ELEMENT 21 GOLF CO
Form 10KSB
October 12, 2005

U. S. Securities and Exchange Commission
Washington, D.C. 20549

FORM 10-KSB

x ANNUAL REPORT UNDER SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended June 30, 2005

o REPORT UNDER SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from _____ to _____

Commission File No. 000-15260

Element 21 Golf Company
(Name of Small Business Issuer in its Charter)

Delaware	88-0218411
(State or Other Jurisdiction of incorporation or organization)	(I.R.S. Employer I.D. No.)

207 Queens Quay W. #455, Toronto, Ontario, Canada, M5J 2A7
(Address of Principal Executive Offices)

Registrant's Telephone Number: **800-710-2021**

Not Applicable
(Former name and former address, if changed since last Report)
200 Perimeter Road, Manchester, NH 03103
Securities Registered under Section 12(b) of the Exchange Act: None.

Securities Registered under Section 12(g) of the Exchange Act: Common Stock, one-cent ($0.01) Par Value

Check whether the Issuer (1) filed all reports required to be filed by Section 13 or 15(d) of the Exchange Act during the past 12 months (or for such shorter period that the Registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes o No x

Check if disclosure of delinquent filers in response to Item 405 of Regulation S-B is not contained in this form, and no disclosure will be contained, to the best of Registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10- KSB or any amendment to this Form 10-KSB. o

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes o No x

State Issuer's revenues for its most recent fiscal year: June 30, 2005 = $65,633.

State the aggregate market value of the voting and non-voting common stock held by non-affiliates computed by reference to the price at which the stock was sold, or the average bid and asked prices of such stock, as of a specified date within the past 60 days. As of October 5, 2005 there were approximately 83,073,582 shares of our common voting stock held by non-affiliates having a market value of $6,645,887 on such date. Without asserting that any director or executive officer of the issuer, or the beneficial owner of more than five percent of the issuer's common stock, is an affiliate, the shares of which they are the beneficial owners have been deemed to be owned by affiliates solely for this calculation.

State the number of outstanding shares of each of the Registrant's classes of common equity, as of the latest practicable date. As of October 5, 2005, there were 90,924,046 shares of common stock of the Issuer outstanding.

Element 21 Golf Company

10-KSB for the Year Ended June 30, 2005

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PART I

ITEM 1. DESCRIPTION OF BUSINESS

Business Development.

Element 21 Golf Company (the "Company,""E21,""we,""us" or terms of similar meaning) was originally formed as OIA, Inc. a Delaware corporation, in 1986. In 1992, the Company changed its name to Biorelease Corp., and was engaged in the business of biotechnology from 1992 through 1995. From mid-1995 through September 2001, the Company sponsored a number of early-stage ventures. In June 2001, the Company changed its name from Biorelease Corp. to BRL Holdings, Inc.

Effective November 9, 2001, we acquired 100% of the outstanding common stock of AssureTec Systems, Inc., a Delaware corporation ("Systems"), in a stock-for-stock transaction. We issued 6,354,000 shares of restricted common stock and converted outstanding options to acquire 4,750,000 shares of Systems common stock into options to acquire 4,750,000 shares of the Company's common stock.

On April 1, 2002, we exchanged 2,852,000 shares of Systems common stock that had been issued in connection with the Systems acquisition for 5,704,000 shares of our common stock, from substantially all the founders and consultants from whom our interest in Systems was initially acquired. In addition, options to acquire 4,750,000 shares of our common stock then held by these individuals were cancelled. As a result of these transactions and the issuance of additional shares of Systems to employees upon the exercise of stock options, our ownership of Systems decreased to 34.2% of Systems as of June 30, 2003.

On June 12, 2002 we incorporated Tech Ventures, Inc. (now named AssureTec Holdings, Inc. or "AssureTec") and transferred all our assets and liabilities to AssureTec in exchange for 100% ownership of AssureTec common stock. At that time, our only business was the business of AssureTec.

Effective October 3, 2002, we acquired 100% of the outstanding common stock of Element 21 Golf Company, a Delaware corporation ("Element 21"), in exchange for 42,472,420 restricted shares of our common stock ("the Acquisition"). We also converted options to acquire 6,432,000 shares of Element 21 common stock into options to acquire 6,432,000 shares of our common stock. This Acquisition has been accounted for as a "reverse" acquisition using the purchase method of accounting, as the shareholders of Element 21 owned a majority of the outstanding stock of our Company immediately following the Acquisition. Following the Acquisition, we changed our name to Element 21 Golf Company.

We now own approximately 5.1% of the issued and outstanding stock of AssureTec, which, as a result of a share exchange with the prior stockholders of Systems, now owns 100% of the outstanding stock of Systems. We have agreed to distribute these shares on a pro rata basis to our shareholders of record as of October 4, 2002 (excluding shareholders who received shares of our common stock in connection with the Acquisition). We anticipate that this distribution will occur as soon as possible after all appropriate documentation has been prepared and filed with the Securities and Exchange Commission.

In October 2003, the Company issued 12,287,082 shares to consultants in exchange for liabilities owed.

In May 2004, the Company issued 20,460,010 shares of the Company's common stock to consultants in exchange for liabilities owed in the amount of $1,841,401. This issuance increased the outstanding shares of the Company from 49,906,220 at June 30, 2003 to 82,653,312 at June 30, 2004.

During the fiscal year of 2005, the Company issued an aggregate of 4,833,929 shares of common stock to consultants in exchange for liabilities owed in the amount of $318,238.

Business of the Issuer

Element 21 was formed on September 18, 2002 to acquire partially-developed golf technology and to design, develop and bring to market scandium alloy golf club shafts and golf heads. Scandium is Element No. 21 in the Periodic Table of Elements. Scandium alloys are believed to exhibit properties that out-perform titanium with a higher strength-to-weight ratio of up to 25% and a specific density advantage of 55%. Scandium alloys are lighter, stronger and more cost effective than titanium. This advanced metal technology was originally developed in the former Soviet Union for military applications during the 1980s. Scandium alloys have been used in intercontinental ballistic missiles, jet aircraft, the Mir space station and most recently, in the International Space Station. The Company plans to commercialize Scandium's use in golf shafts and golf heads.

In September, 2002, Element 21 acquired from Dr. Nataliya Hearn, our current Chief Executive Officer, and David Sindalovsky, a consultant to the Company (the "Assignors"), the exclusive right to use, produce and sell a specified range of scandium metal alloy for golf club shafts and golf heads. Although these rights do not cover all mixes of scandium metal alloy, the Company believes that any scandium alloy outside the range of its patent-protected rights cannot be used to produce golf club shafts or heads in an economically feasible manner. Upon completion of the Acquisition, the previous officers and directors of the Company resigned and Dr. Hearn became the Company's President/ CEO and a Director and Jim Morin and Gerald Enloe also became Directors. Mr. Morin also serves as Vice President and Principal Financial Officer of the Company.

In March 2005, the Company began marketing full iron sets to retailers and golf pro shops. In April 2005, the Company entered into an agreement with The GolfWorks for the sale of the Company's scandium metal shafts for irons, utility clubs and wedges. The GolfWorks has been providing club makers and other golf equipment experts with a complete complement of proprietary club head designs, and a full selection of brand name shafts and grips for more than 25 years.

The Company operates solely through strategic consultants and without full-time employees. Consultant Nataliya Hearn, PhD, who is our CEO and President, is based in Toronto, Canada, and oversees the Company's engineering, alloy supply and production. Consultants Jim Morin, who is also our Vice-President, Secretary and Treasurer, and Frank Gojny, both of whom are based in California, oversee the development, testing and USGA approval for the golf products. David Sindalovsky is another consultant responsible for supervising the engineering and design of the golf club components. Howard Butler, PhD, is one of the world's leading golf designers. Dr. Butler has done extensive design work on the various types of clubs incorporating the Company's advanced scandium technology as well as laboratory testing and informal player testing and assessments. Stephen Meldrum has 17 years senior executive experience in international sales and licensing, and is handling investor relations for the Company. Additionally, several sales executives have been retained for business development and building retail distribution channels are consulting. Professional player relations are handled by Jack Curry and Andy Harris.

The Company believes that this structure is advantageous because it allows the Company to avoid having large marketing, administrative and development organizations in order to be responsive to fluctuations in the marketplace that have plagued other start-up golf companies.

The Company has a strategic supply agreement with an affiliate of Kamensk-Uralsky Metallurgical Works Joint Stock Company, located in a number of locations in Russia, also known as OAO KUMZ. Under this agreement, concentrated scandium will be produced to the specification of the Company by the KUMZ affiliate. KUMZ will also transfer the latest innovations in scandium alloys to the Company as they become available. KUMZ is a well-established, diversified producer of aluminum, aluminum alloys and products for aerospace, shipbuilding, automotive, and other industries. KUMZ is also the world's largest facility specializing in scandium alloy products.

Work in scandium initially began 20-25 years ago with the development of scandium aerospace alloys for fighter aircraft.

The second strategic partner of the Company is Yunan Aluminum, which is in the business of manufacturing precision tubing for outdoor recreation and sporting markets. Yunan Aluminum was established in 1979 in South Korea, and now manufactures, for parties other than the Company, about 80,000 pounds per month of high quality products made of high strength aluminum alloys. In August 2003 the company reached an agreement with Yunan Aluminum to produce scandium golf shafts and club components exclusively for the Company in South Korea.

Pan Osprey, a Chinese manufacturer of OEM golf equipment specializing in high-end golf clubs manufactured under license for some of the leading brand names in golf, will manufacture a full line of clubs with proprietary designs from Element 21's design labs when the Company begins commercial production of its clubs, of which there can be no assurance. The planned lineup includes drivers, fairway woods, a full range of irons, wedges, hybrid clubs, and putters. Pursuant to the Company's exclusive manufacturing agreement with Pan Osprey, the Company will provide the raw materials from which Pan Osprey will manufacture a full line of clubs under the E21 brand name.

Golf Products

We believe that scandium golf products have outstanding potential in the industry based on several factors:

- Results of player and robotic testing indicate scandium's improved performance over leading titanium clubs, and
- Improved distance and less dispersion, allowing longer more accurate results, which are impossible to achieve with current metals.

The interest in scandium has been supported by several performance and marketing features:

- Scandium alloys strategically incorporated into the production of metal woods, irons and putters can result in heads with a larger "sweet spot" for more consistency and accuracy;
- If increased club head size is not required, the reduced density and improved strength allows flexibility in placing perimeter weighting that can affect the trajectory (flight path) of the ball;
- Scandium alloys are softer than titanium providing superior feel and workability for the player;
- Scandium alloys are lower in cost and easier to fabricate than titanium;
- The specific yield strength advantage of scandium alloys over steel and high-end aluminum alloys enables the design of shafts at substantially reduced weight and higher performance;
- The homogeneous nature of scandium alloys allow for consistent shaft production, a problem inherent with graphite shafts.

Golf Shafts

Scandium golf shafts provide the light weight and flexibility of graphite with the favorable playing characteristics of steel. Steel dominates the shaft market for irons, while graphite is the most popular shaft material for metal woods. Graphite shafts are generally more expensive than steel, and golfers often experience inconsistency from club to club due to reproducibility problems inherent with graphite. The Company has produced prototype scandium shafts with several flex strengths that have been tested initially with irons and accepted as complying with the rules of golf by the USGA.

We believe the E21 scandium metal alloy shafts show improved performance in a number of respects to graphite and stainless steel shafts. Scandium's inherent metallurgical properties combined with a proprietary 25-step seamless production process results in a shaft that is nearly perfectly symmetrical, unlike graphite and stainless steel shafts. Many golf customers do not realize that steel shafts are welded creating a seam or spine that is not visible to the eye. The difference in the tube wall thickness at the point of welding creates an imbalance, which affects the consistency of shots. Similarly, the production process for graphite shafts also results in inconsistencies through the shaft with similar associated problems. The Company believes that scandium provides greater accuracy and improved consistency from club to club.

The tests conducted by Golf Labs Inc. on behalf of the Company showed remarkable 10-20 yard distance improvement when scandium shafts are tested against the best Graffaloy graphite and True Temper steel shafts. Of even greater significance were the test results that showed superior accuracy afforded by this new scandium technology. The dispersion pattern of shots hit with a robotic arm yielded a dispersion factor that was 250% smaller than popular steel and graphite shafts, when measured by the total square footage of the footprint of hit balls and their dispersion off-center. Although testing results cannot predict actual performance with certainty, the Company believes that these test results are meaningful.

Concurrent with the development of the overall shaft design, the Company has developed a shock absorbing system under the trademark ShockBlok™ which redirects shaft vibration back into the club head, generating an added energy kick for extra distance and reducing the amount of vibration transfer to the player's hands. Golfing has a negative effect on the body. Shock energy transferred to the player’s hands during a round of golf creates fatigue. For frequent golfers, this can lead to stress injuries to a player’s hands, wrist, elbows or shoulders, much like ‘tennis elbow’. The Company believes, based on test results only, that scandium improves shock absorption by up to 300%. The Company also believes that most users of its shafts would immediately notice the superior shock absorption and that scandium also contributes to a measurably superior feel as compared with steel and graphite clubs.

According to an analysis commissioned by a consultant to the Company, Dr. Howard Butler, along with two orthopedic physicians, during a typical round of golf, the extra energy transmitted to the hands of a golfer using steel shafts is 30.60 foot-pounds of force. This can significantly reduce fatigue during the course of the day, as well as reduce the incidence of shock related injury over the long-term.

The market for golf shafts was estimated by Golfdatatech to be close to 30 million units in the US and 60 million units worldwide in 1999. Golfdatatech estimates that the market size of the high performance premium shafts that the Company’s scandium shaft will initially be targeting represents approximately 27 million units worldwide.

The Company currently markets shafts designed for irons through select channels. Design and engineering of shafts for all other club heads (drivers, wedges, hybrids and putters) is complete and prototypes are currently being tested.

Clubhead Designs and Features

The Company has completed the design and engineering process for a full line of clubs, from drivers to putters. Prototypes of these various clubs are now undergoing testing, and production tooling is well underway. The golf shafts have undergone lab testing, including testing with a robotic arm at Golf Laboratories, Inc. in San Diego. These tests conducted to date have demonstrated favorable results for our scandium clubs as compared with competitive products, including greater distance, significant improvements in accuracy and consistency, and the “feel” of the clubs themselves. Although test results cannot predict actual performance results, the Company believes these test results are meaningful.

The E21 driver has one of the largest face areas of any driver on the market, and because the head and shaft are both made of the same patented scandium alloy, the Company believes that players should experience True Contact Signature™ at impact with the ball. The energy passes from the head to the shaft at the same frequency providing the golfer with a fully "harmonized" golf club. Shots are consistent both "off the centerline" and "along the centerline" giving the golfer a very tight, concise landing pattern resulting in a high level of control and repeatability. The scandium alloy club head also creates less ball spin at the point of impact for greater distance.-

The Company believes its club will be distinctly recognizable due to its unique design features that include a louvered effect on the crown plate of the club. These features create a corrugated effect that provides additional strength to the clubhead design and allows more freedom to move weight to strategic points within the sole of the clubhead to improve distance and accuracy. As with any object moving at a high speed, louvers provide aerodynamic stabilization benefits.

The Company used advanced proprietary software to optimize the head design, which includes a bulge and roll and the center of gravity. Additional software was then used to optimize the performance of the clubhead to E21's unique scandium metal alloy shafts. A number of patents on the special design features of the club have been filed.

The Company's Low Gravity Logic™ irons have a cavity back design with a hollow body filled with a patented high rebound aerospace polymer insert, that transfers more energy to the ball for livelier performance and maintains a low center of gravity. The head geometry is designed to leverage maximum performance from E21's patented new scandium metal alloy shafts. The clubs also feature variable face thickness with over six square inches of playing surface to maximize the sweet spot of the clubface. A large sole plate helps the player avoid hitting the ball fat. The mass of the head is closely aligned with the launch angles delivered by the shaft during contact with the ball. To maximize this benefit, the crown is back slanted by 15°.

The clubs are designed to allow professional clubmakers and PGA tour players to fine-tune the club to their unique preferences. This is accomplished by removing the E21 insignia on the back of the club, gaining access to a tubular weight port to add up to 28 grams of additional weight to the clubhead while maintaining its low center of gravity.

The E21 line of wedges includes clubs with 52 degree, 56 degree and 60 degree lofts that will also feature the revolutionary new Eagle One shafts made from E21's new Scandium alloy.

The wedges use E21's patented new Contact Signature Tuned system (CST System™) that uses advanced proprietary software to calculate and match the club head performance to E21's advanced scandium metal alloy shafts in order to provide enhanced head responsiveness. Through an optimum balance of launch angle and spin rate, E21 has developed what it believes are easy-to-hit wedges that provide improved feel, accuracy and consistency from club to club. These wedges with the E21 shafts will offer players a greater spin rate with a higher launch angle enabling them to stop the ball on the green.

The muscle back design, with Twin Peaks elongated on the center axis of the club back, offers a solid feel with an extremely consistent ball flight and trajectory. This peaked muscle back design actually raises the center of gravity behind the sweet spot for more carry distance on center hit shots. This design acts to focus the transfer of energy into the sweet spot of the club face. An additional benefit from the element gated Twin Peaks design is its ability to track straight through sand or turf by controlling the displacement of the ground beneath the club as contact is being made with the golf ball.

The weighted sole plate affords the capability to cut through even the worst rough, and get the ball up in the air. Simultaneously, the leading edge radius insures a true contact signature with the ball even from a poor lie.

Element 21's first putter is a traditional and proven Newport design. The new putter incorporates the advanced properties of scandium metal alloy in both the shaft and head of the new putter. The putter head incorporates a scandium metal alloy insert, which is milled for superior contact with the ball. Scandium's superior strength to weight ratio over existing golf metals has allowed E21 to redistribute weight in the head of the putter to create a larger sweet spot, which in turn provides substantial forgiveness on mis-hits.

The scandium metal alloy in both the shaft and putter head take advantage of scandium's soft feel and spin reduction, which translates to reduced ball "skid" upon contact with the ball, and allows the ball to begin rolling more quickly and easily off the face of the club. The Company believes that these features provide enhanced distance control and a more accurate ball trajectory. Initial player testing of these new clubs has provided very positive feedback on the improved "feel" that the putter provides over competitive offerings.

Scandium Alloys Evolution in the Golf Industry

The Company derives its name from the 21st element in the "Periodic Table of the Elements," which is the unique metal "scandium" (the beginning of a new millennium). Scandium, when mixed with other metals, has a higher strength-to-weight ratio than titanium and 50% more strength than typical high-strength aluminum alloys. The rights to develop other products not related to the golf industry were retained by the Assignors solely for their own benefit. All applications of scandium to golf products that are covered by the Assignors' patents have been acquired by the Company.

In August 2003, the Company finalized its golf shaft design criteria through the use of the most advanced CAD/CAM computer software programs available. These systems are used by the major aerospace companies to produce aircraft such as the Advanced Tactical Fighter, America's fighter jet for the 21st century. Utilizing the designs created and analyzed with this software, the Company's Korean manufacturer can produce golf shafts to the exacting standards of advanced aerospace products. The manufacturer has a capacity of processing in excess of 100,000 lbs of material per month which equates to approximately 450,000 golf shafts. The manufacturer has negotiated a $50,000US credit line with preferential payment terms to begin full production of its golf shafts. In return, the Company has purchased and provided to the manufacturer the semi-automatic testing and calibration equipment necessary to produce high quality golf products on a full production basis.

In April 2004, the Company announced the full implementation of a new Linear Forging Process, a proprietary method utilized in the mass product ion of Scandium Golf shafts. The unique "Linear Forging Process" utilizes a pulsed energy system in matching the structures' natural frequency resonance to elongate the metals grains with the least dimensional change to the golf shaft's design. The process' secondary benefit is in providing aligned straightness. All of these benefits are realized in just a few seconds, which results in high production rates and significant cost reduction in an otherwise labor-intensive operation.

In September 2005, the Company completed negotiations with Pan Osprey Golf Apparatus Co, Limited, a Chinese manufacturer of high-end golf equipment that manufactures golf clubs under license for a number of leading OEMs. The Company will provide Pan Osprey with the raw materials, as well as the necessary knowledge transfer, to properly work with this advanced metal alloy.

To date, the Company has produced a significant inventory of scandium metal alloy shafts under the E21 brand name, and Eagle One sub brand. The shafts are currently available for sale through catalog and online via the Golfworks, a company that sells wholesale parts to clubmakers around the world. The Company is also pursuing the possible development of traditional retail channels of distribution.

Dependent in part on its ability to obtain the necessary funding, of which there is no assurance, the Company intends to commence the production and roll-out of its proprietary scandium metal wood driver with a scandium alloy shaft to be sold to the retail golfer through a direct marketing program. Ultimately, the complete lineup of clubs will be made available through traditional retail channels of distribution. Again, depending on financing and marketing conditions, the Company may choose to license its products to other OEMs rather than develop the E21 brand name on its own.

Element 21's Competitive Advantage

We believe that we have a competitive advantage in our industry for the following reasons:

1. License and supply agreements for scandium metal alloys in place.
2. Longtime association with the world's largest producer of the highest quality scandium master alloy.
3. Strategic association with the world's largest producer of scandium products, which has over 20 years of experience in producing scandium metal alloy billet, extruded products, and forged products. Lowest production costs due to location, size, and experience, as well as the advantage of waste control during the production process.
4. Experienced team of alloy developers, processing specialists, production specialists, light metal sports equipment designers, and product marketing specialists.
5. Knowledge and association with several production paths of semi-finished and finished scandium products.
6. Consulting agreements with leading golf product development and marketing experts.
7. Growing demand for high performance golf products.
8. Added value to an OEM's golf club products providing for a longer and more accurate golf shots as tested against steel and graphite shafts manufactured by Royal Precision, Apollo, Aldila®, UST, Penley®, True Temper® and Grafalloy®.
9. Advanced proprietary clubhead designs that take full advantage of the unique properties of scandium metal alloy, and offer superior performance to existing alternatives.
10. Significant barriers to entry due to the complex nature of working with scandium, and patent protection for golf applications.
11. Trademarked ShockBlok™ shock reduction system in scandium metal alloy shafts.

Scandium Metal - "Element 21"

Scandium, a little-known element, was developed primarily in secret aerospace programs in the former Soviet Union. It was used as an additive to traditional aluminum alloys to create the highest strength scandium metal alloys and

alloys with significantly enhanced weldability. These super-alloys were used in missiles and MIG-29 aircraft and are currently used in MIG-31 and Sukhoi-27 aircraft. We believe that the rights we have acquired from the Assignors cover scandium metal alloys that have achieved the highest “strength-to-weight ratio” for golf applications.

Scandium is most often found in nature as an oxide in relatively low concentrations, from 5 to 100 parts per million. It is rarely concentrated in nature due to its lack of affinity to combine with the common ore-forming anions. Therefore, it is usually derived as a by-product from uranium and other mineral leaching operations. The cost of scandium is directly related to the relatively high cost of processing and its lack of widespread use in commercial products. It has not been commercially mined in the United States or Europe because only small quantities have been used, primarily in high intensity halide lamps, lasers, electronics, high tech ceramics, and research applications.

However, in the former Soviet Union, scandium has been produced in significantly larger quantities since it was an additive to traditional aluminum alloys to produce ultra high strength scandium metal alloys for military aerospace uses. In Russia, there is now less scandium production due to reduced military spending. Currently however, Russia still possesses the world's largest stockpile of pure scandium oxide, which is available to the Company through the rights it acquired from Assignors. When the current supply is exhausted, scandium can be obtained through reactivating production of various waste streams of already identified ore processing sites in Russia. In addition, several possible North American scandium production sites have also been identified, if there is sufficient demand to justify the investment.

History of Commercial Scandium Metal Alloys

Scandium metal alloys for sports applications were developed using the expertise of Russian and Ukrainian scientific institutes. To date, more than 75 tons of scandium metal master alloy have been sold for the production of over 2,500,000 pounds of final product, including several sports products, and for a variety of civil and government funded transportation related development programs.

In 1997, Easton Sports' baseball and softball bats constituted the first production of a large-scale scandium sports product. The ultra light high-strength Easton bats, known as the Scandium/Sc 7000 Redline series, quickly became the most successful new product launch in Easton's 75-year history. As of September 2003, Easton has sold in excess of $800,000,000 of scandium metal alloy baseball and softball bats. Easton then produced a weldable scandium metal alloy for use in bicycle frames, and handle bars. Both products have been highly successful and the frame is now considered one of the lightest in the industry and used by many top-racing teams. In addition to baseball bats and bicycle frames, scandium golf shaft, metal wood drivers, putters, lacrosse sticks, bicycle seat posts and handlebars, and hockey stick prototypes have been developed.

Scandium Metal Alloy Product Advantages

Scandium alloys have advantages over other high strength aluminum and titanium alloys and composite materials, especially in heavily drawn and worked products:

- Up to 50% strength increase over high-strength aluminum alloys;
- Over 20% specific strength advantage over titanium alloys;
- Significant cost and design advantages over composite materials;
- Reduction and elimination of surface re-crystallization;
- Increase in weldability and weld strength;
- Increase in weld fatigue life of 200%;
- Reduction and elimination of hot-cracking in welds;
- Increased plasticity, durability, and formability.

Sports Equipment

As athletes and marketers demand improvement in sports equipment, designers push material limitations when using existing metals and alloys. Most aluminum products in the sports market today have alloy development origins from the 1930s, while other high-performance alloys were developed in the 1960s. Titanium and composite materials have replaced aluminum in some sporting goods; however, these materials are more expensive and more difficult to process. Consequently, they have found major acceptance only in the highest end of the market.

Our objective is to develop and market new golf products with scandium alloys which can provide measurable advantages over existing high-end aluminum alloys, stainless steel, titanium and composite materials.

Sales and Marketing

This product development effort has provided the Company with several sales and marketing options. These options include the sale of semi-finished products to other original equipment manufacturers (OEMs), the sale of finished heads to OEMs, and/or the Company's own direct sale of branded scandium alloy golf products to the market place.

Currently, E21 scandium metal alloy shafts are available to clubmakers and fabricators through the Gol