacturing facility will house vaccine purification, sterile filling, shipping and receiving, as well as quality control laboratories. The site will also include two poultry brooder houses and a building for the initial steps of the production process. Certain aspects of the novel manufacturing process are unique and proprietary to Embrex. Ground breaking occurred in January 2003 and completion of the construction of the project is expected to take approximately one year.

### **Inovoject® System, Vaccine Saver® Option and Egg Remover™**

Embrex's in-house engineering staff designs the Inovoject® system, Vaccine Saver® option and Egg Remover™, which incorporate proprietary mechanical, pneumatic and electronic sub-systems and concepts. The Company uses one contract manufacturer to fabricate its Inovoject® systems and Egg Removers™. While other machine fabricators exist and have constructed limited numbers of Inovoject® systems, a change in fabricators could cause a delay in manufacturing and a possible delay in the timing of future Inovoject® system and Egg Remover™ installations and revenues from those installations. The Vaccine Saver® option is assembled in our manufacturing area at the Company's corporate headquarters and the components are sourced from multiple vendors.

See "Risk Factors" filed as Exhibit 99 to this report.

### **VNF® (Viral Neutralizing Factor) Vaccines**

In 1993, Embrex signed multi-year agreements with SPAFAS, Inc. ("SPAFAS"), a subsidiary of Charles River Laboratories, Inc., under which SPAFAS supplies the VNF® component for the bursal vaccine Bursaplex®. In connection with this agreement, Embrex maintains appropriate inventory levels and places orders with SPAFAS to allow Embrex to satisfy anticipated customer demand for VNF®. The regulatory approval granted by the USDA for Bursaplex® in 1997 specifically covers vaccines produced with SPAFAS-manufactured VNF®. Additional agreements covering the Company's needs of VNF® for use in Bursaplex® and other products, including the

Company's Newcastle disease vaccine, Newplex™, for the next four years are in negotiation and are expected to be finalized in the first half of 2003.

The Company has granted Merial Select, Inc. ("Select") (a Merck and Aventis company) exclusive rights to manufacture, in the United States, an IBD vaccine containing Embrex's VNF® product, known as Bursaplex®, for Embrex to market in North America, Latin America and Asia. Embrex has also granted Fort Dodge (a division of Wyeth) non-exclusive rights to manufacture IBD vaccines containing the Company's VNF® product, known as Bursamune®, to be marketed in Europe, the Middle East and Africa. However, these rights are not being exercised pending resolution of the Fort Dodge legal matters described above. Abic Ltd. has been granted similar rights to manufacture and market an IBD vaccine, known as GuMBryo™, in Israel. The manufacture of the IBD vaccines produced by Select and Abic, and the Company's VNF® product, generally must be performed in licensed facilities or under approved regulatory methods. Although there are other manufacturers who are capable of manufacturing IBD products and producing products such as VNF®, a change of supplier for the Company could adversely affect Embrex's future operating results due to the time it would take a new supplier to obtain regulatory approval of its production process or manufacturing facilities. The Company seeks to minimize this exposure through multi-year supply agreements and the maintenance of adequate inventories.

### Marketing and Distribution

Because of the geographical and industrial concentration of the poultry industry in the United States and other global markets, Embrex markets its products and provides ongoing service directly to the industry. Embrex's marketing is focused principally on the broiler chicken segment of the poultry industry, but the Company also has adapted its products for use by, and initiated trials and entered into commercial contracts with, broiler breeder companies and a limited number of layer and turkey producers.

In order to encourage proper use of the Inovoject® system technology within an appropriate production environment, Embrex leases and licenses Inovoject® systems to hatcheries. The lease agreements cover the use of the mechanical equipment and ongoing field service, maintenance and technical support provided by Embrex. The agreements also include a license with royalty fees for use of Embrex's proprietary injection process. Also, in a very limited number of markets, under specific circumstances Embrex may sell the Inovoject® system to a third party distributor or a human flu vaccine manufacturer. Products, which are delivered *in ovo*, are sold separately by Embrex and also by others which may generate some royalty revenue for the Company during 2003. However due to the expiration of the Sharma Patent these separate *in ovo* products will no longer generate royalty revenue after 2003.

The Company has initiated arrangements for international distribution of Bursaplex®, subject in each case to the availability of required regulatory approvals. The Company has agreements with other parties to distribute Bursaplex® in Colombia, Dominican Republic, Egypt, Japan, Lebanon, Malaysia, Peru, Pakistan, Poland, South Africa, South Korea, Syria, Taiwan, Venezuela and Vietnam. Of these countries, all but Egypt and South Africa have granted regulatory approval for Bursaplex®. An agreement in Israel also entitles a distributor, Abic Ltd., to manufacture and market a VNF®-based IBD vaccine mentioned above. Subject to these agreements, the Company also will conduct international marketing directly. To date, regulatory approval for Bursaplex® has been granted in 24 countries besides the United States, and regulatory approval is temporary or pending in seven countries. Embrex has also added staff for selected Asian and Latin American markets and installed Inovoject® systems on a commercial or trial basis in certain Asian markets. In 1998, Embrex established Embrex BioTech Trade (Shanghai) Co., Ltd. in China, which will focus on marketing and distribution of Embrex products in China. Also in 1998, Embrex established Embrex Inc. Sucursal Argentina, a branch office in Argentina, responsible for commercial development and customer service and support. Initially, this office only served Argentina but now extends to other regional markets such as Bolivia, Chile, Paraguay or Uruguay. In 1999, Embrex established a subsidiary in Brazil, Inovoject do Brasil Ltda. In January 2001, Embrex established subsidiaries in France and Spain to market and service Inovoject® systems in those countries.

In Japan, Embrex has a distribution agreement with Ishii Company, Ltd. ("Ishii"), a subsidiary of I.P. Tsusho Co., Ltd., a leading chick producer and the dominant supplier of hatchery equipment in Japan. The Japanese Ministry of Agriculture, Fisheries and Forestry granted veterinary medical device regulatory approval for the Inovoject® system in 1999. Ishii is marketing the Inovoject® egg injection system to poultry producers throughout Japan. In

December 2000, Boehringer Ingelheim Shionogi Vetmedica, formerly Shionogi & Co., LTD, Embrex's exclusive distributor in Japan for Bursa-BDA [NP], the Japanese product name for Bursaplex®, successfully gained the necessary regulatory registration of the product for the Japanese market. In December 2002, Embrex signed a distribution agreement with Kaketsuken for the development, registration and marketing of Newplex™ in Japan.

The Company's revenues attributable to international operations in 2002, 2001, and 2000 were 31%, 31% and 29% of the Company's consolidated revenues, respectively. The Company's identifiable assets attributable to international operations in 2002, 2001 and 2000 were 25%, 32%, and 36% of the Company's consolidated assets, respectively.

The Company's gross profit attributable to international operations in 2002, 2001 and 2000 were 21%, 19% and 16% of the Company's consolidated gross profit respectively. See "Notes to Consolidated Financial Statements."

#### **RESEARCH AND DEVELOPMENT EXPENDITURES**

Research and development expense was \$6.7 million in 2000, \$8.1 million in 2001 and \$10.2 million in 2002. The increase in research and development expense from 2000 to 2002 largely reflects additional research activities in several areas including: increased outside contract research, analytical lab supply consumption, additional Inovoject® system, Vaccine Saver® and Egg Remover™ design and development and global technical support activity. Research and development is principally Company sponsored and funded primarily from internal sources and supplemented by grant and other sources of funds as appropriate.

#### **GOVERNMENTAL REGULATION**

Regulation by governmental authorities in the United States and other countries is a significant factor in the production and marketing of Embrex's products and in its on-going research and development activities. Although the use of the Inovoject® system is not subject to regulatory approval in the United States, animal health products being developed by Embrex and other companies must receive approval for marketing from either the USDA or the Food and Drug Administration (the "FDA") and from similar regulatory agencies in foreign countries where the Company has begun or contemplates doing business. These countries also may require approval of the Inovoject® system. Regulatory agencies require that products be tested and demonstrate appropriate levels of safety and efficacy. Generally, with respect to animal health products in the United States, the USDA has regulatory authority over products which are biological in origin or which stimulate or affect an animal's immune system and the FDA has authority over all other animal health products. The time and cost of USDA approvals are generally less than those for FDA approvals. FDA approval generally requires more extensive animal and toxicology testing than USDA approvals and may take five or more years to obtain, whereas USDA approvals generally take one to three years to obtain.

Management believes that compliance with environmental regulations currently has no material adverse effect on the Company's capital expenditures, earnings or competitive position.

#### **EMPLOYEES**

At December 31, 2002, Embrex employed 241 persons, 239 of whom were full-time employees, an increase of 19 persons from the 220 full-time employees at December 31, 2001.

#### **SIGNIFICANT CUSTOMERS**

Tyson Foods, Inc. ("Tyson") accounted for approximately 19% of Embrex's consolidated 2002 revenues. Based on millions of pounds of ready-to-cook poultry meat produced in 2002, Tyson accounted for approximately 22% of the broilers grown in the United States. During 1997, Tyson extended its contract with Embrex through 2004. There are no customers besides Tyson that represent 10% or greater of total revenues. However, Embrex's three largest customers, including Tyson, accounted for approximately 30% of consolidated 2002 revenues, down from 32% in 2001. The decrease in 2002 is largely the result of the expansion of the Company's customer base.

See "Risk Factors" filed as Exhibit 99 to this report.

## AVAILABLE INFORMATION

Embrex maintains an Internet site, <http://www.embrex.com>, that contains additional information concerning the Company. Embrex makes available free of charge through its Internet site its annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act as soon as reasonably practicable after Embrex electronically files such material with, or furnishes it to, the Securities and Exchange Commission (SEC). Information on the Company's Internet site is not part of or incorporated into this report on Form 10-K.

## ITEM 2. PROPERTIES

Embrex leases its corporate headquarters and research and development facilities, which occupy approximately 48,000 square feet and are located adjacent to Research Triangle Park, North Carolina. About one-third of the space is devoted to research and development. The lease has an initial six-year term expiring 2005 with annual rent increases of approximately 3% and an additional six-year optional renewal term with annual rent increases of approximately 4%. Embrex paid an annual rent of approximately \$0.5 million during 2002. In addition to research and development activities conducted at its corporate headquarters, Embrex has a 12,800 square-foot research facility near its headquarters. The lease is a 10-year term expiring November 14, 2007, with a five-year renewal option. The annual rent paid in 2002 was approximately \$0.2 million, with annual increases of approximately 3% through the first 10 years and approximately 4% during the five-year renewal term.

In addition to the Company's facilities in North Carolina, Embrex has leased office and warehouse space in some of its offsite and international operations.

## ITEM 3. LEGAL PROCEEDINGS

In 1996, Embrex filed a patent infringement suit in the U.S. District Court for the Eastern District of North Carolina against Service Engineering Corporation, a Maryland corporation, and Edward G. Bounds, Jr., a Maryland resident and officer of Service Engineering Corporation. The suit alleged that each of the defendants' development of an *in ovo* injection device, designed to compete with Embrex's patented Inovoject® system injection method, infringes at least one claim of U.S. Patent No. 4,458,630 exclusively licensed to Embrex for the *in ovo* injection of vaccines into an avian embryo (the "Sharma Patent"). Further, Embrex claimed that the defendants had violated the terms of a Consent Judgment and Settlement Agreement entered into with Embrex in November 1995 in which prior litigation was concluded with Service Engineering Corporation and Edward G. Bounds, Jr. agreeing not to engage in future activities violating the Sharma Patent. Embrex sought injunctive relief to prevent infringement of the Sharma Patent as well as monetary damages. In November 1996, Service Engineering Corporation and Edward G. Bounds, Jr., responded to Embrex's patent infringement suit by asserting various affirmative defenses and denying the substantive allegations in Embrex's complaint. This suit concluded on July 30, 1998 with a jury verdict in favor of Embrex. The verdict fully upheld the validity of all claims of the Sharma Patent, finding that the defendants had willingly infringed all asserted claims of the patent. The jury also found that Service Engineering Corporation and Edward G. Bounds, Jr., had breached the 1995 Consent Judgment and Settlement Agreement and that such breach was not in good faith. The jury awarded Embrex damages of \$500,000 plus litigation expenses and court costs. The U.S. District Court for the Eastern District of North Carolina entered a Judgment in favor of Embrex on September 28, 1998, which included a monetary award of \$2,612,885 and an injunction prohibiting Service Engineering Corporation and Edward G. Bounds, Jr., from practicing methods claimed in, or otherwise infringing, the Sharma Patent. That injunction expired with the expiration of the Sharma Patent in June of 2002. Following an appeal by Service Engineering Corporation and Edward G. Bounds, Jr. to the U.S. Court of Appeals for the Federal Circuit seeking a reversal of the Judgment, in July 2000, the United States Court of Appeals for the Federal Circuit affirmed the district court's decision to award to Embrex litigation expenses plus interest valued at approximately \$1.5 million. In addition, the appeals court upheld the finding that Service Engineering Corporation and Edward G. Bounds, Jr. had willfully infringed all asserted claims of the Sharma Patent. However, the appeals court vacated the award of direct infringement damages finding that the district court erroneously awarded direct damages without proper evidence to support the award. Therefore, the appeals court remanded that award (\$500,000 which was trebled) to the district court for further proceedings for determination of a reasonable royalty for the infringement of the patented method by Service Engineering Corporation and Edward G. Bounds, Jr. These proceedings were

opened on August 28, 2000, but were stayed early in 2001 pending the conclusion of a bankruptcy proceeding initiated by Edward G. Bounds, Jr.

During the second quarter of 2001, Fort Dodge advised its distributors that certain other Fort Dodge products, which compete with Bursamune® *in ovo* IBD vaccine, could potentially be used *in ovo* in place of Bursamune®. Also, Fort Dodge has informed Embrex that it has discontinued manufacturing and does not intend to market or seek further regulatory approvals for Bursamune®. Embrex believes Fort Dodge remains obligated under its agreements with Embrex. After discussions with Fort Dodge to reach resolution on this matter were unsuccessful, the Company filed a complaint in April 2002 in Wake County Superior Court, North Carolina against Fort Dodge Australia, Pty. Ltd. and Wyeth, alleging breach of contractual obligations to develop, register and market Bursamune® in the territories of Europe, the Middle East and Africa, unfair and deceptive trade practices and related claims. In May 2002, the case was moved to the United States District Court for the Eastern District of North Carolina. In July 2002, Wyeth asserted a counterclaim against Embrex alleging breach of contract and related claims, which Embrex intends to vigorously defend. Embrex does not expect to generate further revenues from either the sales of VNF® to Fort Dodge or the royalties generated from Fort Dodge's Bursamune® sales. January of 2003 Embrex amended its complaint to add seven entities that are subsidiaries of or otherwise affiliated with Wyeth as additional defendants. In responding to the amended complaint, the original defendants withdrew five of seven counterclaims.

See "Risk Factors" filed as Exhibit 99 to this report.

#### ITEM 4. SUBMISSION OF MATTERS TO A VOTE OF SECURITY HOLDERS

No matters were submitted to a vote of security holders during the fourth quarter of the fiscal year ended December 31, 2002.

## PART II

#### ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY AND RELATED STOCKHOLDER MATTERS

The Company's Common Stock trades on the Nasdaq National Market under the symbol EMBX. The quarterly trading ranges of the sales prices of the Company's Common Stock (based on each day's closing prices during the specified quarter) for the last two fiscal years were as shown in the table below:

<u>Quarter Ended</u>	<u>Common Stock Price Per Share</u>	
	<u>High</u>	<u>Low</u>
March 31, 2001	\$16.13	\$11.50
June 30, 2001	\$15.75	\$12.06
September 30, 2001	\$18.02	\$14.00
December 31, 2001	\$18.19	\$15.11
March 31, 2002	\$20.85	\$16.55
June 30, 2002	\$25.30	\$19.05
September 30, 2002	\$21.70	\$10.20
December 31, 2002	\$13.10	\$10.63

At February 28, 2003, there were 400 holders of record of the Common Stock. The Company has paid no dividends on any stock since inception and has no plans to pay dividends on its Common Stock in the foreseeable future.

## ITEM 6. SELECTED FINANCIAL DATA

### SUMMARY OF OPERATIONS BY QUARTERS (UNAUDITED)

The selected financial data below should be read in conjunction with the Company's consolidated financial statements and related notes appearing elsewhere in this report.

(In Thousands, Except Per Share Amounts)

	<u>2002</u>				<u>2001</u>			
	<u>1st Qtr</u>	<u>2nd Qtr</u>	<u>3rd Qtr</u>	<u>4th Qtr</u>	<u>1st Qtr</u>	<u>2nd Qtr</u>	<u>3rd Qtr</u>	<u>4th Qtr</u>
Revenues	\$11,356	\$10,845	\$11,659	\$11,465	\$10,801	\$10,759	\$11,471	\$11,629
Gross Profit	7,279	6,466	7,163	6,859	6,495	6,220	6,737	7,084
Net income	2,267	1,717	1,779	1,408	2,066	1,914	2,105	1,882

	<u>2002</u>				<u>2001</u>			
	<u>1st Qtr</u>	<u>2nd Qtr</u>	<u>3rd Qtr</u>	<u>4th Qtr</u>	<u>1st Qtr</u>	<u>2nd Qtr</u>	<u>3rd Qtr</u>	<u>4th Qtr</u>
Net income (per share of Common Stock)								
Basic	\$0.28	\$0.21	\$0.22	\$0.17	\$0.26	\$0.24	\$0.26	\$0.24
Diluted	\$0.26	\$0.19	\$0.21	\$0.16	\$0.24	\$0.22	\$0.24	\$0.22
Number of Shares Used in Per Share Calculation								
Basic	8,031	8,125	8,156	8,153	7,927	8,057	8,077	7,967
Diluted	8,741	8,985	8,519	8,525	8,576	8,673	8,728	8,597

### 5-YEAR SUMMARY OF SELECTED FINANCIAL DATA

(In Thousands, Except Per Share Amounts)

#### CONSOLIDATED STATEMENTS OF OPERATIONS DATA

	<u>2002</u>	<u>2001</u>	<u>2000</u>	<u>1999</u>	<u>1998</u>
Revenues	\$45,325	\$44,660	\$38,796	\$33,750	\$28,615
Research and development expenses	10,162	8,120	6,725	5,857	4,995
Other operating expenses	9,107	9,681	8,341	8,181	6,837
Net income	7,171	7,967	6,631	5,744	2,861
Net income per share of Common Stock					
Basic	\$0.88	\$1.00	\$0.84	\$0.70	\$0.35
Diluted	\$0.82	\$0.92	\$0.77	\$0.68	\$0.34
Number of Shares Used in Per Share Calculation					
Basic	8,116	8,007	7,901	8,151	8,255
Diluted	8,692	8,644	8,639	8,488	8,339

## CONSOLIDATED BALANCE SHEET DATA

	<u>2002</u>	<u>2001</u>	<u>2000</u>	<u>1999</u>	<u>1998</u>
Working capital	\$14,005	\$9,670	\$7,695	\$7,858	\$8,299
Total assets	42,013	34,058	26,770	26,233	24,990
Long-term liabilities	46	43	37	20	644
Accumulated deficit	(8,559)	(15,730)	(23,697)	(30,328)	(36,072)
Shareholders' equity	37,164	29,314	22,661	21,035	18,805

## ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

### RESULTS OF OPERATIONS

The following discussion and analysis should be read in conjunction with the Company's consolidated financial statements and related notes appearing elsewhere in this report.

Consolidated net income for 2002 decreased to \$7.2 million, 10% less than 2001 net income of \$8.0 million, which was 20% higher than 2000 net income of \$6.6 million. Diluted earnings per share were \$0.77 in 2000, \$0.92 in 2001 and \$0.82 in 2002. For the year ended 2002, shares outstanding on a diluted basis were 8.7 million, which was up from 8.6 million for both 2001 and 2000. The 2002 increase in diluted average shares outstanding from 2001 and 2000 is attributable primarily to the increase in the number of stock options exercised during early and mid 2002. This increase in shares was offset by repurchases of the Company's common stock during the third and fourth quarters of 2002.

### REVENUES

Consolidated revenues in 2002 totaled \$45.3 million, representing an increase of 1% over 2001 revenues of \$44.7 million, which were 15% over 2000 revenues of \$38.8 million. Inovoject® system revenues totaled \$40.2 million in 2002 compared to \$39.7 million in 2001 and \$36.2 million in 2000, representing increases of 1% from 2001 to 2002, and 10% from 2000 to 2001, with the 2002 increase coming principally from additional Inovoject® systems and injection activity in North America, Asia and Latin America. An increase in non-operating other revenue also helped increase total revenues. These other revenues were primarily derived from grant funds provided by Cobb-Vantress in support of the Company's gender sort project and from federal ATP funds supporting the Company's collaborative development project with Origen Therapeutics, Inc. During 2002, the U.S. dollar strengthened against selected currencies compared to the same period during 2001. If average exchange rates during 2002 had remained the same as the average exchange rates for these currencies during 2001, then the Company's revenues would have increased approximately \$1.2 million rather than actual increase of \$0.7 million.

The 2002 revenues include Inovoject® system lease fees along with some Egg Remover™ and Vaccine Saver® lease fees derived from multi-year contracts and paid trials in the United States and foreign countries, and the sale of Inovoject® systems to distributors and human flu vaccine companies. The sale of Inovoject® systems to distributors may cause variability in revenue and gross profit on an annual and quarterly basis. Embrex estimates that as of December 31, 2002, it was vaccinating in excess of 80% of the estimated nine billion broiler birds grown in the United States in 2002. Given its market penetration, the Company expects only minor Inovoject® systems revenue and earnings growth in this market, most of which is anticipated to come from new Egg Remover™ installations.

Sales of Bursaplex®, the Company's proprietary vaccine for the treatment of avian infectious bursal disease, was the source of \$3.1 million of product revenues in 2002 as compared to \$3.4 million of product revenues in 2001 and \$2.3 million of product revenues in 2000, representing revenue decreases of 9% for 2002 over 2001 and a 45% increase for 2001 over 2000. Overall Bursaplex® sales decreased during 2002 primarily due to build up of initial inventory for the Company's Japanese distributor during 2001, which did not re-occur during 2002. In addition, economic and currency devaluation issues in Argentina during 2002 also reduced Bursaplex® sales. These were offset by increased sales to the Company's other Asian markets. The inventory build up sales in Japan were the principal reason for the increase in Bursaplex® sales from 2000 to 2001. During the second quarter of 2001, Fort

Dodge notified Embrex that it did not intend to market Bursamune® (see "Business – Existing Products—Infectious Bursal Disease (IBD) Vaccines", above).

Management anticipates minor revenue and earnings growth in 2003 from existing Inovoject® system operations in the United States and Canada, higher revenue and earnings growth from new Inovoject® system leases in other countries, and sales of Bursaplex® product to poultry producers worldwide. However, the rate at which the marketplace will accept the Inovoject® system technology outside the United States and Canada, possible competition within the United States with the expiration of the Sharma patent, the timing of regulatory approvals of third-party vaccines for *in ovo* use outside the United States and Canada, costs associated with market expansion, possible variability in United States hatchery bird production as a result of grain price fluctuations, and variability in the demand for, and pricing of, U.S. poultry and poultry products both inside and outside the United States, will impact the pace of revenue growth, if any, and sustained profitability from the installation and operational throughputs of Inovoject® systems.

#### COST OF PRODUCT SALES AND INOVOJECT® REVENUES

Cost of revenues was 39% of total revenues in 2002 as compared to 41% and 43% of total revenues in 2001 and 2000, respectively. The improved gross margin, resulting from the cost of revenues decrease, in 2002 as compared to 2001 is partially due to continued operating efficiencies gained in the management of Inovoject® systems as well as non-operating other revenue with no associated cost of revenue. The improved gross margin in 2001 as compared to 2000 is due in part to operating efficiencies gained in the management of Inovoject® systems, a change in product mix that included increased sales of Inovoject® systems and Bursaplex®, the \$0.6 million audit adjustment charge taken in 2000 due to misappropriation at the Company's Embrex Europe subsidiary as well as non-operating other revenue that has no associated cost of revenue.

#### OPERATING EXPENSES

Operating expenses totaled \$19.3 million in 2002 compared to \$17.8 million in 2001, and \$15.1 million in 2000.

General and administrative ("G&A") expenses were \$6.6 million in 2002, down 7% from \$7.1 million in 2001 which was up 9% from \$6.5 million in 2000. The decrease in G&A expenses from 2001 to 2002 was principally due to accounting expenses related to the Embrex Europe investigation during 2001 and lower office rent due to renovating the new head office and vacating the old facility at the end of 2001. The 2001 increase from 2000 was primarily due to expenses related to investment in information system infrastructure to support the Company's deployment of enterprise resource planning software, facility lease payments and related operating expenses and the Embrex Europe investigation.

Sales and marketing expenses totaled \$2.5 million in 2002 compared to \$2.6 million in 2001 and \$1.9 million in 2000. The decrease from 2001 to 2002 was mainly attributable to the weakening of the Brazilian real and Argentine peso against the U.S. dollar. The increases between 2000 and 2001 resulted from expenses related to increased new business activity, support infrastructure for new markets and training programs for customer support personnel and the annualization of additional infrastructure implemented during 2000.

Research and development ("R&D") expenses were \$10.2 million in 2002 compared to \$8.1 million in 2001 and \$6.7 million in 2000. The increase in R&D expense over the last two years is principally due to additional development work on the Gender Sort project, and the coccidiosis and Newcastle disease *in ovo* vaccines. Additionally, expenses related to the Company's collaboration with Origen Therapeutics, Inc. added to the increase during 2002. The Company continues to manage its research and development effort to leverage its know-how, patent position, market presence and expenditures.

#### OTHER INCOME AND EXPENSE

Interest income totaled \$225,000, \$206,000, and \$180,000 in years 2002, 2001 and 2000, respectively. The increasing interest income from 2000 to 2002 resulted primarily from higher cash balances, which were primarily attributable to decreasing common stock repurchases (described below) during 2001 and 2002.

Interest expense totaled \$62,000 in 2002 compared to \$21,000 in 2001 and \$80,000 in 2000. The increase in interest expense during 2002 reflects commitment fees on the Company's \$6.0 million line of credit and accruals for unpaid sales taxes. In 2001, the decrease from 2000 was primarily due to not utilizing the Company's line of credit and the reduction in outstanding capital equipment leases. These leases were fully paid during 2001 and the Company currently has no capital leases on its balance sheet. Management expects to continue to rely principally on the use of internally generated funds to finance the cost of additional Inovoject® systems in 2003, as was the case in 2002.

## CRITICAL ACCOUNTING POLICIES

The Company's significant accounting policies are described in Note 1 to the consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States. The preparation of these financial statements requires the Company to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses and related disclosure of contingent assets and liabilities. On an on-going basis, the Company evaluates its estimates including but not limited to those related to:

- Accounts receivable
- Warranties
- Inventory obsolescence
- Deferred tax assets

The Company bases its estimates on historical experience and on various other assumptions that are believed to be reasonable under the circumstances, the results of which form the basis of making judgments about carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

The Company believes the following critical accounting policies are material to the preparation of its consolidated financial statements.

### Accounts Receivable

To date, the Company has not experienced any material accounts receivable collection issues. However, based on a review of cumulative balances, industry experience and the current economic environment, the Company currently reserves from 2% to 4% of accounts receivable, depending on whether the receivable is denominated in U.S. dollars or a foreign currency, of our outstanding trade accounts receivable balance as an allowance for uncollectible accounts. The consolidated balance for uncollectible accounts as of December 31, 2002 was \$247,000.

### Warranties

To date, the Company has not experienced nor does it expect to experience any material Inovoject® system or product warranty issues in excess of amounts reserved. Based on sales of Inovoject® systems and products the Company has established a reserve for future claims. The consolidated balance for warranties as of December 31, 2002 was \$267,000.

### Inventory Obsolescence

To date, the Company has not experienced any material inventory obsolescence. However, based on a percentage of the current product and Inovoject® part inventory levels the Company has established a reserve against future Inovoject® parts obsolescence due to technological improvements and limited shelf life of product inventories. The consolidated balance for product and parts obsolescence as of December 31, 2002 was \$224,000.

### Deferred tax assets

The Company records deferred tax assets to amounts that are likely to be realized. Based on the Company's recent profitability and belief that 2003 will result in an overall profit, the Company has recorded deferred tax assets of \$300,000. In the event the Company were to determine that it would be able to realize its deferred tax assets in the future in excess of its net recorded amount, an adjustment to the deferred tax assets would increase income in the

period such determination was made. However, in the event the Company were to determine that it would not be able to realize its net recorded deferred tax asset in the future, an adjustment to the deferred tax asset would decrease income in the period such determination was made.

#### EFFECT OF INFLATION

Management expects cost of product sales and Inovoject® systems revenues, operating expenses and capital equipment costs to change in line with periodic inflationary changes in price levels. While management generally believes that the Company will be able to offset the effect of price level changes by adjusting selling/lease prices and effecting operating efficiencies, any material unfavorable changes in price levels could have a material adverse affect on its results of operations.

#### LIQUIDITY AND CAPITAL RESOURCES

At December 31, 2002, the Company's cash and cash equivalents balances totaled \$8.0 million compared to \$3.9 million and \$3.0 million at December 31, 2001 and 2000, respectively. The increase from 2001 to 2002 is due to a \$2.4 million decrease in the Company's stock repurchases, the 2001 investment in Embrex Iberica, Embrex's subsidiary in Spain, and the financing of Advanced Automation, Inc. for work on the Gender Sort device under a Credit Agreement signed during the third quarter of 2001, along with a \$1.3 million decrease in fixed asset purchases during 2002 as compared with 2001. The increase from 2000 to 2001 reflects a change in the amount of the Company's stock repurchases during 2001. Working capital increased to \$14.0 million from \$9.7 million in 2001.

During 2002, operating activities generated \$11.9 million in cash, primarily due to net income and non-cash depreciation. For investing activities, Inovoject® systems purchases and other capital expenditures required \$5.9 million and \$2.5 million was used for the investment in product related patents, additional financing of Advanced Automation, Inc. and the purchase of land for construction of the Company's biological manufacturing facility in Laurinburg, North Carolina. Financing activities provided \$1.2 million primarily due to \$2.0 million received for issuance of common stock, substantially all of which was issued in connection with the exercise of stock options during 2002. The issuance of common stock was partially offset by common stock repurchases of \$0.8 million (see below).

In October 1998, the Company announced that the Board of Directors authorized a share repurchase program (the "1998 Repurchase Program") to purchase up to 10% of outstanding shares of Common Stock, or up to approximately 830,000 shares over 18 months, in open market or privately negotiated transactions. During the second quarter of 2000, Management was authorized by the Board of Directors to extend the stock repurchase program (the "2000 Repurchase Program"). This extension allowed for the purchase up to 6% of outstanding shares, or up to approximately 500,000 shares over 18 months in open market or privately negotiated transactions. During 2001, the Company repurchased 201,216 shares of its Common Stock for \$3.2 million at an average price of \$16.00 per share under the 2000 Repurchase Program, which ended during the fourth quarter of 2001. During the entire term of the 1998 Repurchase Program, the Company repurchased 830,000 shares of its Common Stock for \$9.0 million at an average price of \$10.80 per share. During the entire term of the 2000 Repurchase Program, the Company repurchased 345,216 shares of its Common Stock for \$5.2 million at an average price of \$15.08 per share.

In August 2002, the Company announced that the Board of Directors authorized a share repurchase program (the "2002 Repurchase Program") to purchase up to 6% of outstanding shares of Common Stock, or up to approximately 500,000 shares over 17 months, in open market or privately negotiated transactions. During the third and fourth quarters of 2002, the Company purchased 66,500 shares of its Common Stock for \$0.8 million at an average price of \$11.88 per share. See "Notes to Consolidated Financial Statements."

The Company has a \$6.0 million secured revolving line of credit with its bank, Branch Banking and Trust Company, which may be used for working capital purposes. The Company anticipates that this line of credit will be renewed when it expires in April 2003. At December 31, 2002, there were no outstanding borrowings under this credit facility.

Based on its current operations, management believes that the Company's available cash and cash equivalents, together with cash flow from operations, external funds for R&D projects and its bank line of credit, will be sufficient to meet its cash requirements as these currently exist, but may continue to explore additional alternative funding opportunities with respect to collaborative ventures and new product development and construction of Embrex's biological manufacturing facility.

#### CONTRACTUAL OBLIGATIONS

Embrex's known contractual obligations as of December 31, 2002 are summarized below:

Contractual Obligations	Payments due by period (thousands of dollars)				
	Total	Less than 1 year	1-3 years	3-5 years	More than 5 years
Operating Lease Obligations	\$2,672	\$810	\$1,632	\$230	-0-
Purchase Obligations	3,637	3,637	-0-	-0-	-0-
Total	\$6,309	\$4,447	\$1,632	\$230	-0-

#### OFF-BALANCE SHEET ARRANGEMENTS

The Company does not have any off-balance sheet arrangements that may have a current or future material effect on the registrant's financial condition, changes in financial condition, revenues or expenses, results of operations, liquidity, capital expenditures or capital resources.

#### FORWARD-LOOKING STATEMENTS

Information set forth in this Annual Report on Form 10-K contains various "forward looking statements" within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. These statements represent the Company's judgment concerning the future and are subject to risks and uncertainties that could cause the Company's actual operating results and financial position to differ materially. Such forward looking statements can be identified by the use of forward looking terminology such as "may," "will," "expect," "plan," "intend," "target," "anticipate," "estimate," "believe," or "continue," or the negative thereof or other variations thereof or comparable terminology.

The Company cautions that any such forward-looking statements include statements with respect to future products, services, markets and financial results. These statements involve risks and uncertainties that could cause actual results to differ materially. Risks include without limitation the degree of growth in the poultry industry in the U.S. and globally, market acceptance and cost of expansion in new geographic markets and with new products, including the Company's ability to penetrate new markets and the degree of market acceptance of new products, the outcome of the Company's patent litigation appeal and litigation against Fort Dodge, the complete commercial development of potential future products on a cost effective basis and the ability to obtain regulatory approval of products. Such approval is dependent upon a number of factors, such as results of trials, the discretion of regulatory officials, and potential changes in regulations. Additional information on these risks and other factors which could affect the Company's consolidated financial results are included in the Risk Factors described in Exhibit 99 to this report and in the Company's other filings with the Securities and Exchange Commission, including the Company's Forms 10-Q, 10-K and 8-K.

#### ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Market risk is the risk of potential loss arising from adverse changes in market rates and prices. The Company's primary market risk exposure is in changes in foreign currency exchange rates. Approximately 31%, 31% and 29% of Embrex's revenues for the years ended 2002, 2001, and 2000, respectively, were derived from our operations outside the United States. Our consolidated financial statements are denominated in U.S. dollars and, accordingly, changes in the exchange rates between foreign currencies and the U.S. dollar will affect the translation of our subsidiaries' financial results into U.S. dollars for purposes of reporting our consolidated financial results. During

2002, selected Latin American currencies weakened against the U.S. dollar compared to the same period during 2001. If average exchange rates during 2002 had remained the same as the average exchange rates for these currencies during the same period of 2001, then the Company's 2002 revenues would have been \$45.8 million instead of \$45.3 million representing a year-to-year growth rate of 3% as compared to the actual exchange-adjusted growth rate of 1%.

Accumulated currency translation adjustments recorded as a separate component (reduction) of shareholders' equity were (\$506,000) at December 31, 2002 as compared with (\$329,000) at December 31, 2001. This \$0.2 million change was mainly attributable to the devaluation of the Argentine peso at the beginning of 2002. However, aside from this initial adjustment due to the currency devaluation in Argentina, Embrex's most significant foreign currency exchange rate exposure is in the British pound. To date, the Company has not utilized any derivatives or other hedging instruments to affect this exposure.

## ITEM 8. CONSOLIDATED FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

### REPORT OF INDEPENDENT AUDITORS

The Board of Directors and Shareholders Embrex Inc.

We have audited the accompanying consolidated balance sheets of Embrex, Inc. and Subsidiaries as of December 31, 2002 and 2001, and the related consolidated statements of operations, shareholders' equity, and cash flows for each of the three years in the period ended December 31, 2002. Our audits also included the financial statement schedule listed in the Index to Embrex's Form 10-K at Item 15(a)(2). These financial statements and schedule are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements and schedule based on our audits.

We conducted our audits in accordance with auditing standards generally accepted in the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the consolidated financial position of Embrex, Inc. and Subsidiaries at December 31, 2002 and 2001, and the consolidated results of their operations and their cash flows for each of the three years in the period ended December 31, 2002, in conformity with accounting principles generally accepted in the United States. Also, in our opinion, the related financial statement schedule when considered in relation to the basic financial statements taken as a whole, presents fairly in all material respects the information set forth therein.

/s/ Ernst & Young LLP

Raleigh, North Carolina  
February 14, 2003

**CONSOLIDATED BALANCE SHEETS**  
(Dollars in thousands)

	<u>December 31,</u>	
	<u>2002</u>	<u>2001</u>
<b>ASSETS</b>		
Current Assets		
Cash and cash equivalents	\$8,039	\$3,907
Restricted cash (Note 2)	255	275
Accounts receivable – trade (net of allowance of \$247 and \$171 in 2002 and 2001, respectively)	6,565	7,128
Inventories:		
Materials and supplies	1,603	1,361
Product	937	900
Other current assets	1,409	800
Total Current Assets	<u>18,808</u>	<u>14,371</u>
Land	129	-0-
Inovoject® Systems under construction	1,651	1,560
Inovoject® Systems	34,825	32,555
Less accumulated depreciation	<u>(27,162)</u>	<u>(24,754)</u>
	7,663	7,801
Equipment, furniture and fixtures	14,942	12,123
Less accumulated depreciation	<u>(5,781)</u>	<u>(4,172)</u>
	9,161	7,951
Other Assets:		
Patents, goodwill and exclusive licenses of patentable technology (net of accumulated amortization of \$275 in 2002 and \$144 in 2001)	2,158	752
Other long-term assets (Note 1 and Note 9)	2,443	1,623
Total Other Assets	<u>4,601</u>	<u>2,375</u>
<b>TOTAL ASSETS</b>	<u>\$42,013</u>	<u>\$34,058</u>
<b>LIABILITIES AND SHAREHOLDERS' EQUITY</b>		
Current Liabilities		
Accounts payable	\$755	\$1,210
Accrued expenses	3,742	3,245
Deferred revenue	39	28
Product warranty accrual	267	218
Total Current Liabilities	<u>4,803</u>	<u>4,701</u>
Long-term debt, less current portion (Note 4).....	46	43
Shareholders' Equity (Notes 5, 6 and 7)		
Common Stock, \$.01 par value per share authorized 30,000,000 shares issued and outstanding – 8,162,362 net of 1,241,716 treasury shares and 7,998,168 net of 1,175,216 treasury shares at December 31, 2002 and 2001, respectively	93	90
Additional paid-in capital	61,895	59,932
Accumulated other comprehensive loss	(1,273)	(776)
Accumulated deficit	(8,559)	(15,730)
Treasury stock	<u>(14,992)</u>	<u>(14,202)</u>
Total Shareholders' Equity	<u>37,164</u>	<u>29,314</u>
<b>TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY</b>	<u>\$42,013</u>	<u>\$34,058</u>

See accompanying notes.

## CONSOLIDATED STATEMENTS OF OPERATIONS

(In thousands, except per share amounts)

	<u>Year ended December 31,</u>		
	<u>2002</u>	<u>2001</u>	<u>2000</u>
<b>REVENUES</b>			
Inovoject® revenue	\$40,160	\$39,719	\$36,189
Product revenue	3,079	3,379	2,332
Other revenue	2,086	1,562	275
	<hr/>	<hr/>	<hr/>
Total Revenues	45,325	44,660	38,796
Cost of Product Sales and Inovoject® Revenues	<hr/>	<hr/>	<hr/>
	17,558	18,124	16,770
	<hr/>	<hr/>	<hr/>
	27,767	26,536	22,026
<b>OPERATING EXPENSES</b>			
General and administrative	6,571	7,053	6,474
Sales and marketing	2,536	2,628	1,867
Research and development	10,162	8,120	6,725
	<hr/>	<hr/>	<hr/>
Total Operating Expenses	19,269	17,801	15,066
Operating Income	<hr/>	<hr/>	<hr/>
	8,498	8,735	6,960
Other Income (Expense)			
Interest income	225	206	180
Interest expense	(62)	(21)	(80)
Other	(41)	21	78
	<hr/>	<hr/>	<hr/>
Total Other Income	122	206	178
Income Before Taxes	<hr/>	<hr/>	<hr/>
	8,620	8,941	7,138
Income Taxes (Note 9)	<hr/>	<hr/>	<hr/>
	1,449	974	507
Net Income	<hr/>	<hr/>	<hr/>
	\$7,171	\$7,967	\$6,631
Net Income per share of Common Stock (Note 11)			
Basic	\$0.88	\$1.00	\$0.84
Diluted	\$0.82	\$0.92	\$0.77
Number of Shares Used in Per Share Calculation (Note 11)			
Basic	8,116	8,007	7,901
Diluted	8,692	8,644	8,639

See accompanying notes.

## CONSOLIDATED STATEMENTS OF CASH FLOWS

(Dollars in thousands)

Year ended December 31,

	<u>2002</u>	<u>2001</u>	<u>2000</u>
<b>Operating Activities</b>			
Net income	\$7,171	\$7,967	\$6,631
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	4,878	4,448	4,289
Loss on fixed asset disposal	7	238	-0-
Changes in operating assets and liabilities:			
Accounts receivable, inventories and other current assets	(324)	(1,663)	(564)
Accounts payable, accrued expenses and other current liabilities	121	652	(205)
<b>NET CASH PROVIDED BY OPERATING ACTIVITIES</b>	<u>11,853</u>	<u>11,642</u>	<u>10,151</u>
<b>Investing Activities</b>			
Land acquisition	(129)	-0-	-0-
Purchases of Inovoject® systems, equipment, furniture and fixtures	(5,921)	(7,211)	(6,167)
(Additions) reductions to patents and other noncurrent assets	(2,353)	(2,159)	72
<b>NET CASH USED IN INVESTING ACTIVITIES</b>	<u>(8,403)</u>	<u>(9,370)</u>	<u>(6,095)</u>
<b>Financing Activities</b>			
Issuance of Common Stock	1,966	2,234	2,473
Net changes in line of credit	-0-	-0-	(356)
Net payments on capital lease obligations	3	(17)	(528)
Repurchase of Common Stock	(790)	(3,219)	(6,994)
<b>NET CASH PROVIDED BY (USED IN) FINANCING ACTIVITIES</b>	<u>1,179</u>	<u>(1,002)</u>	<u>(5,405)</u>
<b>INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS</b>	<u>4,629</u>	<u>1,270</u>	<u>(1,349)</u>
<b>CURRENCY TRANSLATION ADJUSTMENTS</b>	<u>(497)</u>	<u>(329)</u>	<u>(484)</u>
<b>CASH AND CASH EQUIVALENTS AT BEGINNING OF PERIOD</b>	<u>3,907</u>	<u>2,966</u>	<u>4,799</u>
<b>CASH AND CASH EQUIVALENTS AT END OF PERIOD</b>	<u>\$8,039</u>	<u>\$3,907</u>	<u>\$2,966</u>

### SUPPLEMENTAL DISCLOSURES OF CASH FLOW INFORMATION:

Total interest paid was \$62, \$21 and \$80 for the years ended December 31, 2002, 2001, and 2000, respectively.

Total income taxes paid were \$2,337, \$955 and \$582 for the years ended December 31, 2002, 2001, and 2000, respectively.

See accompanying notes.

## CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY

(Dollars in thousands)

	Common Stock	Additional Paid-in Capital	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Treasury Stock	Total
BALANCE AT JANUARY 1, 2000	\$84	\$55,231	\$37	(\$30,328)	(\$3,989)	\$21,03
Stock repurchased					(6,994)	(6,994)
Stock issued:						
Upon exercise of options	3	1,912				1,915
Under employee stock purchase plan		198				198
Upon exercise of warrants	1	99				100
Employee compensation		260				260
Other comprehensive income, net of tax (Note 1):						
Currency translation adjustments			(484)			(484)
Net income				6,631		6,631
Comprehensive income				6,631		6,147
BALANCE AT DECEMBER 31, 2000	\$88	\$57,700	(\$447)	(\$23,697)	(\$10,983)	\$22,661
Stock repurchased					(3,219)	(3,219)
Stock issued:						
Upon exercise of options	2	1,640				1,642
Under employee stock purchase plan		162				162
Upon exercise of warrants		108				108
Employee compensation		322				322
Other comprehensive income, net of tax (Note 1):						
Currency translation adjustments			(329)			(329)
Net income				7,967		7,967
Comprehensive income				7,967		7,638
BALANCE AT DECEMBER 31, 2001	\$90	\$59,932	(\$776)	(\$15,730)	(\$14,202)	\$29,314
Stock repurchased					(790)	(790)
Stock issued:						
Upon exercise of options and issuance of bonus stock	3	1,662				1,665
Under employee stock purchase plan		301				301
Other comprehensive income, net of tax (Note 1):						
Currency translation adjustments			(497)			(497)
Net income				7,171		7,171
Comprehensive income				7,171		6,674
BALANCE AT DECEMBER 31, 2002	\$93	\$61,895	(\$1,273)	(\$8,559)	(\$14,992)	\$37,164

See accompanying notes.

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

### 1. SIGNIFICANT ACCOUNTING POLICIES

#### NATURE OF BUSINESS

Embrex, Inc. is an international agricultural biotechnology company specializing in the poultry industry. Embrex is focused on developing patented biological and mechanical products that improve bird health, help reduce production costs and provide other economic benefits to the poultry industry. Embrex has developed and commercialized the Inovoject® system, a proprietary, automated in-the-egg injection system which can inoculate 20,000 to 50,000 eggs per hour and eliminates the need for manual, post-hatch injection of certain vaccines. The Company also markets the Vaccine Saver® option and Egg Remover™ module to provide additional automation benefits to the poultry hatchery. In addition, Embrex has developed and is marketing its VNF® technology, useful in the development of certain avian vaccines. The Company also has developed and is marketing Bursaplex®, a VNF®-based vaccine for protection against avian infectious bursal disease ("IBD").

#### PRINCIPLES OF CONSOLIDATION

The consolidated financial statements include the accounts of Embrex, Inc. and its wholly owned subsidiaries, Embrex Europe Limited, Embrex France s.a.s., Embrex Iberica, Embrex BioTech Trade (Shanghai) Co., Ltd. and Inovoject do Brasil Ltda. (the "Company"). All significant intercompany transactions and accounts have been eliminated. Currently, non-U.S. operations account for approximately 31% of the Company's revenues.

#### CASH AND CASH EQUIVALENTS

The Company considers all highly liquid investments with a maturity of three months or less when purchased to be cash and cash equivalents.

#### FAIR VALUE OF FINANCIAL INSTRUMENTS

The carrying value of cash and cash equivalents, accounts receivable and current liabilities approximate fair values at December 31, 2002.

#### INVENTORIES

Items recorded as inventory are generally purchased from others and recorded at the lower of cost or market using the average cost method. Materials and supplies inventories include spare parts for the Inovoject® systems as well as laboratory and general supplies. Product inventories are comprised of biological compounds, principally the Company's VNF® technology and Bursaplex®.

#### INOVOJECT® SYSTEMS

Inovoject® systems are comprised of egg injection and related equipment, including the Vaccine Saver® option and Egg Remover™, available for lease to customers. The equipment is recorded at the lower of cost or estimated net realizable value. Depreciation is computed principally by using accelerated and straight-line methods over the estimated useful life of the equipment and commences after construction is complete and the equipment is placed in service.

#### EQUIPMENT, FURNITURE AND FIXTURES

Equipment, furniture and fixtures are recorded at cost. Depreciation is computed principally by using accelerated and straight-line methods over the estimated useful lives of the assets placed in service, generally three-to-five years. The Company's total depreciation expense for 2002, 2001 and 2000 including Inovoject Systems and Equipment, Furniture and Fixtures was \$4.8 million, \$4.4 million and \$4.3 million, respectively.

## **PATENTS AND EXCLUSIVE LICENSES OF PATENTABLE TECHNOLOGY**

Costs incurred to acquire exclusive licenses of U.S. patentable technology and to apply for and obtain U.S. patents on internally developed technology are capitalized and amortized using the straight-line method. Exclusive license agreements are amortized over the period of the license. Patents are amortized over the shorter of the useful or legal life of the patent. The Company's total amortization expense of intangible assets for 2002 and 2001 was \$0.1 million and \$0.1 million, respectively. The balance sheet increase in 2002 includes the acquisition costs of an exclusive worldwide license from Pfizer Inc. to all pending patents relating to *in ovo* poultry coccidiosis vaccines.

## **OTHER LONG-TERM ASSETS**

In 2001 other long-term assets included a loan asset with Advanced Automation, Inc. This loan matures at the end of April of 2003. This loan balance will increase in accordance with expenses incurred in pursuit of the Development Program established between Embrex and Advanced Automation. Simple interest accrues on the loan and is included in the loan balance. Upon the loan's expiration, it will be repaid to Embrex based on a schedule to be mutually agreed between Embrex and Advanced Automation.

## **FOREIGN CURRENCY TRANSLATION**

All assets and liabilities in the balance sheets of the Company's foreign subsidiaries, Embrex Europe Limited, Embrex France s.a.s., Embrex Iberica, Embrex BioTech Trade (Shanghai) Co., Ltd. and Inovoject do Brasil Ltda, are translated at year-end exchange rates except shareholders' equity which is translated at historical rates. Revenues, costs and expenses are recorded at average rates of exchange during the year. Translation gains and losses are accumulated as a component of shareholders' equity. Foreign currency transaction gains and losses are included in determining net income in the other income/expense line item.

## **REVENUE RECOGNITION**

Inovoject® system fees are recognized based on eggs processed during the period. Inovoject® system and product sales are recognized upon delivery. Contract research revenue is recognized as services are performed or as milestones are met over the term of the contract. Grant revenue is recognized as expenses related to the specific grants are incurred. Revenue received, but not yet earned, is classified as deferred revenue.

## **OTHER REVENUE**

Other revenue includes income derived from contract research, grants from federal agencies, miscellaneous but minor product sales and other miscellaneous sources.

## **RESEARCH AND DEVELOPMENT COSTS**

Research and development costs, including costs incurred to complete contract research, are charged to operations when incurred and are included in operating expenses.

## **INCOME TAXES**

The Company accounts for income taxes under the provisions of Statement of Financial Accounting Standards No. 109, "Accounting for Income Taxes" (SFAS 109). SFAS 109 requires recognition of deferred tax assets and liabilities for the expected future tax consequences of temporary basis differences that have arisen between financial statement and income tax reporting.

## **NET INCOME PER SHARE**

Basic net income per share was determined by dividing net income available for common shareholders by the weighted average number of common shares outstanding during each year. Diluted net income per share reflects the potential dilution that could occur assuming conversion or exercise of all convertible securities and issued and

unexercised stock options. A reconciliation of the net income available for common shareholders and number of shares used in computing basic and diluted net income per share is in Note 11.

#### USE OF ESTIMATES

The presentation of financial statements in conformity with accounting principles generally accepted in the United States requires management to make estimates and assumptions that affect the amounts reported in the consolidated financial statements and accompanying notes. Actual results could differ from these estimates.

#### PRINCIPAL CUSTOMERS

Tyson Foods, Inc. ("Tyson") accounted for approximately 19%, 20% and 21% of consolidated 2002, 2001 and 2000 revenues, respectively. Based on the millions of pounds of ready-to-eat poultry meat produced in 2002, Tyson accounted for approximately 22% of the broilers grown in the United States. In 2002, Tyson was the only customer that represented greater than 10% of total revenues.

#### CONCENTRATION OF CREDIT RISK

The Company's principal financial instrument, subject to potential concentration of credit risk, is accounts receivables which are unsecured. As of December 31, 2002, I.P. Tsusho Co., Ltd. accounted for approximately 17% and Tyson Foods, Inc. accounted for approximately 15% of consolidated accounts receivable. Substantially all of the Company's accounts receivables are due from companies in the poultry industry.

#### SOURCES OF SUPPLY

The Company has developed a strategic relationship with one contract manufacturer to fabricate its Inovoject® systems. While other machine fabricators exist and have constructed limited numbers of Inovoject® systems, a change in fabricators could cause a delay in manufacturing and a possible delay in the timing of future Inovoject® installations and revenues from those installations.

The Company has granted Merial Select, Inc. ("Select") (a Merck and Aventis company) exclusive rights to manufacture, in the United States, IBD vaccines containing Embrex's proprietary VNF® product for Embrex to market in North America, Latin America and Asia under the trade name Bursaplex®. Embrex granted Cyanamid Websters, a unit of Fort Dodge Animal Health, which is a division of Wyeth (formerly American Home Products Corp.) ("Fort Dodge"), rights to manufacture and market bursal disease vaccines containing the Company's VNF® product to be marketed in Europe, the Middle East and Africa under the trade name Bursamune®. However in 2001, Fort Dodge indicated to Embrex that it does not intend to continue marketing Bursamune® and does not intend to seek further regulatory approvals. Abic Ltd. has been granted similar rights to manufacture and market an IBD vaccine, known as GuMBryo(TM), in Israel. Additionally, the Company has one contract supplier of its VNF® product. The manufacture of the bursal disease vaccines being produced by Select and Abic and the Company's VNF® product generally must be performed in licensed facilities and/or under methods approved by regulatory agencies. Although there are other manufacturers who are capable of manufacturing bursal disease products and producing products such as VNF®, a change of suppliers could adversely affect the Company's future operating results due to the time it would take a new supplier to obtain regulatory approval of its production process and/or manufacturing facilities. The Company seeks to minimize this exposure through multi-year supply agreements and the maintenance of adequate inventories.

#### COMPREHENSIVE INCOME

In June 1997, the FASB issued Statement No. 130, Reporting Comprehensive Income (SFAS 130). This Statement establishes standards for reporting and display of comprehensive income and its components in the consolidated financial statements. In accordance with SFAS 130, the Company has determined total comprehensive income, net of tax, to be \$6.7 million, \$7.6 million and \$6.1 million for the years ended December 31, 2002, 2001, and 2000, respectively. Embrex's total comprehensive income represents net income plus the after-tax effect of foreign currency translation adjustments for the years presented.

## SEGMENTS

The Company operates in a single segment. The table below presents the Company's operations by geographic area: (Dollars in thousands)

	2002	2001	2000
Net Revenue:			
United States	\$31,217	\$30,959	\$27,591
International	14,108	13,701	11,205
Total Assets:			
United States	\$31,570	\$23,230	\$17,168
International	10,443	10,828	9,602

## IMPACT OF RECENTLY ISSUED ACCOUNTING STANDARDS

In July 2001, the FASB issued Statement No. 142, "Goodwill and Other Intangible Assets" (SFAS No. 142). This statement eliminates the amortization of goodwill, requires annual impairment testing of goodwill and introduces the concept of indefinite life intangible assets. The new rules also prohibit the amortization of goodwill associated with business combinations that close after June 30, 2001. On January 1, 2002 the Company adopted this statement and it did not have a material effect on the consolidated financial statements.

In June 2001, the FASB approved Statement No. 143, "Accounting for Asset Retirement Obligations". The statement addresses financial accounting and reporting for legal obligations associated with the retirement of tangible long-lived assets and the associated asset retirement costs. The statement is effective for the 2003 fiscal year and is not expected to have a material effect on the Company's financial position or results of operations.

On January 1, 2002, the Company adopted Statement No. 144, "Accounting for the Impairment or Disposal of Long-Lived Assets" (SFAS No. 144). SFAS No. 144 addresses significant issues relating to the implementation of SFAS No. 121, "Accounting for the Impairment of Long-Lived Assets and Long-Lived Assets to Be Disposed Of," and develops a single accounting model, based on the framework established in SFAS No. 121 for long-lived assets to be disposed of by sale, whether such assets are or are not deemed to be a business. SFAS No. 144 also modifies the accounting and disclosure rules for discontinued operations. The adoption of this statement did not have a material effect on the consolidated financial statements.

In April 2002, the FASB issued Statement 145, "Rescission of FASB Statements Nos. 4, 44, and 64, Amendment of FASB Statement No. 13, and Technical Corrections". SFAS No. 145 has a May 15, 2002, effective date. SFAS No. 145 rescinds SFAS No. 4, "Reporting Gains and Losses from Extinguishment of Debt", and SFAS No. 64, "Extinguishments of Debt Made to Satisfy Sinking-Fund Requirements". Accordingly, a gain or loss from a debt extinguishment should not be classified as an extraordinary item unless it meets the criteria for extraordinary item classification in APB Opinion No. 30, "Reporting the Results of Operations—Reporting the Effects of Disposal of a Segment of a Business, and Extraordinary, Unusual and Infrequently Occurring Events and Transactions". The adoption of this statement did not have a material effect on the consolidated financial statements.

In June 2002, the FASB approved for issuance Statement No. 146, "Accounting for Costs Associated with Exit or Disposal Activities". This statement provides financial accounting and reporting guidance for costs associated with exit or disposal activities and nullifies EITF Issue 94-3, "Liability Recognition for Certain Employee Termination Benefits and Other Costs to Exit an Activity (including Certain Costs Incurred in a Restructuring)". SFAS No. 146 is effective for exit or disposal activities initiated after December 31, 2002. Early application is encouraged. Previously issued financial statements should not be restated. The provisions of EITF Issue 94-3 continue to apply for an exit activity initiated under an exit plan that met the criteria in EITF Issue 94-3 before SFAS No. 146 initial application. Management believes the implementation of this statement will not have a material effect upon the Company's consolidated financial statements.

In December 2002, the FASB issued Statement No. 148, "Accounting for Stock-Based Compensation – Transition and Disclosure". This statement amends SFAS No. 123, "Accounting for Stock-Based Compensation", to provide alternative methods of transition to SFAS No. 123's fair value method of accounting for stock-based employee

compensation. SFAS No. 148 also amends the disclosure provisions in SFAS No. 123 and APB Opinion No. 28, "Interim Financial Reporting", to require disclosure in the summary of significant accounting policies of the effects of an entity's accounting policy with respect to stock-based employee compensation on reported net income and earnings per share in annual and interim consolidated financial statements. The adoption of the disclosure only requirements of SFAS No. 148 did not have a significant impact on the Company's consolidated financial statements.

The Company accounts for the Plans under the recognition and measurement principles of Accounting Principles Board Opinion No. 25, "Accounting for Stock Issued to Employees" (APB 25) and related Interpretations. No stock-based employee compensation cost is reflected in net income, as all options granted under the Plans had an exercise price equal to the market value of the underlying common stock of the date of grant. The following table illustrates the effect on net income and earnings per share if the Company had applied the fair value recognition provisions of FASB Statement No. 123, "Accounting for Stock-Based Compensation" (SFAS 123) (in thousands, except per share amounts):

	Year Ended December 31		
	<u>2002</u>	<u>2001</u>	<u>2000</u>
Net income, as reported	\$7,171	\$7,967	\$6,631
Deduct: Total stock-based compensation expense determined under fair value based method for all awards, net of related tax effects	<u>(1,742)</u>	<u>(1,755)</u>	<u>(1,529)</u>
Pro forma net income	<u>\$5,429</u>	<u>\$6,212</u>	<u>\$5,102</u>
Earnings per share:			
Basic—as reported	<u>\$0.88</u>	<u>\$1.00</u>	<u>\$0.84</u>
Basic—pro forma	<u>\$0.67</u>	<u>\$0.78</u>	<u>\$0.65</u>
Diluted—as reported	<u>\$0.82</u>	<u>\$0.92</u>	<u>\$0.77</u>
Diluted—pro forma	<u>\$0.62</u>	<u>\$0.72</u>	<u>\$0.59</u>

The Company computes fair value for purposes of SFAS 123 using the Black-Scholes option pricing model. The weighted-average assumptions used in this model to estimate fair value and resulting values are as follows:

	Stock Option Plans			ESPP		
	<u>2002</u>	<u>2001</u>	<u>2000</u>	<u>2002</u>	<u>2001</u>	<u>2000</u>
Expected dividend yield	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Risk-free interest rate	3.9%	5.0%	6.6%	1.9%	3.6%	6.2%
Expected volatility	50.0%	42.0%	50.0%	50.0%	42.0%	50.0%
Expected life (in years)	4.0	4.0	4.0	0.5	0.5	0.5
Weighted-average fair value per share	\$7.60	\$6.16	\$6.85	\$5.55	\$4.28	\$4.09

The Black-Scholes option valuation model was developed for use in estimating the fair value of traded options, which have no vesting restrictions and are fully transferable. In addition, option valuation models require the input of highly subjective assumptions including the expected stock price volatility. Because changes in the subjective input assumptions can materially affect the fair value estimate, in management's opinion, the existing models do not necessarily provide a reliable single measure of the fair value of the awards granted under the Plans.

## 2. RESTRICTED CASH

On October 13, 1997, the Company executed a ten-year collateralized lease relative to the facilities housing the Company's research facility. Such collateral exists in the form of a certificate of deposit, which is required to be maintained at least through the end of the seventh year of the lease.

### 3. LEASES

At December 31, 2002 and 2001, the Company had no assets financed by capital lease agreements.

The Company leases its facilities under a number of operating leases extending through November 2007. The Company has the option to cancel one of its operating lease agreements with the payment of a \$0.2 million penalty. Total rent expense was \$0.9 million, \$1.0 million and \$0.8 million for the years ended December 31, 2002, 2001, and 2000, respectively. The lease on the Company's corporate headquarters has an initial six-year term expiring 2005 with annual rent increases of approximately 3% and an additional six-year optional renewal term with annual rent increases of approximately 4%. In addition, the lease at Embrex's research facility is a 10-year term expiring in November 2007, with a five-year renewal option and annual increases of approximately 3% through the first 10 years and approximately 4% during the five-year renewal term.

At December 31, 2002, the Company's minimum future commitments under operating leases were as follows:

	<u>Operating Leases</u>
2003	\$ 810,000
2004	795,000
2005	637,000
2006	200,000
Thereafter	<u>230,000</u>
Total	<u>\$2,672,000</u>

### 4. DEBT

The Company has a \$6.0 million secured revolving line of credit with its bank, Branch Banking and Trust Company, which may be used for working capital purposes. The Company anticipates that this line of credit will be renewed when it expires in April 2003. At December 31, 2002, there were no outstanding borrowings under this credit facility.

### 5. SHAREHOLDERS' EQUITY

At December 31, 2002, the Company had reserved a total of 2,670,441 shares of its Common Stock for future issuance as follows:

For exercise of Common Stock options and Bonus Stock .....	2,621,359
For possible future issuance to employees and others under employee stock purchase plans. ....	<u>49,082</u>
Total reserved .....	<u>2,670,441</u>

At December 31, 2002, the Company had no issued and outstanding warrants to purchase Common Stock.

In October 1998, the Company announced that the Board of Directors authorized a share repurchase program (the "1998 Repurchase Program") to purchase up to 10% of outstanding shares of Common Stock, or up to approximately 830,000 shares over 18 months, in open market or privately negotiated transactions. During the second quarter of 2000, Management was authorized by the Board of Directors to extend the stock repurchase program (the "2000 Repurchase Program"). This extension allowed for the purchase up to 6% of outstanding shares, or up to approximately 500,000 shares over 18 months in open market or privately negotiated transactions. During 2001, the Company repurchased 201,216 shares of its Common Stock for \$3.2 million at an average price of \$16.00 per share under the 2000 Repurchase Program, which ended during the fourth quarter of 2001. During the entire term of the 1998 Repurchase Program, the Company repurchased 830,000 shares of its Common Stock for

\$9.0 million at an average price of \$10.80 per share. During the entire term of the 2000 Repurchase Program, the Company repurchased 345,216 shares of its Common Stock for \$5.2 million at an average price of \$15.08 per share.

In August 2002, the Company announced that the Board of Directors authorized a share repurchase program (the "2002 Repurchase Program") to purchase up to 6% of outstanding shares of Common Stock, or up to approximately 500,000 shares over 17 months, in open market or privately negotiated transactions. During the third and fourth quarters of 2002, the Company purchased 66,500 shares of its Common Stock for \$0.8 million at an average price of \$11.88 per share.

## 6. STOCK OPTION PLANS

The Company's stock plans (the "Plans") are designed to provide incentives to eligible employees, officers, and directors in the form of stock, incentive stock options, and non-qualified stock options. As of December 31, 2002, a total of 2,621,359 shares of Common Stock have been reserved for issuance under the Plans. Of this amount, 1,026,600 shares are available for future stock-based awards.

Fully vested stock awards have been granted under the Plans to certain employees in lieu of a cash bonus of equivalent value. During the years ended December 31, 2002, 2001, and 2000, 12,629, 20,629, and 24,768 shares of Common Stock, respectively, were issued for this purpose. The corresponding share values and, therefore, compensation expense recognized on the applicable issue dates were \$227,196, \$322,328, and \$260,064 for the years ended December 31, 2002, 2001, and 2000, respectively.

Stock options generally vest and become exercisable over a four-year period and expire 10 years from the date of grant. In general, the exercise price of stock options is the closing price of the Company's Common Stock on the date of grant.

Stock option activity with respect to all of the Plans follows:

	Options Outstanding	Weighted-Average Exercise Price
Balance at December 31, 1999	1,400,030	\$ 5.75
Granted	407,328	10.82
Exercised	(354,692)	5.44
Canceled	<u>(80,996)</u>	7.37
Balance at December 31, 2000	1,371,670	\$ 7.15
Granted	399,058	15.61
Exercised	(277,027)	6.38
Canceled	<u>(15,947)</u>	10.13
Balance at December 31, 2001	1,477,754	\$ 9.40
Granted	365,471	17.94
Exercised	(182,583)	7.81
Canceled	<u>(65,883)</u>	14.77
Balance at December 31, 2002	<u>1,594,759</u>	\$ 11.31

Selected information regarding stock options as of December 31, 2002 follows:

Exercise Price	Options Outstanding			Options Currently Exercisable	
	Number Outstanding	Weighted-Average Remaining Contractual Life (yrs.)	Weighted Average Exercise Price	Number Exercisable	Weighted Average Exercise Price
\$ 4.84 – \$ 5.88	315,925	5.62	\$ 5.20	262,561	\$ 5.23
\$ 6.13 – \$ 8.38	335,600	3.29	\$ 6.55	335,600	\$ 6.55
\$10.50 – \$13.75	265,171	7.08	\$10.59	129,109	\$10.61
\$14.56 – \$16.00	336,498	8.15	\$15.61	103,452	\$15.60
\$16.56 – \$17.99	341,565	9.11	\$17.97	32,500	\$17.93
	<u>1,594,759</u>	6.65	\$11.31	<u>863,222</u>	\$ 8.27

#### 7. EMPLOYEE STOCK PURCHASE PLAN

The Company maintains an Employee Stock Purchase Plan for its U.S.-based employees (the "U.S. Purchase Plan") and a similar plan for its employees outside the U.S. (the "Non-U.S. Purchase Plan") to provide an additional opportunity for the Company's employees to share in the ownership of the Company. Under terms of both plans, all regular full-time employees of the Company (or the Company's subsidiaries) may make voluntary payroll contributions thereby enabling them to purchase Common Stock. Contributions are limited to 20% of an employee's compensation. As of December 31, 2002, a total of 200,000 shares of Common Stock have been reserved for issuance under the U.S. Purchase Plan. Of this amount, 49,082 shares are available for future purchases. Shares issued under the Non-U.S. Purchase Plan decrease the number of shares that may be issued under the U.S. Purchase Plan by a corresponding amount. Thus, the maximum number of shares that may be issued under both Purchase Plans together shall not exceed 200,000. The purchase price of the stock is the lesser of 85% of the Fair Market Value on the first business day of the Purchase Period or 85% of the Fair Market Value on the date of exercise, which can occur at any time during the Plan year, as determined by each participating employee.

Under the Purchase Plans, during 2002, 2001, and 2000, 22,739, 23,418 and 21,074 shares of Common Stock, respectively, were purchased.

#### 8. 401(k) RETIREMENT SAVINGS PLAN

The Company has a 401(k) plan which is available to all U.S. based employees upon employment who are at least 18 years of age. Employer contributions are voluntary at the discretion of the Company. The Company does not match any employee contributions with stock.

Company contributions amounted to \$321,791, \$274,361 and \$178,436 for the years ended December 31, 2002, 2001, and 2000, respectively.

#### 9. INCOME TAXES

The components of income tax expense for the years ended December 31 are as follows:

	2002	2001	2000
Current:			
Federal	\$702,000	\$601,000	\$154,000
State	335,000	90,000	77,000
Foreign	<u>712,000</u>	<u>283,000</u>	<u>276,000</u>
Total Current	1,749,000	974,000	507,000
Deferred	(300,000)	-0-	-0-
Total	<u>\$1,449,000</u>	<u>\$974,000</u>	<u>\$507,000</u>

The Company's consolidated effective tax rate differed from the statutory rate as set forth below for the years ended December 31:

	<u>2002</u>	<u>2001</u>	<u>2000</u>
Federal taxes at statutory rate	\$2,930,000	\$3,047,000	\$2,427,000
State and local income taxes, net of Federal benefit	489,000	448,000	286,000
Non-deductible expenses	(226,000)	199,000	(138,000)
Foreign losses for which no benefit has been recognized	372,000	156,000	203,000
Change in valuation allowance	(2,828,000)	(3,159,000)	(2,547,000)
Alternative minimum and foreign withholding taxes	<u>712,000</u>	<u>283,000</u>	<u>276,000</u>
	<u>\$1,449,000</u>	<u>\$974,000</u>	<u>\$507,000</u>

Deferred income taxes reflect the net effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. The tax effects of temporary differences and carryforwards that give rise to deferred tax assets and liabilities consist of the following:

	<u>At December 31,</u>	
	<u>2002</u>	<u>2001</u>
Deferred tax assets:		
Book under tax depreciation and amortization	(\$1,365,000)	(\$921,000)
Net operating loss carryforwards	-	2,431,000
Research and experimental tax credit carryforwards	3,036,000	2,952,000
Accrued liabilities and reserves	269,000	(21,000)
Alternative Minimum Tax credit carryforward	<u>323,000</u>	<u>350,000</u>
Total deferred tax assets	\$2,263,000	\$4,791,000
Valuation allowance for deferred tax assets	<u>(1,963,000)</u>	<u>(4,791,000)</u>
Net deferred tax assets	<u>\$300,000</u>	<u>\$ -0-</u>

During 2002, 2001 and 2000, the valuation allowance decreased by \$2,828,000, \$3,159,000 and \$2,547,000, respectively.

The deferred tax asset is included under other long-term assets on the consolidated balance sheet.

In addition, the Company has research and experimental tax credit carryforwards totaling approximately \$3.0 million which are available to offset future federal income taxes. These credits expire during the years 2003 through 2017.

Net operating losses in foreign subsidiaries have been fully reserved as of December 31, 2002.

#### 10. COMMITMENTS AND CONTINGENCIES

The Company is engaged in certain legal and administrative proceedings incidental to its normal business activities. While it is not possible to determine the ultimate outcome of those actions, in the opinion of management after discussion with legal counsel, it is unlikely that the outcome of such litigation and other proceedings will have a material adverse effect on the results of the Company's operations or its financial position.

The Company has engaged Lockwood Greene to engineer and construct the Company's Biological Manufacturing Facility in the Laurinburg, NC area. The estimated cost of this facility is \$11.0 million.

#### 11. NET INCOME PER SHARE

The following table sets forth the computation of basic and diluted net income per share (in thousands, except per share amounts):

	<u>2002</u>	<u>2001</u>	<u>2000</u>
Numerator:			
Net Income Available To Common Stockholders	\$7,171	\$7,967	\$6,631
Effect of dilutive securities:			
Numerator for diluted earnings per share-income available to common stockholders after assumed conversions	<u>\$7,171</u>	<u>\$7,967</u>	<u>\$6,631</u>
Denominator:			
Denominator for basic net income per share—weighted -average	8,116	8,007	7,901
Effect of Dilutive Securities:			
Employee Stock Options	576	636	714
Warrants	<u>-0-</u>	<u>1</u>	<u>24</u>
Dilutive Potential Shares	576	637	738
Denominator for diluted net income per share—adjusted weighted-average shares and assumed conversions	<u>8,692</u>	<u>8,644</u>	<u>8,639</u>
Basic net income per share	<u>\$0.88</u>	<u>\$1.00</u>	<u>\$0.84</u>
Diluted net income per share	<u>\$0.82</u>	<u>\$0.92</u>	<u>\$0.77</u>

#### ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

Not applicable.

#### PART III

#### ITEM 10. DIRECTORS AND EXECUTIVE OFFICERS OF THE REGISTRANT

Information on the executive officers and directors is incorporated by reference from the Company's Proxy Statement (under the headings "Management" and "Proposal 1: Election of Directors," respectively), with respect to the Annual Meeting of Shareholders to be held on May 15, 2003, to be filed with the Securities and Exchange Commission.

#### ITEM 11. EXECUTIVE COMPENSATION

This information is incorporated by reference from the Company's Proxy Statement (under the heading "Executive Compensation"), with respect to the Annual Meeting of Shareholders to be held on May 15, 2003, to be filed with the Securities and Exchange Commission.

#### ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

This information is incorporated by reference from the Company's Proxy Statement (under the headings "Share Ownership of Management and Certain Beneficial Owners" and "Proposal 2: Amendment to Amended and Restated Employee Stock Purchase Plan; Equity Compensation Plan Information"), with respect to the Annual Meeting of Shareholders to be held on May 15, 2003, to be filed with the Securities and Exchange Commission.

#### ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS

Not applicable.

#### ITEM 14. CONTROLS AND PROCEDURES

Based on the Company's most recent evaluation, which was completed within 90 days of the filing of this Form 10-K, the Company's Chief Executive Officer and Vice President, Finance and Administration believe the Company's disclosure controls and procedures (as defined in Rules 13a-14 and 15d-14 of the Securities Exchange Act of 1934, as amended (the "Exchange Act")) provide reasonable assurances that information required to be disclosed by the Company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time period required by the United States Securities and Exchange Commission's rules and forms. Other than arising from the review described below, there have been no significant changes in internal controls or in other factors that could significantly affect these controls subsequent to the date of the most recent evaluation of the Company's internal controls, including any corrective actions with regard to significant deficiencies and material weaknesses. The Company continues to review and evaluate its internal controls, including in its international offices, as part of a review process established in late 2001. In certain of the Company's smaller offices, it is impracticable to maintain a number of personnel to establish separation of responsibilities for review and approval of transactions or other accounting or control functions. In order to address this, the Company has established greater supervision of these functions by personnel in the corporate office and intends to utilize an internal audit program with respect to these offices. The Company may take further actions as it may deem desirable based on its continuing reviews and evaluations.

#### PART IV

#### ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES, AND REPORTS ON FORM 8-K

(a)(1). The consolidated financial statements listed below are included in Item 8 of this report.

Report of Independent Auditors

Consolidated Financial Statements

Consolidated Balance Sheets at December 31, 2002 and 2001

Consolidated Statements of Operations for each of the three years ended December 31, 2002, 2001, and 2000

Consolidated Statements of Cash Flows for each of the three years ended December 31, 2002, 2001, and 2000

Consolidated Statements of Shareholders' Equity for each of the three years ended December 31, 2002, 2001, and 2000

Notes to Consolidated Financial Statements

(a)(2). Financial Statement Schedule

Schedule II - Valuation and Qualifying Accounts (appears following Certifications in this report)

(a)(3) The exhibits listed below are filed as part of this report. Executive compensation plans and arrangements are listed in Exhibits 10.12 through 10.42.

Exhibits	Description
3.1(1)	Restated Articles of Incorporation
3.2(2)	Articles of Amendment to Restated Articles of Incorporation, effective March 21, 1996
3.3(3)	Articles of Amendment to Restated Articles of Incorporation, effective May 28, 1996
3.4(4)	Amended and Restated Bylaws, effective September 21, 2000
4.1	Reference is made to Exhibits 3.1, 3.2, 3.3 and 3.4
4.2(5)	Specimen of Common Stock Certificate
4.3(6)	Rights Agreement dated as of March 21, 1996 between Embrex and Branch Banking and Trust Company, as Rights Agent
4.4(7)	Amendment to Rights Agreement dated as of January 6, 2003 between Embrex and Branch Banking and Trust Company, as Rights Agent
10.1(8)	License Agreement dated December 11, 1991, between Embrex and the National Technical Information Service, a Primary operating unit of the United States Department of Commerce
10.2(8)	Collaborative Research Agreement dated January 17, 1989 between Embrex and the University of Arkansas
10.3(8)	License Agreement dated October 1, 1998 between Embrex and the National Technical Information Service, a Primary operating unit of the United States Department of Commerce
10.4(8)	Lease Agreement dated December 9, 1986 between Embrex, as tenant, and Imperial Center Partnership and Petula Associates, Ltd., as landlord, as amended by First Amendment dated June 11, 1987, Second Amendment dated December 1, 1988, and Third Amendment dated May 2, 1989
10.5(5)	Fourth Amendment of Lease dated October 1, 1994 between the Company and Glaxo Inc. (as successor in interest to Imperial Center Partnership and Petula Associates, Ltd.)
10.6(5)	Fifth Amendment of Lease dated December 13, 1996 between the Company and Glaxo Wellcome Inc. (as successor in interest to Glaxo Inc.)
10.7(9)	Lease for Royal Center II dated October 13, 1997 between the Company and Petula Associates, Ltd.
10.8(10)	Sublease Agreement dated October 1, 1999, between Embrex, as subtenant, and Wandel & Goltermann Technologies, Inc., as sublandlord
10.9(10)	First Amendment to Sublease Agreement dated February 29, 2000, among Wandel & Goltermann Technologies, Inc., Embrex and W & G Associates
10.10(8)	Unrestricted Grant Agreement dated November 1, 1986, between Embrex and North Carolina State University, as Amended by Amendment dated May 3, 1989, Amendment dated September 15, 1989, and Amendment dated April 22, 1991

- 10.11(8) Basic Research Agreement dated October 24, 1989, between Embrex and University of Arkansas, as amended on October 23, 1990, February 1, 1991 and July 22, 1991
- 10.12(8) 1988 Incentive Stock Option Plan and form of Incentive Stock Option Agreement
- 10.13(8) 1989 Nonstatutory Stock Option Plan and form of Nonstatutory Stock Option Agreement
- 10.14(8) 1991 Nonstatutory Stock Option Plan and form of Nonstatutory Stock Option Agreement
- 10.15(11) Incentive Stock Option and Nonstatutory Stock Option Plan and forms of Stock Option Agreements - June 1993
- 10.16(3) Amendment dated May 16, 1996 to Incentive Stock Option and Nonstatutory Stock Option Plan - June 1993
- 10.17(12) Amended and Restated Incentive Stock Option and Nonstatutory Stock Option Plan - May 1998
- 10.18(13) Amended and Restated Incentive Stock Option and Nonstatutory Stock Option Plan - January 1999 and form of Stock Option Agreement
- 10.19(14) Amended and Restated Incentive Stock Option and Nonstatutory Stock Option Plan - July 2000
- 10.20(15) Amendment dated May 16, 2002 to Amended and Restated Incentive Stock Option and Nonstatutory Stock Option Plan - July 2000
- 10.21(15) Amendment dated July 18, 2002 to Amended and Restated Incentive Stock Option and Nonstatutory Stock Option Plan - July 2000
- 10.22(5) Amended and Restated Employee Stock Purchase Plan - November 1996
- 10.23(14) Amended and Restated Employee Stock Purchase Plan - July 2000
- 10.24(14) Amended and Restated Employee Stock Purchase Plan for Non-U.S. Employees - July 2000
- 10.25(15) Amendment dated July 18, 2002 to Amended and Restated Employee Stock Purchase Plan - July 2000
- 10.26(8) Employment Agreement dated November 15, 1989, between Embrex and Randall L. Marcuson
- 10.27(5) Amendment to Employment Agreement dated May 21, 1996 between Embrex and Randall L. Marcuson
- 10.28(5) Change In Control Severance Agreement dated May 21, 1996 between Embrex and Randall L. Marcuson
- 10.29(16) Amendment to Change in Control Severance Agreement dated October 1, 1998 between Embrex and Randall L. Marcuson
- 10.30(8) Employment Agreement dated October 16, 1989, between Embrex and Catherine A. Ricks
- 10.31(5) Change In Control Severance Agreement dated May 21, 1996 between Embrex and Catherine A. Ricks
- 10.32(16) Amendment to Change in Control Severance Agreement dated October 1, 1998 between Embrex and Catherine A. Ricks
- 10.33(2) Terms and Conditions of Employment between Embrex Europe Limited and David M. Baines dated May 12, 1994
- 10.34(5) Change In Control Severance Agreement dated June 9, 1996 between Embrex and David M. Baines
- 10.35(16) Amendment to Change in Control Severance Agreement dated October 1, 1998 between Embrex and David M. Baines
- 10.36(5) Letter Agreement and General Provisions to Employment Agreement dated August 20, 1996 between Embrex and Don T. Seaquist and Amendment to Employment Agreement dated September 9, 1996 between Embrex and Don T. Seaquist

- 10.37(5) Change In Control Severance Agreement dated September 9, 1996 between Embrex and Don T. Seaquist
- 10.38(16) Amendment to Change in Control Severance Agreement dated October 1, 1998 between Embrex and Don T. Seaquist
- 10.39(16) Letter Agreement and General Provisions to Employment Agreement dated February 3, 1999 between Embrex and Brian C. Hrudka
- 10.40(16) Change In Control Severance Agreement dated March 24, 1999 between Embrex and Brian C. Hrudka
- 10.41 Letter Agreement and General Provisions to Employment Agreement dated June 2, 1997 between Embrex and Joseph P. O'Dowd
- 10.42 Amendment to Employment Agreement dated May 1, 2001 between Embrex and Joseph P. O'Dowd
- 10.43(13) Indemnification Agreement among Embrex, Randall L. Marcuson, Charles E. Austin, C. Daniel Blackshear, Lester M. Crawford, Peter J. Holzer, Kenneth N. May, and Arthur M. Pappas dated as of April 1, 1999
- 10.44(17) Amendment to Indemnification Agreement among Embrex, John E. Klein and Walter V. Smiley dated as of May 17, 2001
- 10.45(17) Amendment to Indemnification Agreement between Embrex and Dr. Ganesh M. Kishore, Ph.D., dated as of February 14, 2002
- 10.46(9) Inovoject® Egg Injection System Lease, Limited License, Supply and Service Agreement dated September 1, 1994 between Embrex and Tyson Foods, Inc.
- 10.47(9) Amendment dated March 26, 1997 to the Inovoject® Egg Injection System Lease, Limited License, Supply and Service Agreement dated September 1, 1994 between Embrex and Tyson Foods, Inc.
- 10.48(2) Limited License and Supply Agreement dated as of July 20, 1995 between Embrex and Webster
- 10.49(5) Amendments dated August 1, 1996 and November 11, 1996 to Limited License and Supply Agreement dated as of July 20, 1995 between Embrex and Webster
- 10.50(2) Agreement dated as of January 22, 1996 between Embrex and Select
- 10.51(2) Letter Agreement dated as of January 22, 1996 between Select and Embrex
- 10.52(2) License dated as of January 22, 1996 granted by Select to Embrex
- 10.53(18) Loan Agreement between Embrex and Branch Banking and Trust Company dated as of April 7, 1999
- 10.54(19) License and Royalty Agreement between Embrex and Pfizer, Inc. and it Affiliates dated as of June 22, 2001
- 10.55(20) Credit Agreement between Embrex and Advanced Automation, Inc. dated as of April 1, 2001
- 10.56(20) Amended and Restated Research, Development and Marketing Agreement between Embrex and LifeSensors, Inc. dated as of July 20, 2001
- 10.57(15) Letter Modification dated June 20, 2002 to Amended and Restated Research, Development and Marketing Agreement between Embrex and LifeSensors, Inc. dated as of July 20, 2001
- 10.58 Engineering, Procurement, and Construction Agreement dated November 26, 2002 between Embrex and Lockwood Greene E&C, L.L.C.
- 21 Subsidiaries

23	Consent of Ernst & Young LLP to the incorporation of their report dated February 14, 2003 with respect to the consolidated financial statements and schedule of Embrex, Inc. and subsidiaries included in this Form 10-K in the Registration Statements on Form S-3 (Registration Nos. 333-18231 and 333-31811), as filed with the Securities and Exchange Commission on December 19, 1996 and July 22, 1997, respectively, and into the Registration on Form S-8 (Registration Nos. 33-51582, 33-63318, 333-04109, 333-56279, 333-42676 and 333-91304), as filed with the Securities and Exchange Commission on September 1, 1992, May 25, 1993, May 20, 1996, June 8, 1998, July 31, 2000, and June 27, 2002, respectively.
24	Powers of Attorney (included in the signature page for this report)
99	Risk Factors relating to the Company

- (1) Exhibit to the Company's Form 10-K as filed with the Securities and Exchange Commission for fiscal year ending December 31, 1991 and incorporated herein by reference
- (2) Exhibit to the Company's Form 10-K as filed with the Securities and Exchange Commission for the fiscal year ending December 31, 1995 and incorporated herein by reference
- (3) Exhibit to the Company's Form 10-Q as filed with the Securities and Exchange Commission for the three months ended June 30, 1996 and incorporated herein by reference
- (4) Exhibit to the Company's Form 10-Q as filed with the Securities and Exchange Commission for the three months ended September 30, 2000 and incorporated herein by reference
- (5) Exhibit to the Company's Form 10-K as filed with the Securities and Exchange Commission for the fiscal year ending December 31, 1996 and incorporated herein by reference
- (6) Exhibit to the Company's Registration Statement on Form 8-A as filed with the Securities and Exchange Commission on March 22, 1996 and incorporated herein by reference
- (7) Exhibit to the Company's Form 8-K as filed with the Securities and Exchange Commission on January 9, 2003 and incorporated herein by reference
- (8) Exhibit to the Company's Registration Statement on Form S-1 as filed with the Securities and Exchange Commission (Registration No. 33-42482) effective November 7, 1991 and incorporated herein by reference
- (9) Exhibit to the Company's Form 10-K as filed with the Securities and Exchange Commission for the fiscal year ending December 31, 1997 and incorporated herein by reference
- (10) Exhibit to the Company's Form 10-K as filed with the Securities and Exchange Commission for the fiscal year ending December 31, 1999 and incorporated herein by reference
- (11) Exhibit to the Company's Form 10-K as filed with the Securities and Exchange Commission for the fiscal year ending December 31, 1992 and incorporated herein by reference
- (12) Exhibit to the Company's Registration Statement on Form S-8 as filed with the Securities and Exchange Commission (Registration No. 333-56279) effective June 8, 1998 and incorporated herein by reference
- (13) Exhibit to the Company's Form 10-Q as filed with the Securities and Exchange Commission for the three months ended March 31, 1999 and incorporated herein by reference
- (14) Exhibit to the Company's Form S-8 as filed with the Securities and Exchange Commission on July 31, 2000 and incorporated herein by reference
- (15) Exhibit to the Company's Form 10-Q as filed with the Securities and Exchange Commission for the three months ended June 30, 2002 and incorporated herein by reference
- (16) Exhibit to the Company's Form 10-K as filed with the Securities and Exchange Commission for the fiscal year ending December 31, 1998 and incorporated herein by reference
- (17) Exhibit to the Company's Form 10-K as filed with the Securities and Exchange Commission for the fiscal year ending December 31, 2001 and incorporated herein by reference
- (18) Exhibit to the Company's Form 10-Q as filed with the Securities and Exchange Commission for the three months ended June 30, 1999 and incorporated herein by reference

(19) Exhibit to the Company's Form 10-Q as filed with the Securities and Exchange Commission for the three months ended June 30, 2001 and incorporated herein by reference

(20) Exhibit to the Company's Form 10-Q as filed with the Securities and Exchange Commission for the three months ended September 30, 2001 and incorporated herein by reference

(b). Reports on Form 8-K.

The Company furnished a report under Item 9 of Form 8-K on November 12, 2002 with the written statements of the Company's chief executive officer and chief financial officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002. Information furnished in such Form 8-K is not deemed filed with the Securities and Exchange Commission.

## SIGNATURES AND POWER OF ATTORNEY

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this Annual Report on Form 10-K to be signed on its behalf by the undersigned, thereunto duly authorized.

### EMBREX, INC.

Date : March 28, 2003

By: /s/ Randall L. Marcuson  
Randall L. Marcuson  
President and Chief Executive  
Officer

We, the undersigned directors and officers of Embrex, Inc. (the "Company"), do hereby constitute and appoint Randall L. Marcuson and Don T. Seaquist or either of them, our true and lawful attorneys-in-fact and agents, with full power of substitution, to execute and deliver an Annual Report on Form 10-K pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934, as amended (the "Act"), with respect to the year ended December 31, 2002, to be filed with the Securities and Exchange Commission, and to do any and all acts and things and to execute any and all instruments for us and in our names in the capacities indicated below, which said attorneys-in-fact and agents, or either of them, may deem necessary or advisable to enable the Company to comply with the Act and any rules, regulations, and requirements of the Securities and Exchange Commission in connection with such Report, including without limitation the power and authority to execute and deliver for us or any of us in our names and in the capacities indicated below any and all amendments to such Report; and we do hereby ratify and confirm all that the said attorneys-in-fact and agents, or either of them, shall do or cause to be done by virtue of this power of attorney.

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Randall L. Marcuson</u> Randall L. Marcuson	President, Chief Executive Officer and Director	March 28, 2003
<u>/s/ Don T. Seaquist</u> Don T. Seaquist	Vice President, Finance and Administration (Principal Financial and Accounting Officer)	March 28, 2003
<u>/s/ C. Daniel Blackshear</u> C. Daniel Blackshear	Director	March 28, 2003
<u>/s/ David L. Castaldi</u> David L. Castaldi	Director	March 28, 2003
<u>/s/ Peter J. Holzer</u> Peter J. Holzer	Director	March 28, 2003
<u>/s/ Ganesh M. Kishore, Ph.D.</u> Ganesh M. Kishore, Ph.D.	Director	March 28, 2003
<u>/s/ John E. Klein</u> John E. Klein	Director	March 28, 2003

## CERTIFICATIONS

I, Randall L. Marcuson, certify that:

1. I have reviewed this annual report on Form 10-K of Embrex, Inc.;
2. Based on my knowledge, this annual report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this annual report;
3. Based on my knowledge, the financial statements, and other financial information included in this annual report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this annual report;
4. The registrant's other certifying officers and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-14 and 15d-14) for the registrant and we have:
  - a. designed such disclosure controls and procedures to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this annual report is being prepared;
  - b. evaluated the effectiveness of the registrant's disclosure controls and procedures as of a date within 90 days prior to the filing date of this annual report (the "Evaluation Date"); and
  - c. presented in this annual report our conclusions about the effectiveness of the disclosure controls and procedures based on our evaluation as of the Evaluation Date;
5. The registrant's other certifying officers and I have disclosed, based on our most recent evaluation, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent function):
  - a. all significant deficiencies in the design or operation of internal controls which could adversely affect the registrant's ability to record, process, summarize and report financial data and have identified for the registrant's auditors any material weaknesses in internal controls; and
  - b. any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal controls; and
6. The registrant's other certifying officers and I have indicated in this annual report whether or not there were significant changes in internal controls or in other factors that could significantly affect internal controls subsequent to the date of our most recent evaluation, including any corrective actions with regard to significant deficiencies and material weaknesses.

Date: March 28, 2003

/s/ Randall L. Marcuson  
Randall L. Marcuson  
President and Chief Executive Officer

I, Don T. Seaquist, certify that:

1. I have reviewed this annual report on Form 10-K of Embrex, Inc.;
2. Based on my knowledge, this annual report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this annual report;
3. Based on my knowledge, the financial statements, and other financial information included in this annual report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this annual report;
4. The registrant's other certifying officers and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-14 and 15d-14) for the registrant and we have:
  - a. designed such disclosure controls and procedures to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this annual report is being prepared;
  - b. evaluated the effectiveness of the registrant's disclosure controls and procedures as of a date within 90 days prior to the filing date of this annual report (the "Evaluation Date"); and
  - c. presented in this annual report our conclusions about the effectiveness of the disclosure controls and procedures based on our evaluation as of the Evaluation Date;
5. The registrant's other certifying officers and I have disclosed, based on our most recent evaluation, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent function):
  - a. all significant deficiencies in the design or operation of internal controls which could adversely affect the registrant's ability to record, process, summarize and report financial data and have identified for the registrant's auditors any material weaknesses in internal controls; and
  - b. any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal controls; and
6. The registrant's other certifying officers and I have indicated in this annual report whether or not there were significant changes in internal controls or in other factors that could significantly affect internal controls subsequent to the date of our most recent evaluation, including any corrective actions with regard to significant deficiencies and material weaknesses.

Date: March 28, 2003

/s/ Don T. Seaquist  
Don T. Seaquist  
Vice President, Finance and Administration

FINANCIAL STATEMENT SCHEDULE

**SCHEDULE II - VALUATION AND QUALIFYING ACCOUNTS  
EMBREX, INC. AND CONSOLIDATED SUBSIDIARIES**

(In thousands)	ADDITIONS				
DESCRIPTION	BALANCE AT BEGINNING OF PERIOD	(1) CHARGED TO COSTS AND EXPENSES	(2) CHARGED TO OTHER ACCOUNTS	DEDUCTIONS	BALANCE AT END OF PERIOD
<b>YEAR ENDED DECEMBER 31, 2002</b>					
Allowance for doubtful accounts	\$171	\$133(a)	0	\$(57)(a)	\$247
Inventory valuation allowance	222	73(a)	0	(71)(a)	224
Amortization of intangible assets	144	131(a)	0	0	275
<b>YEAR ENDED DECEMBER 31, 2001</b>					
Allowance for doubtful accounts	\$196	\$103(b)	0	\$(128)(a)	\$171
Inventory valuation allowance	194	62(b)	0	(34)(a)	222
Amortization of intangible assets	93	51	0	0	144
<b>YEAR ENDED DECEMBER 31, 2000</b>					
Allowance for doubtful accounts	\$171	\$91(b)	0	\$(66)(b)	\$196
Inventory valuation allowance	448	72(b)	0	(326)(b)	194
Amortization of intangible assets	84	9(b)	0	0	93

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(a) Specific account write offs.

(b) To adjust allowance for change in estimates.

EMBREX, INC.  
SUBSIDIARIES

Name	Jurisdiction of Incorporation
Embrex Europe Limited	United Kingdom
Embrex Sales, Inc.	North Carolina
Embrex BioTech Trade (Shanghai) Co., Ltd.	People's Republic of China
Inovoject® do Brasil Ltda.	Brazil
Embrex France s.a.s.	France
Embrex Iberica	Spain

Consent of Independent Auditors

We consent to the incorporation by reference in the Registration Statements on Form S-3 (Nos. 333-18231 and 333-31811) and the Registration Statements on Form S-8 (Nos. 33-51582, 33-63318, 333-04109, 333-42676, 333-56279 and 333-91304) of our report dated February 14, 2003, with respect to the consolidated financial statements and schedule of Embrex Inc. and Subsidiaries included in the Annual Report (Form 10-K) for the year ended December 31, 2002.

/s/ Ernst & Young LLP

Raleigh, North Carolina  
March 28, 2003

## RISK FACTORS

IN ADDITION TO THE OTHER INFORMATION CONTAINED OR INCORPORATED BY REFERENCE IN THIS REPORT, YOU SHOULD CONSIDER THE FOLLOWING FACTORS CAREFULLY IN EVALUATING US AND OUR BUSINESS BEFORE MAKING AN INVESTMENT DECISION. IF ANY OF THE FOLLOWING RISKS OCCUR, OUR BUSINESS, FINANCIAL CONDITION, OR RESULTS OF OPERATIONS COULD BE MATERIALLY ADVERSELY AFFECTED.

**OUR FUTURE GROWTH DEPENDS ON EXPANSION OF INTERNATIONAL REVENUES AND WE WILL BE SUBJECT TO INCREASED RISKS IN THE INTERNATIONAL MARKETPLACE**

We estimate that our Inovoject® system inoculates more than 80% of all eggs produced for the United States and Canada broiler poultry markets. Given this market penetration, we expect only limited growth in the number of system installations and only minor system revenue growth in this market. Additionally, due to our market penetration and the significance of the North America poultry market to our revenue, any adverse conditions in this market could have a material and adverse affect on our revenues. For this reason, we must expand our Inovoject® system installations and product sales in markets outside the United States and Canada in order to realize significant overall revenue growth. In each of 2002 and 2001, sales outside of the United States accounted for 31% of our consolidated revenues, up from 29% in 2000. Lack of market acceptance of our Inovoject® system and *in ovo* (“in the egg”) products in these markets would adversely affect our revenue growth. Revenue growth outside the United States and Canada depends on gaining market acceptance of the Inovoject® system and *in ovo* administration of biological products in markets outside the United States and Canada to treat prevailing poultry diseases in those markets.

International sales are also subject to a variety of risks, including risks arising from the following:

- currency fluctuations, trading restrictions, tariffs, trade barriers and taxes;
- adverse changes in local investment or exchange control regulations, potential restrictions on the flow of international capital, and the possibility of expropriation, confiscatory taxation or price controls; and
- economic and political conditions beyond our control, including country-specific conditions such as political instability, government corruption and civil unrest.

**OUR FUTURE GROWTH ALSO DEPENDS ON THE DEVELOPMENT AND MARKET ACCEPTANCE OF NEW PRODUCTS**

In addition to international expansion, we need to develop and market new products in order to continue to generate increased revenues and growth of our business. We currently are developing, both independently and in collaboration with others, various products which address poultry health and performance needs. These products are being designed to be delivered *in ovo* through the Inovoject® system and are in various stages of development. There is no guarantee that any new products will be successfully developed and marketed. In addition, we have not initiated the regulatory approval process for some of these potential products, and we cannot assure you that regulatory approval will be obtained. Our inability to develop new products or any delay in our development of them may adversely affect our revenue growth. Because of a number of factors, a new product may not reach the market without lengthy delays, if at all. Some of the factors which may affect our development and marketing of new products include the following:

- our research and evaluations of compounds and new technologies may not yield product opportunities;
- potential products may involve extensive and time-consuming clinical trials to demonstrate safety and effectiveness, and the results of such trials are uncertain;

- potential products may require collaborative partners and we may be unable to identify partners or enter into arrangements on terms acceptable to us;
- we may not be able to contract for the manufacture of new products at a cost or in quantities necessary to make them commercially viable;
- regulatory approval of these products may not be obtained or may be obtained only with lengthy delays;
- we may not be able to secure additional financing that may be needed to bring a potential product to market;
- we may experience unexpected safety or efficacy concerns with respect to marketed products, whether or not scientifically justified, leading to adverse public reaction, product recalls, withdrawals or declining sales;
- marketing products developed jointly with other parties may require royalty payments or other payments by us to our co-developers, which may adversely affect our profitability;
- we may be unable to accurately predict market requirements and evolving standards; and
- we may not be able to attract and retain sufficient numbers of qualified development personnel.

We have developed and commercialized a technology using our proprietary viral neutralizing factor (VNF®). Our Bursaplex® product uses this technology. However, Bursaplex® has only been sold in commercial quantities during the past five years, and there is no assurance that the product will continue to be sold in commercial quantities.

In July, 2001 we submitted a registration application to the United States Department of Agriculture (USDA) for Newplex™, our in ovo Newcastle disease vaccine, which like Bursaplex® is based on VNF® technology. Although this product has been submitted for registration there is no assurance that USDA approval will be obtained or that this product will be sold in commercial quantities.

There can be no assurance that we will successfully complete the development and commercialization of any new products or that such products, if developed and commercialized, will meet revenue and profit expectations.

#### **ECONOMIC FACTORS AFFECTING OUR CUSTOMERS MAY ADVERSELY AFFECT OUR FINANCIAL RESULTS**

Our revenues principally come from sales and leases to the poultry industry. If there is a general economic decline in that industry, our operations and financial condition could be materially and adversely affected. Also, domestic and global economic factors beyond our control may adversely impact our customers and, as a result, our revenues and earnings. Examples of these factors include the following:

- fluctuations in the prices of poultry feed and energy;
- market demand for poultry products, including the supply and pricing of alternative proteins;
- costs to comply with applicable laws and regulations, including those relating to environmental protection, food safety, market regulation and genetically modified organisms or ingredients;
- product recalls and related adverse publicity and consumer reaction;
- access to foreign markets together with foreign economic conditions, including currency fluctuations; and

- the extent to which our cost of products and operating expenses increase faster than contractual price adjustments with our customers.

For example, if rising poultry feed prices increase the production costs of commercial poultry producers or a foreign government bans the importation of U.S. chicken, these producers may reduce production. This decreased production could adversely impact our revenues, since a principal component of our revenues are fees charged to customers for the number of eggs injected by the Inovoject® system.

#### WE FACE RISKS OF RAPIDLY CHANGING TECHNOLOGY AND COMPETITION

We are involved in areas of technology, which are subject to rapid and significant technological change. Competitors include independent companies that specialize in biotechnology as well as major chemical and pharmaceutical companies, universities, and public and private research organizations. Many of our competitors are well established and have substantially greater marketing, financial, technological and other resources than us. With expiration of the Sharma Patent, competitive *in ovo* delivery methods are under development and may gain commercial acceptance. The poultry biological business is especially competitive and dominated by a few very large companies with an established global presence. Also, competitors may succeed in developing technologies and products that are more effective than any which have been or are being developed by us or which would render our technology and products obsolete or non-competitive. We may not be successful in establishing or maintaining technological competitiveness. Increased competition could mean lower prices for our products, reduced demand for our products and a corresponding reduction in our ability to recover development, engineering and manufacturing costs. Any of these developments could have an adverse effect on our business, results of operations and financial condition.

#### WE DO NOT MANUFACTURE ANY OF OUR PRODUCTS AND ARE CURRENTLY DEPENDENT ON A SINGLE CONTRACT MANUFACTURER FOR INOVOJECT® SYSTEMS, FOR VNF® PRODUCTION, AND FOR BURSAPLEX® PRODUCTION

We currently do not have facilities for the production of our Inovoject® system and biological products. Therefore, we rely principally upon relationships with contract manufacturers. There can be no assurance that we can maintain manufacture and supply agreements on terms and at costs acceptable to us. We have various relationships with manufacturers and suppliers, including those described below. The loss of any of these relationships could adversely affect our operating results. There are a number of risks associated with our dependence on third-party manufacturers including:

- reduced control over delivery schedules;
- quality assurance;
- manufacturing yields and costs;
- the potential lack of adequate capacity during periods of unanticipated demand;
- limited warranties on products supplied to us;
- increases in prices and the potential misappropriation of our intellectual property; and
- catastrophic loss of production capacity due to property damage, either man made or by nature.

If our third-party manufacturers fail to provide us with an adequate supply of finished products, our business would be harmed. We have no long-term contracts or arrangements with any of our vendors that guarantee product availability or the continuation of particular payment terms. In addition, we are currently dependent on a single contract manufacturer for several of our key products as described below. Although we believe our relationship with each of the manufacturers is sound, we cannot assure you that we will continue to maintain relationships with them or that they will continue to exist.

## **Inovoject® System**

We rely on one contract manufacturer to fabricate all of our Inovoject® systems. While other machine fabricators exist and have constructed limited numbers of Inovoject® systems, we do not currently have alternative sources for production of the Inovoject® system. If our current fabricator is unable to carry out its manufacturing obligations to our satisfaction, we may be unable to obtain alternative manufacturing, or to obtain such manufacturing on commercially reasonable terms or on a timely basis. Any delays in the manufacturing process may adversely impact our ability to meet commercial demands for Inovoject® system installations and delay receipt of revenues from those installations.

## **Biological Products**

We obtain all of our requirements for the active ingredient in VNF® (Viral Neutralizing Factor) from SPAFAS, Inc. (SPAFAS), a subsidiary of Charles River Laboratories, Inc. Under our agreement with SPAFAS, we maintain appropriate inventory levels and place orders with SPAFAS to allow us to satisfy anticipated customer demand for VNF®. The manufacture of our VNF® product generally must be performed in licensed facilities and is subject to USDA regulation. The regulatory approval granted by the USDA for Bursaplex® in January 1997 specifically covers vaccines produced with SPAFAS-manufactured VNF®. Although there are other manufacturers that may be capable of manufacturing VNF®, we do not currently have alternative sources for production of VNF®.

We obtain all of our requirements for Bursaplex® from Merial Select, Inc. (Select), a Merck and Aventis company. The manufacture of Bursaplex® must be performed in licensed facilities or under approved regulatory methods. Although there are other manufacturers that may be capable of manufacturing avian infectious bursal disease (IBD) products, we do not currently have alternative sources for production of Bursaplex®.

If either SPAFAS or Select is unable to carry out its manufacturing obligations (described immediately above) to our satisfaction, we may be unable to obtain alternative manufacturing, or to obtain such manufacturing on commercially reasonable terms or on a timely basis. A change of supplier for the Company could adversely affect our future operating results due to the time it would take a new supplier to obtain regulatory approval by the USDA of its production process or manufacturing facilities. We could also be sued for breach under various contracts under which we are obligated to supply VNF® or Bursaplex® to third parties. Current regulatory approvals in foreign countries are based on product manufactured with SPAFAS VNF® or Bursaplex® as manufactured by Select. A change of manufacturer may result in the need to reapply for regulatory approval in those countries and may lead to suspended sales of that product until new approvals could be secured. Any delays in securing new approvals would have an adverse effect on our revenues and growth prospects. We cannot guarantee that we would be able to secure new approvals in every country or that such approvals would be granted in a timely fashion.

## **WE ARE DEPENDENT ON DISTRIBUTORS IN CERTAIN MARKETS**

We market and distribute our Inovoject® system principally by leasing and licensing the systems directly to hatcheries. In some markets, such as Japan, we instead rely upon distributors for the Inovoject® system. We also rely on third parties to market certain biological products, such as products containing VNF®, and we may enter into other arrangements in the future. There can be no assurance that we can maintain these relationships on terms acceptable to us. The loss of any of these relationships could adversely affect our operating results. There are a number of risks associated with our dependence on distributors and other third parties including:

- reduced control over regulatory efforts which may delay local regulatory approvals and thus market introduction;
- reduced control over marketing and sales efforts and in turn the extent of resulting market penetration or acceptance;
- reduced control over distribution and related customer satisfaction; and
- potential delays in distribution associated with securing new distributors, if current relationships are not maintained.

## POULTRY HEALTH AND DISEASE FACTORS AFFECTING OUR CUSTOMERS MAY ADVERSELY AFFECT OUR FINANCIAL RESULTS

Any widespread poultry health problem or disease outbreak could have a negative impact on global poultry production. Our revenues and earnings derived from both the U.S. and international poultry industry could be materially and adversely affected. In addition, the emergence of new disease variants, serotypes and strains in the domestic and/or global markets may reduce the efficacy of our biological products and result in reduced revenues and earnings.

## THE LOSS OF KEY CUSTOMERS COULD ADVERSELY AFFECT OUR FINANCIAL RESULTS

Historically, a significant portion of our revenues has come from a relatively small number of customers. Tyson Foods, Inc. (Tyson) accounted for approximately 19% of our consolidated 2002 revenues. Our top three customers, including Tyson, accounted for approximately 30% of our consolidated 2002 revenues, which is down from 32% in 2000 and 34% in 1999. We expect a similar level of customer concentration to continue in future years. The poultry market is highly concentrated, with the largest poultry producers dominating the market. For example, in 2002, Tyson supplied approximately 22% of all broilers grown in the United States. The concentration of our revenues with these large customers makes us particularly dependent on factors affecting those customers. If we lose a large customer and fail to add new customers to replace lost revenues, our operating results will be materially and adversely affected. Also, if these customers reduce the number of eggs they produce at hatcheries, we will receive lower Inovoject® system revenues since our fees are based on the number of eggs injected.

## IF WE LOSE THE PROTECTION OF OUR PATENTS AND PROPRIETARY RIGHTS, OUR FINANCIAL RESULTS COULD SUFFER

Some of our products and processes used to produce our products involve proprietary rights, including patents. We own some of the technologies employed in these processes, and some are owned by others and licensed to us. The Inovoject® system utilizes a process that was patented by the USDA in the United States. We held an exclusive license to this primary patent (Sharma Patent), which expired in June 2002. We have supplemented the Sharma Patent with additional U.S. and foreign patents covering specific design features of the Inovoject® system. However, there is a risk that a competitive system could become commercially available in the United States now that the Sharma Patent has expired.

We believe that patent protection of materials or processes we develop and any products that may result from the research and development efforts of our licensors and us are important to the commercial success of our products. The loss of the protection of these patents and proprietary rights could adversely affect our business and our competitive position in the market. The patent position of companies such as ours generally is highly uncertain and involves complex legal and factual questions. Some of the reasons for this uncertainty include the following:

- To date, no consistent regulatory policy has emerged regarding the breadth of claims allowed in biotechnology patents. So, there can be no assurance that patent applications relating to our products or technology will result in patents being issued or that, if issued, the patents will afford protection against competitors with similar technology;
- Some patent licenses held by us may be terminated upon the occurrence of specified events or become non-exclusive after a specified period;
- Companies that obtain patents claiming products or processes that are necessary for or useful to the development of our products could bring legal actions against us claiming infringement (though we currently are not the subject of any patent infringement claim);
- Issuance of a valid patent does not prevent other companies from using alternative, non-infringing technology so we cannot be sure that any of our patents (or patents issued to others and licensed to us) will provide significant commercial protection;

- We may not have the financial resources necessary to obtain patent protection in some countries or to enforce any patent rights we may hold;
- The laws of some foreign countries may not protect proprietary rights to the same extent as the laws of the United States, and many companies have encountered significant problems in protecting their proprietary rights in these foreign countries;
- We may be required to obtain licenses from others to develop, manufacture or market our products. We may not be able to obtain these licenses on commercially reasonable terms, and the patents underlying the licenses may not be valid and enforceable; and
- We also rely upon unpatented, proprietary technology, which we may not be able to protect fully if others independently develop substantially equivalent proprietary information or techniques, improperly gain access to our proprietary technology, or disclose this technology to others.

We attempt to protect our proprietary materials and processes by relying on trade secret laws and non-disclosure and confidentiality agreements with our employees and other persons with access to our proprietary materials or processes or who have licensing or research arrangements with us. We plan to continue to use these protections in the future but we cannot be sure that these agreements will not be breached or that we would have adequate remedies for any breach. Even with these protections, others may independently develop or obtain access to these materials or processes, which may adversely affect our competitive position.

If we are sued for infringing the patent or other proprietary rights of a third party, we could incur substantial costs and diversion of management and technical personnel, whether or not the litigation is ultimately determined in our favor.

We have been involved in the patent litigation summarized below:

**Embrex v. Service Engineering Corporation and Edward G. Bounds, Jr.**

In September 1996, we filed a patent infringement suit against Service Engineering Corporation and Edward G. Bounds, Jr. in the U.S. District Court for the Eastern District of North Carolina. We made the following claims against the defendants:

Their development of an in ovo injection device, designed to compete with our patented Inovoject® injection method, infringes at least one claim of U.S. Patent No. 4,458,630, exclusively licensed to us for the in ovo injection of vaccines into an avian embryo (the Sharma Patent); and

They violated the terms of a Consent Judgment and Settlement Agreement entered into with us in November 1995 in which prior litigation was concluded with Service Engineering Corporation and Edward G. Bounds, Jr. agreeing not to engage in future activities violating the Sharma Patent.

We sought injunctive relief to prevent infringement of the Sharma Patent as well as monetary damages.

In November 1996, Service Engineering Corporation and Edward G. Bounds, Jr. responded to our suit by asserting various affirmative defenses and denying the substantive claims in our complaint.

This suit concluded on July 30, 1998 with a jury verdict in favor of us, which verdict:

- fully upheld the validity of all asserted claims of the Sharma Patent, finding that the defendants had willingly infringed all asserted claims of the patent;
- found that the defendants had breached the 1995 Consent Judgment and Settlement Agreement and that the breach was not in good faith; and

- awarded us damages of \$500,000 plus litigation expenses and court costs.

The Court entered a Judgment in favor of us on September 28, 1998, which included a monetary award of \$2,612,885 and an injunction prohibiting the defendants from practicing methods claimed in, or otherwise infringing, the Sharma Patent. That injunction has expired with the expiration of the Sharma Patent in June of 2002.

On October 28, 1998, Service Engineering Corporation and Edward G. Bounds, Jr. filed a notice of appeal in the U.S. Court of Appeals for the Federal Circuit seeking a reversal of the Judgment. In July 2000, the U.S. Court of Appeals for the Federal Circuit affirmed the district court's decision to award to Embrex litigation expenses plus interest valued at approximately \$1.5 million. In addition, the appeals court upheld the finding that Service Engineering Corporation and Edward Bounds had willfully infringed all asserted claims of the Sharma Patent. However, the appeals court vacated the award of direct infringement damages finding that the district court erroneously awarded direct damages without proper evidence to support the award. Therefore, the appeals court remanded that award (\$500,000 which was trebled) to the district court for further proceedings for determination of a reasonable royalty for the infringement of the patented method by Service Engineering Corporation and Edward G. Bounds, Jr. These proceedings were opened on August 28, 2000, but were stayed early in 2001 pending the conclusion of a bankruptcy proceeding initiated by Edward G. Bounds, Jr.

#### OUR FORT DODGE LITIGATION MAY ADVERSELY IMPACT OUR RESULTS OF OPERATIONS

In April 2002, we initiated a lawsuit against Fort Dodge Australia, Pty. Ltd. and Wyeth, Fort Dodge, asserting claims for breach of contract and unfair and deceptive trade practices arising out of an agreement by Fort Dodge to market throughout Europe, the Middle East and Africa a poultry vaccine for administration using Embrex's Inovoject® system. Fort Dodge answered the complaint and filed a counterclaim alleging breach of contract by Embrex and additional claims arising out of the agreement. The case is pending in U.S. District Court for the Eastern District of North Carolina. We have denied all of Fort Dodge's allegations and we are vigorously prosecuting our claims while defending the counterclaim. Our results of operations have been impacted and will continue to be impacted by the significant costs of pursuing this litigation. Moreover, there can be no assurance we will prevail in our claims against Fort Dodge or our defenses to its counterclaims. Even if the court finds in our favor, we have no assurances that any damage award will exceed our costs of pursuing this litigation or that we would be able to collect any damages from Fort Dodge.

#### THE LOSS OF KEY COLLABORATORS AND OTHER KEY PARTIES COULD ADVERSELY AFFECT OUR FINANCIAL RESULTS

We currently conduct our operations with various third-party collaborators, licensors or licensees. We plan to continue developing these relationships and believe our present and future collaborators, licensors and licensees will perform their obligations under their agreements with us, based on an economic motivation to succeed. However, financial or other difficulties facing these parties may affect the amount and timing of funds and other resources devoted by the parties under these agreements. In addition, disagreements may arise with these third parties which could delay or lead to the termination of the development or commercialization of new products, or result in litigation or arbitration, which would be time consuming and expensive. Thus, there is no assurance that we will develop any new products or generate any revenues from these collaborative agreements.

#### WE ARE SUBJECT TO AN INHERENT RISK OF PRODUCT LIABILITY

The development, manufacture, distribution and marketing of our products involve an inherent risk of product liability claims and associated adverse publicity. These claims may be made even with respect to those products that are manufactured in licensed and approved facilities or that otherwise possess regulatory approval for commercial sale. These claims could expose us to significant liabilities that could prevent or interfere with the development and marketing of our products. Product liability claims could require us to spend significant time and money in litigation or pay significant damages. Although we currently maintain liability insurance, which we believe is adequate to cover the Company's potential exposure in this area, there can be no assurance that the coverage limits of our policies will be adequate. Such insurance is expensive, difficult to obtain and may not continue to be available on acceptable terms or at all.

## **GOVERNMENT REGULATION AND THE NEED FOR REGULATORY APPROVAL MAY ADVERSELY AFFECT OUR BUSINESS**

Regulatory approval required in various areas of our business may adversely affect our operations. The primary emphasis of these requirements is to assure the safety and effectiveness of our products. While the use of the Inovoject® system is not subject to regulatory approval in the United States, it may require regulatory approval by foreign agencies. Also, research and development activities and the investigation, manufacture and sale of poultry health products are subject to regulatory approval in the United States by either the USDA or the United States Food & Drug Administration (FDA) and state agencies, as well as by foreign agencies. Obtaining regulatory approval is a lengthy, costly and uncertain process. Approval by the USDA generally takes 1 to 3 years, while approval by the FDA may take 5 or more years. Various problems may arise during the regulatory approval process and may have an adverse impact on our operations. Changes in the policies of U.S. and foreign regulatory bodies could increase the time required to obtain regulatory approval for each new product. Delays in obtaining approval may adversely affect the marketing of, and the ability to receive revenues and royalties from, products developed by us. There is no assurance that any future products developed by us or by our collaborative partners will receive regulatory approval without lengthy delays, if at all. Even when approved, regulators may impose limitations on the uses for which the product may be marketed and may continue to review a product after approving it for marketing. Regulators may impose restrictions and sanctions, including banning the continued sale of the product, if they discover problems with the product or its manufacturer.

Pursuant to some of our licensing or joint development agreements, the licensees or joint developers bear the costs associated with the regulatory approval process for some products. We plan to continue to enter into these types of agreements in the future. If we cannot generate sufficient funds from operations or enter into licensing or joint development agreements to develop products, we may not have the financial resources to complete the regulatory approval process with respect to all or any of the products currently under development. We may need to obtain approval from appropriate regulators before we can sell our products in a particular jurisdiction.

Other regulations apply or may apply to research and manufacturing activities, including federal, state and local laws, regulations and recommendations relating to the following:

- safe working conditions;
- laboratory and manufacturing practices; and
- use and disposal of hazardous substances used in conjunction with research activities.

It is difficult to predict the extent to which these or other government regulations may adversely impact the production and marketing of our products.

## **OUR INABILITY TO ATTRACT AND RETAIN KEY PERSONNEL COULD ADVERSELY AFFECT OUR BUSINESS**

We must continue to attract and retain experienced and highly educated scientific and management personnel and advisors to be able to develop marketable products and maintain a competitive research and technological position. Competition for qualified employees among biotechnology companies is intense. There can be no assurance that we will be able to continue to attract and retain qualified staff. The departure of any key executive or our inability to recruit and retain key scientific or management personnel could have an adverse affect on our business, results of operations or financial condition. Our ability to replace key individuals may be difficult and may take an extended period of time because of the limited number of individuals in the biotechnology industry with the breadth of skills and experience required to develop and commercialize products successfully. Competition to hire from this limited pool is intense, and we may be unable to hire, train, retain or motivate such individuals. We have obtained insurance in the amount of \$1,000,000 on the life of Randall L. Marcuson, our President and Chief Executive Officer, of which we are the sole beneficiary. This amount may not be sufficient to compensate us for the loss of his services.

**IF WE CANNOT CONTINUE TO PROVIDE TIMELY SUPPORT AND MAINTENANCE TO OUR CUSTOMERS, OUR BUSINESS MAY SUFFER**

We are required to supply, support, and maintain large numbers of Inovoject® systems at our customers' hatcheries on a timely basis at a reasonable cost to us. There can be no assurance that we will be able to continue to provide these services on a timely or cost-effective basis. If we are unable to do so, our customers may reduce their use of our products, which could adversely affect our operating results.

**WE HAVE ANTI-TAKEOVER DEFENSES THAT COULD DISCOURAGE OR DELAY A TAKEOVER**

Provisions of our certificate of incorporation and bylaws could have the effect of discouraging or delaying an acquisition of our company. For example, the Board of Directors has the authority to issue up to 15,000,000 shares of Preferred Stock in one or more series and to determine the designations, preferences and relative rights and qualifications, limitations or restrictions of the shares constituting any series of Preferred Stock, without any further vote or action by the shareholders. The issuance of Preferred Stock by the Board of Directors could affect the rights of the holders of Common Stock. For example, an issuance could result in a class of securities outstanding that would have preferences with respect to voting rights and dividends and in liquidation over the Common Stock, and could (upon conversion or otherwise) enjoy all of the rights applicable to Common Stock. The authority of the Board of Directors to issue Preferred Stock potentially could be used to discourage attempts by others to obtain control of us through merger, tender offer, proxy contest or otherwise by making these attempts more difficult to achieve or more costly. The Board of Directors may issue the Preferred Stock without shareholder approval and with voting and conversion rights which could adversely affect the voting power of the holders of Common Stock. No agreements or understandings currently exist for the issuance of Preferred Stock, and the Board of Directors has no present intention to issue any Preferred Stock. We adopted a shareholder rights plan which could have the effect of discouraging a takeover of us. The rights plan, if triggered, would make it more difficult to acquire us by, among other things, allowing existing shareholders to acquire additional shares at a substantial discount, thus substantially inhibiting the ability of an interested party to obtain control of the Company.

# Notes

## CORPORATE INFORMATION

### DIRECTORS

C. Daniel Blackshear<sup>2,3</sup>  
*President and  
Chief Executive Officer*  
Carolina Turkeys

David L. Castaldi<sup>3</sup>  
*Former Chairman and Chief  
Executive Officer,*  
Cadent Medical Corporation

\*Peter J. Holzer<sup>1,2,3</sup>  
*Chairman of the Board*  
*Former Advisory Director*  
AMT Capital Management, LLC

Ganesh Kishore, Ph.D.<sup>1,3</sup>  
*Vice President of Technology,  
Agriculture and Nutrition*  
Dupont Company

John E. Klein<sup>1,2,3</sup>  
*President and Chief Executive Officer*  
Bunge North America, Inc.

Randall L. Marcuson  
*President and Chief Executive Officer*  
Embrex, Inc.

### OFFICERS

David M. Baines, Ph.D.  
*Vice President,  
Global Sales*

Brian C. Hrudka  
*Vice President, Latin America  
and Global Marketing*

Randall L. Marcuson  
*President and Chief Executive Officer*

Joseph P. O'Dowd  
*Vice President, Global Product  
Development and Supply*

Catherine A. Ricks, Ph.D.  
*Vice President,  
Research and Development*

Don T. Seaquist  
*Vice President, Finance  
and Administration and  
Corporate Secretary*

### CORPORATE OFFICES

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### REGISTRAR AND TRANSFER AGENT

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### INDEPENDENT AUDITORS

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### CORPORATE COUNSEL

Smith, Anderson, Blount, Dorsett,  
Mitchell & Jernigan, LLP  
2500 First Union Capitol Center  
Raleigh, North Carolina 27601

### INVESTOR RELATIONS INQUIRIES

Ellen T. Moore  
*Vice President, Investor Relations  
and Corporate Communications*  
Embrex, Inc.  
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E-mail ir@embrex.com

We would like to welcome David L. Castaldi to our Board of Directors. His broad experience is highly applicable to Embrex and we look forward to his contributions.

### TRADEMARKS

Embrex®  
Inovoject®  
VNF®  
Bursaplex®  
Vaccine Saver®  
Egg Remover™  
Newplex™  
Inovocox™  
The In Ovo Company<sup>SM</sup>

### ANNUAL MEETING OF SHAREHOLDERS

The annual meeting of shareholders will be held at 9 a.m., May 15, 2003 at Embrex, Inc., 1040 Swabia Court, Durham, NC 27703. Directions are available at [www.embrex.com](http://www.embrex.com).

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1 Member, Compensation Committee (\*Chairman)

2 Member, Audit Committee (\*Chairman)

3 Nominating Committee (\*Chairman)



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