Continuous Power

Annual Report 1999

OPTIMA® BATTERIES
OPTIMA SPIRALCELL® TECHNOLOGY
THE ULTIMATE POWER SOURCE™

Gylling Optima Batteries – Continuous power through times

1999
The research and development company EFF power is formed together with VOLVO Technology Transfer AB.

1996
Optima completes its state-of-the-art production plant in Aurora, equipped with technologically advanced and partly in-house developed machinery, providing scope to significantly extend future production capacity. The plant is strategically located near Denver International Airport.

1992
The Gylling Group acquires Optima Batteries, at that time a small development company with some 30 employees and limited, partly manual, production.

1983
Research and development of car batteries based on SpiralCell technology is initiated by Gates Energy in Denver, Colorado.

1961
After a reconnaissance trip to Japan, Bertil Gylling obtains the general agency for Sony Corp., which was unknown in Sweden at that time.

1950s
Bertil Gylling junior continues development of the telecom business towards more and larger Centrum Intercom systems. Exports increase rapidly.

1920-30s
Centrum's slogan "the radio with the wonderful tone" is coined by Gylling and Centrum is developed into one of the top radio brands in Sweden.

1997
Optima is introduced on the SBI list of the Stockholm Stock Exchange and is later moved to the O list (optb).

1993
The U.S. Air Force decides to use OPTIMA in service vehicles at its air bases worldwide.

1987
The first 12-volt SpiralCell batteries are introduced locally on the U.S. market.

1970s
During this decade, the Gylling Group introduced Apple personal computers and Korean Samsung's products on the Swedish market.

1960s
Centrum Intercom is the world-leader, with 1,500 employees and subsidiaries in 8 countries.

1940s
During the war years Gylling produces military command and control systems, which are later developed into Intercoms.

1912
At 25, Bertil Gylling senior begins his 50-year professional career.

SpiralCell Technology® is by far the most effective, long-lasting and high-performance technology available when it comes to lead-acid batteries. As the originator, Optima holds a position as a global, cutting-edge performer in this field.

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NOTICE OF THE ANNUAL GENERAL MEETING

The shareholders in Gylling Optima Batteries AB (publ) are hereby invited to the Annual General Meeting to be held at 3:00 p.m. on Thursday, May 18, 2000, at Vendevägen 90, Danderyd, Sweden.

- Refreshments will be served from 2:00 p.m. during registration of voting rights and proxies.
- A complete notice of the meeting including the agenda will be published in Dagens Nyheter.
- All shareholders are welcome to attend.

PARTICIPATION IN THE MEETING

Shareholders who wish to participate in the meeting

– must be entered in their own name in the register of shareholders maintained by Värdepapperscentralen VPC AB (the Swedish Securities Register Center) not later than May 8, 2000, and

– must have informed the company of their intention to participate not later than Tuesday, May 16, 2000, 4:00 p.m. at the following address:

Gylling Optima Batteries AB
Box 742
SE-182 17 Danderyd, Sweden, or
by telephone: +46-8-622 32 00.

Shareholders must state their name, personal identity number or company registration number, address, telephone number and registered shareholdings. In order to participate in the Meeting, shareholders whose shares are registered in the name of a trustee must temporarily re-register the shares in their own names well ahead of 8 May 2000. Such registration is requested from the trustee.

The annual report is sent to all shareholders. Other documents relating to the items of business stated in the notice of meeting are available at the company as of May 2, 2000 and will be sent to shareholders on request.

FINANCIAL CALENDAR

Interim Report Jan-March	Thursday, May 4, 2000
Annual General Meeting	May 18, 2000
Interim Report Jan–June	Thursday, August 24, 2000
Interim Report Jan–Sept	Thursday, November 9, 2000
Year-end Report 2000	Thursday, February 22, 2000

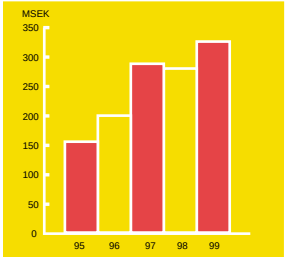
The year in brief

- **Operating income improved by MSEK 36.9 from MSEK –20.2 to MSEK 16.7.**
- **Income after financial items increased by MSEK 35.9 from MSEK –28.9 to MSEK 7.0.**
- **Net sales, excluding GM, rose by 19.0 percent to MSEK 324.5 (272.6). Robust U.S. market, although the strong dollar rate inhibited other markets.**
- **Significant advances in technological development.**
- **A 5-year distribution and technological development agreement with GNB Technologies Inc., USA, was signed in late autumn, securing long-term volume growth.**

SIGNIFICANT EVENTS AFTER THE END OF THE FISCAL YEAR

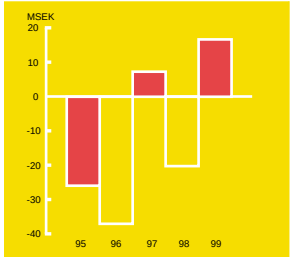
- **With effect from January 1, 2000, the operations of the subsidiary Optima Batteries AB were taken over by the Parent Company.**
- **After 50 years as President and CEO of the Gylling companies, Bertil Gylling resigned in connection with the AGM on May 18, 2000, and was succeeded by Bengt Hagander. Bertil Gylling will retain his seat on the Board.**

Net sales, 5-year trend



Net sales in 1999 amounted to MSEK 324.5, an increase of 19 percent.

Operating income, 5-year trend



Operating income in 1999 totaled MSEK 16.7, an improvement of MSEK 36.9 compared with 1998.

RESEARCH AND DEVELOPMENT 1999

The joint company EFF Power AB, formed with Volvo Technology Transfer AB, is developing new battery technology for heavy vehicles. The functionality of key components has been secured and verified.

Optima is currently involved in several projects with leading European auto manufacturers. These projects are related to exhaust emission control for the U.S. market via E-cat heating and the industry's choice of a 36-volt platform.

The Advanced Lead-acid Battery Consortium's (ALABC) charging and cycling project in the U.S. has verified a doubled cycle life for OPTIMA deep cycle battery technology. The goal is to quadruple the cycle life of OPTIMA batteries.

OPTIMA SPIRALCELL® TECHNOLOGY

1999 a turnaround year for Optima

We can look back on an eventful and exciting year that marked a decisive turnaround for Optima Batteries. Powerful volume growth and better utilization of production capacity boosted income quarter by quarter. Net income for the year improved by MSEK 35.9 to MSEK 7.0 (–28.9). The sales volume rose from 444,000 to 508,000 batteries. Net sales, excluding GM, increased by 19.0 percent to MSEK 324.5 (272.6).

One of the year's highlights was the agreement with the U.S. battery manufacturer GNB Technologies Inc., which assures robust long-term sales growth. Optima Batteries has thus gained a foothold in a new and important sector of the American market. The agreement guarantees a minimum level, and Optima is expected to increase its sales volume by more than 20 percent during the year 2000.

NEW MANAGEMENT IN THE U.S.

Perhaps the most important event of 1999 was the change of management and organization in the U.S. The new organization is structured according to a Swedish model, and is based on greater openness and short decision-making paths. Pär M. Ericsson took over as President of the U.S. company during the year. Other changes included the appointment of a new management team, and today all employees in the U.S. have direct access to the Swedish senior management. The management in Sweden has also implemented channels for direct communication without detours, obstacles and reinterpretations. Towards the end of the year, employee turnover decreased, quality improved and productivity gradually increased.

NEW INVESTMENTS

In order to better utilize production capacity in Denver, Börje Maleus, a highly experienced production manager from ABB Generation in Sweden, was recruited in 1999. He has launched a comprehensive program to attain further improvements in productivity and quality.

Continued investments of 3 million USD were made during the year, primarily in machinery, logistics and flows, to meet the anticipated volume growth. A new service and maintenance program for machinery is under implementation and will lead to higher quality and lower material losses.

Optima has opened a local office in Japan as a powerful indication to the automotive and OEM market of our long-term presence and committed focus.

NEW BREAKTHROUGHS

One key breakthrough during the year was the approval of the U.S. Department of Defense. After extensive testing Optima received a standard certificate of approval, and in 1999 this resulted in a 40 percent sales increase in the segment. As an approved supplier, Optima is listed on the U.S. government's electronic marketplace, FedCenter, which is the largest of its kind. We anticipate further growth in sales to the American armed forces.

OPTIMA deep cycle technology gained a foothold in both North America and Europe. In two separate development projects with electric hybrid buses, Optima has documented better performance than its competitors. This has given rise to substantial battery orders for a large number of buses.

This technology, in combination with Optima's recently launched battery charger, was introduced in the form of a pack containing several OPTIMA batteries (OPTIMA Spiral Pack™). At the beginning of 2000 this generated a breakthrough order in the material handing area, opening a whole new market segment in which Optima is working with OEM companies.

AT THE CUTTING EDGE OF TECHNOLOGY

Since Optima is first and foremost a research and development company, it is only natural that we take part in interesting development projects.

In cooperation with Volvo we have established EFF Power AB, and since 1999 this company has conducted a project based on patents developed at Chalmers University of Technology in Gothenburg. The aim is to develop a new type of battery for heavy vehicles. The collaboration is running smoothly and significant advances have been made.

In close collaboration with several auto manufacturers, Optima is working on new solutions for the automotive industry where there is a trend towards new electrical systems with 36-volt batteries. The auto industry predicts that 42-volt systems, including a 36-volt battery, will be launched on a wide front within five years.

In partnership with the leading auto makers, Optima is taking part in a fuel cell project to develop gasoline-free electric/methanol powered hybrid cars.

Optima is also participating in a project with the U.S. company Powersmart Inc. to create intelligent batteries capable of communicating their current status. The project includes various types of charging systems.

GOALS

Our long-term goal is for OPTIMA Batteries to maintain its status as the world's leading manufacturer of recombinant batteries based on SpiralCell Technology®. We will attain a strong position in the top segment by exploiting our technological advantages. Optima Batteries will set the standard for superior quality, operational reliability and innovation.

The target for 2000 is to optimize the production capacity in our plant and to boost productivity and sales by around 20 percent.

One crucial challenge for Optima in 2000 will be to rationalize distribution and logistics in Europe. At present, there are too many middlemen along the chain before our batteries reach the end-users.

NEW EXECUTIVE MANAGEMENT IN 2000

In April of 1950 I began my career at AB Gylling & Co. In recent years I have naturally been asked when it will be time for me to relinquish executive responsibility for Optima. My recurring answer has been "when Optima feels stable".

Based on my long experience in both the manufacturing industry and the business sector, from the launch of new ideas and unknown products worldwide, in 1992 I assessed that it was fully possible for the OPTIMA battery with the revolutionary SpiralCell Technology® to make significant headway within 4–5 years.

In reality, it took 7–8 years for Optima to make a real breakthrough. We have reached our current position thanks to the endurance, patience, determination and perseverance of everyone involved, fueled by a conviction and belief in the Optima vision.

During the build-up phase we encountered and overcame many intriguing challenges and technical difficulties. The plant met with numerous unforeseen problems and we developed much of the production machinery ourselves. Substantial supplementary investments were required, again and again. Initially, the market showed little interest in a new type of lead-acid battery. The list of setbacks is long, but now the wind has shifted. Optima has proven its strength and the outlook for 2000 is bright.

Today I feel that Optima has matured to the point where I can confidently hand the baton to a highly competent duo, Bengt Hagander and Pär M. Ericsson.

Bengt came to Optima Batteries in 1998 from Tetra Pak in the U.S. At Gylling Optima, Bengt has been Vice President for Marketing and Sales and President of Optima Batteries AB (OBAB). In connection with the Annual General Meeting, Bengt will take over as the new President and CEO. Pär was involved in the acquisition of Optima in 1992, and since February 1999 has been President of Optima's U.S. operations, in addition to being Executive Vice President of the Parent Company. I will continue to serve on the Board of Directors and act as a sounding board for the dynamic duo.

At this moment, as many times during my career, I am reminded of my father's motto, a quote from Horatio:

»Nil sine magno vita labore dedit mortalibus«
»The gods give nothing to man without great labor«

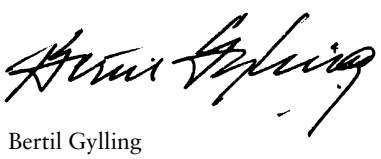
This motto has been a source of guidance and inspiration for me over the many years we have spent building up Optima Batteries.

Together with my excellent and loyal employees, during the 1990s we virtually built a whole new international manufacturing industry from the bottom. At the same time, we established global sales operations in over 60 countries and made Optima Batteries a well known name that is synonymous with quality and superior performance.

From an industrial perspective, we have achieved extraordinary results. We have created a company with a real asset value that has now crossed the threshold to robust earnings growth.

Now, as I resign as President and CEO of Gylling Optima Batteries AB (GOBAB), I extend my heartfelt gratitude to everyone who has contributed to this development.

I look forward with confidence to stable value growth for Optima's shareholders.



Bertil Gylling

OPTIMA SPIRALCELL® TECHNOLOGY

Business concept, goals and strategies

Optima Batteries is a research and development company in the field of battery technology. Operations are focused on SpiralCell Technology®, in which Optima Batteries is the world-leader.

BUSINESS CONCEPT

Optima Batteries' business concept is to develop, produce and market rechargeable, zero-maintenance and high-quality batteries based on SpiralCell Technology®.

BUSINESS GOALS

Optima batteries shall be a leading player with solid profitability in the global battery market, and shall attain a position in the top segment based on SpiralCell Technology®. Optima Batteries' goal is stable growth with good profitability and increasing shareholder value. One long-term target for Optima Batteries is to capture 5–10 percent of the top segment of the battery market in Europe and the U.S., corresponding to 2–4 million batteries.

The target for 2000 is sales growth of over 20 percent.

VISION

Optima Batteries shall be a profitable, international, pacesetting, innovative and responsible company in the market for electrochemical power sources.

STRATEGY

In order to meet the operational goals, a number of strategies have been formulated.

- to continue intensive development of SpiralCell Technology® and develop whole new battery types and battery manufacturing methods.
- to strengthen and streamline the sales channels in existing markets.
- to penetrate new markets and market segments, such as the new 36-volt battery and telecommunications.
- to prioritize quality work in the Group in order to maintain high quality in everything from products to service.
- to improve cost-efficiency in all of the Group's operations.
- to develop business-to-business and e-commerce systems.

U.S. market paves the way for Optima's turnaround

Optima Batteries is active in the market for high performance batteries. OPTIMA batteries are based on SpiralCell Technology® for exceptional power, longer life and superior quality.

The global market for automotive batteries amounts to 250 million batteries per year, of which Europe and the U.S. account for around 170 million. 15–20 percent of the European and U.S. market consists of high performance batteries. Optima's target is to command 5–10 percent of this market, which represents a potential sales volume of around 2–4 million batteries. The battery market is growing by approximately 2–3 percent annually, and Optima's segment by 5–10 percent. In 2000 Optima anticipates a sales volume of over 600,000 batteries (508,000).

There is an ongoing effort to boost productivity in the plant in Denver. In order to meet rising demand, Optima has drawn up an action plan including investments and partnership agreements to increase production capacity on a global basis.

DEVELOPMENT OF OPTIMA'S MARKET

Today Optima works in a global market with operations in North America, Europe, Asia, the Middle East and Africa. The customers are professional users who understand battery technology and demand high performance, as well as amateurs with an awareness and appreciation of high capacity and superior quality.

Optima's market can be divided into several segments. The two most important are cars and agricultural equipment, which together account for close to 60 percent of the sales volume. The other segments are construction machinery, defense, heavy vehicles and marine applications.

OPTIMA SERVES THREE DIFFERENT DISTRIBUTION CHANNELS

The global market is generally divided into three distribution channels, Original Equipment Manufacturer (OEM), Retail and what Optima calls 2–3 stage distribution.

OEM

OEM is the market for original equipment and accounts for 20 percent of the U.S. market and 17 percent of the European market. The rapid proliferation of SUVs (Sport Utility Vehicles) has stimulated demand for high power, top quality batteries.

Demands on European auto makers to comply with new environmental regulations have favored technologies that require the kind of performance an OPTIMA battery can deliver, fast starts in combination with superb deep cycle power. As a result, OPTIMA is being used in development projects for several new auto platforms models to be launched in the next few years.

RETAIL

Retail, or the market for sales to dealers, is growing by over 10 percent annually and accounts for 40 percent of the U.S. market and 30 percent of the European market. Retail has generally shown the highest growth of all of Optima's distribution channels, and therefore has top priority. In 1999 a technology agreement was signed with GNB, one of the world's largest battery manufacturers and recyclers. This represents a real breakthrough for Optima. Under the agreement, GNB will market OPTIMA through the U.S. retail market. GNB has around a 30 percent share of the U.S. retail distribution segment.

2–3 STAGE MARKET

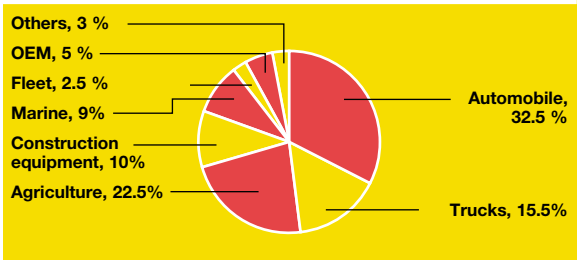
The 2–3 stage market comprises sales to dealers, who in turn sell to workshops, etc., who then sell to end-users. This market is showing annual growth of 2–3 percent and consists mainly of players such as Interstate Batteries of the U.S., with which Optima has a collaboration agreement. This is Optima's traditional market, where each battery is sold by trained and experienced personnel.

USA

The U.S., accounting for over 60 percent of the sales volume, is still Optima's most important market. Optima's manufacturing plant is located in Aurora, Colorado.

The U.S. is seeing a sharp rise in the number of so-called SUVs (Sport Utility Vehicles), such as Jeep, Land Rover, Ford, etc., which account for close to 50 percent of all new sales in the U.S. Since SUV's demand extra cranking power, the customers often choose high performance batteries as the standard. Optima sees major potential in this

Optima's global sales by segment



fast-growing aftermarket, to which over one million batteries were sold in 1999.

One of the year's highlights in the U.S. market was Optima's agreement with GNB, one of the world's largest battery companies. Optima's profile as a research and development company is a valuable complement to GNB, which has relatively little R&D in gas-recombinant battery technology. Another of the year's key events was the world's largest battery manufacturer Exide's introduction of its specially developed spiral wound or "orbital grid" battery in the automotive market. The launch has led to a polarization of the market, with positive effects for Optima, and has accelerated the process of acknowledging SpiralCell Technology® as a standard.

In 1999 Optima was approved as a subcontractor to the U.S. Department of Defense, generating a 40-percent increase in sales to the military sector during the year. As an approved supplier, Optima is listed on the U.S. government's electronic marketplace FedCenter, which is the largest of its kind. Optima expects further sales growth in this market.

EUROPE

Europe accounts for around 30 percent of Optima's sales. The European market has not developed as anticipated, partly due to the unfavorable dollar rate, which was very troublesome and had a heavy impact on margins.

In 1999 most of the major auto manufacturers showed an interest in, and tested, OPTIMA. As a result, Optima will need to establish partnerships for production and distribution in Europe.

One milestone in the automotive industry is the shift from the traditional 12-volt to a 36-volt battery. The technology-intensive vehicles manufactured today place higher demands on the performance and quality of the power source. Since SpiralCell Technology® has the highest performance on the market and is well suited to 36-volt technology, this trend will stimulate demand for Optima's products in the near future. In Europe, Optima has developed a 36-volt battery in association with leading auto makers, and the goal of the project is to start deliveries of these batteries during 2002. The general assessment is that the 36-volt battery will be adopted as the standard in the new car market as early as 2003.

ASIA

Today around 7 percent of Optima's sales go to Asia, another region where Optima is seeking partners in the retail market. At the end of 1999 Optima opened a local sales office in Japan, which is Optima's most important Asian market, together with Taiwan.

Asia suffered a financial crisis in the second half of 1998 and Optima predicted that 1999 would also be a tough year. However, Optima's ventures in Japan and Taiwan generated a volume increase of 2 percent in the Asian market as a whole and demand increased further towards the end of the year. Optima is closely following developments in this market during 2000, when buying power in the region is expected to recover.

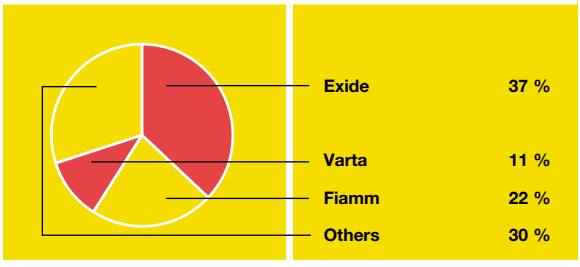
MIDDLE EAST AND AFRICA

Optima is also active in the Middle East and Africa. Today this market accounts for a marginal share of Optima's sales, but showed growth of 20 percent during the year. Optima has strengthened its focus on the region by employing staff with local sales and marketing experience.

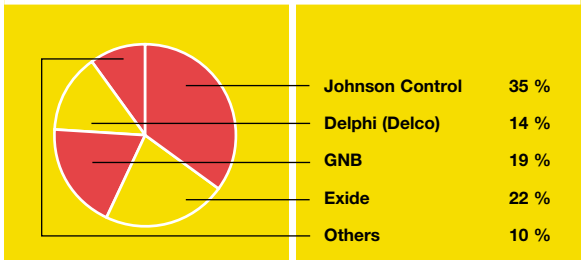
COMPETITORS

In the market for automotive batteries, there are a few large global players and numerous regional players. However,

Major players in the European automotive battery market



Major players in the U.S. automotive battery market

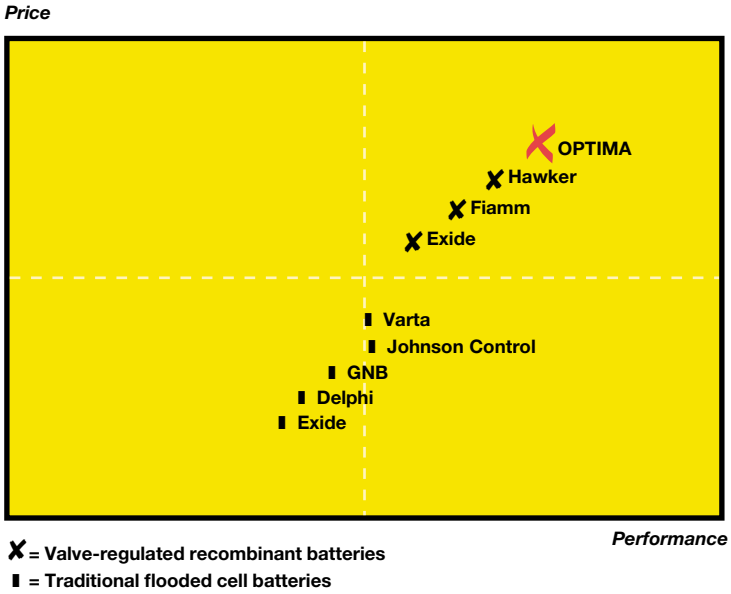


Optima has a strong focus on its research and development, performance enhancements and new battery technologies with independent distributors worldwide. This constellation is unique, and makes the competitive situation somewhat diffuse. Because of this constellation, Optima is able to challenge the R&D departments of the industry giants particularly in the starter battery segment, where funding has generally been modest.

The world's largest battery manufacturer is Exide, an American company that owns the Tudor brand in Europe, among others. In 1999 Exide introduced its new spiral wound battery, although OPTIMA batteries are still considered more technologically advanced from a perform ance standpoint. Optima has patented certain aspects of its process and the competitors have not been able to achieve comparable performance. Aside from Optima and Exide, Johnson Controls in the U.S. has a more compact spiral wound battery for smaller applications than automotive batteries.

Other competitors include Fiamm in Europe and Hawker in the U.S., which compete mainly with a similar chemical process, gas-recombinant technology. Fiamm is a leader in conventional batteries, but has a smaller line of so-called flatplate recombinant batteries. Hawker is specialized in industrial applications such as standby batteries for power backup, which are used in computer environments, cellular base stations, etc.

MARKET POSITIONING IN EUROPE AND THE U.S.



OPTIMA UNIVERSITY

Optima applies rigorous quality standards, not only for the products themselves but also for sales, marketing and service. Since Optima has elected a strategy based on dealers outside the company's own organization, these dealers must meet stringent requirements. The most important are familiarity with Optima's strong brand, knowledge of product performance and an understanding of the technology that gives these batteries their superior quality and justifies their higher price.

In 1993 Optima launched a training program under the name of Optima University to promote the relatively unknown SpiralCell Technology® and OPTIMA products.

Optima also developed a manual that is still used as the basis for dealer training. The book is called *The A to Z of Batteries* and has been translated to 16 languages. In 1999, some 1,000 people were trained in OPTIMA SpiralCell Technology®. Trained dealers are certified as AED, Authorized Educated Dealer, of OPTIMA batteries. Today around 11,000 dealers have participated in this training and now serve as professional and loyal ambassadors for Optima.

THE FUTURE

Growth in Optima's market is dynamic. The entire automotive industry is focusing on high performance batteries that deliver good cranking power and deep cycle properties. Continued growth in the SUV market, the introduction of 36-volt systems and Exide's launch of spiral wound batteries are a few of the contributing factors.

Optima is seeking strategic partners for manufacturing and distribution in Europe and Asia in order to boost competitiveness in these markets. The focus is also on optimizing the existing production capacity. This, coupled with Optima's R&D in alternative technologies such as batteries for fuel cells and "smart batteries", gives Optima reason to look to the future with confidence, in both the short and long term.

How an OPTIMA battery works

The SpiralCell Technology®, which Optima was first to develop and introduce on the global market, is based on thin lead plates that are wound into tight spiral cells instead of being immersed a pool of electrolyte.

With SpiralCell Technology®, the electrode surface is 50–100 percent larger than in a traditional battery. The close proximity of the lead plates lowers the internal resistance. This has been a well known fact in battery development for many years, but one problem has been how to keep the right amount of electrolyte locked in a cell.

Optima solved this problem by allowing the electrolyte to be absorbed by the porous glass separator material like a sponge. With this design the lead plates can be placed very closely. The precise amount of electrolyte in the glass fibers provides a means for chemical reactions between lead dioxide and metallic sponge lead, the active materials in a battery.

The compact design limits the amount of active material that can sluff off of the lead plates. Such sluffing occurs in all lead acid batteries, but Optima's design greatly retards this process.

The design of the case is based on the tubular shape of the cells, making the battery flexible and easy to install. The unique case design also is a valuable marketing tool.

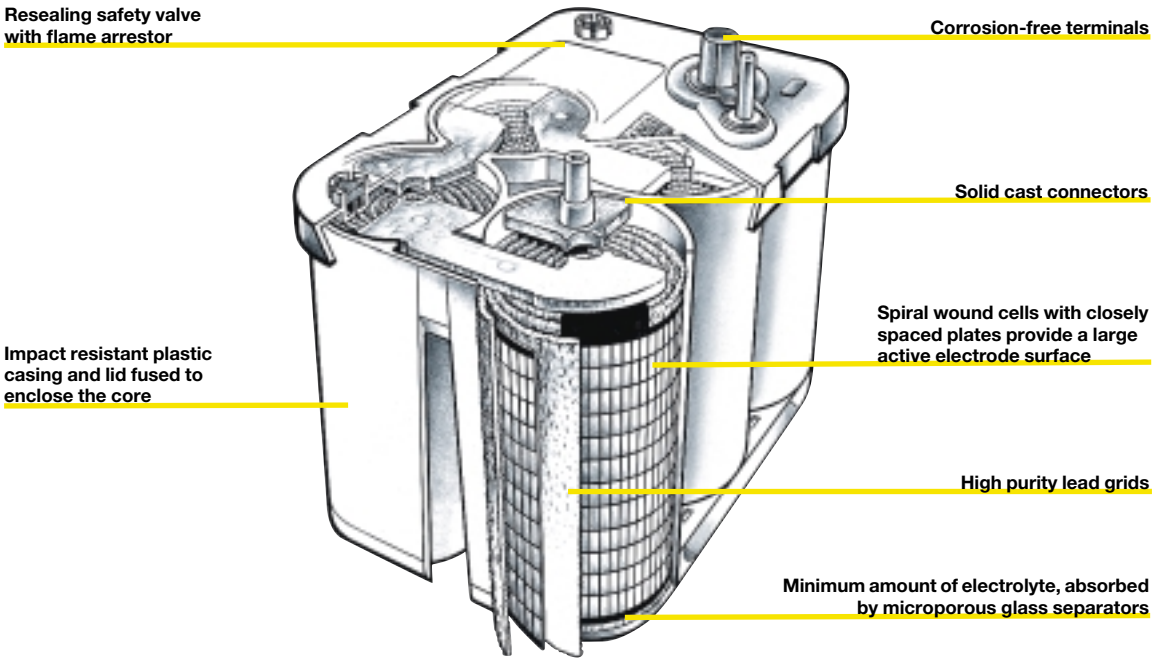
HOW A CONVENTIONAL BATTERY WORKS

A battery supplies more power the greater the electrode surface area, the purer the lead material used in the electrodes and the lower the resistance between the electrodes.

A automotive starter battery must be limited in size, which also limits the size of the electrodes. In a traditional lead-acid battery, the plates are immersed in an electrolyte bath and there must be room for the sludge created by the chemical reactions to fall to the bottom and the gas to rise to the surface. This means the plates can't be placed too close together.

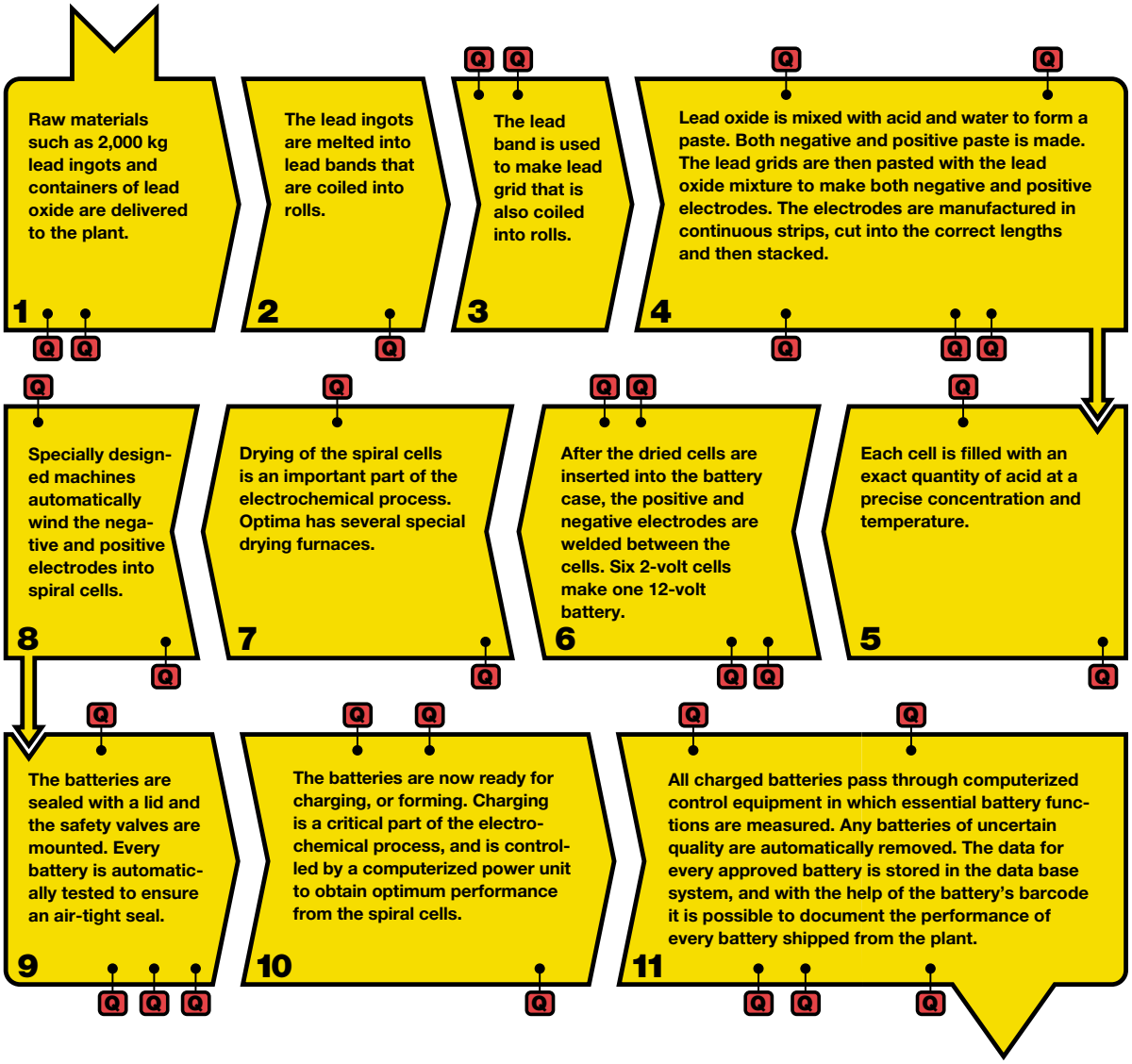
The electrodes in a conventional starter battery are made of lead grids that support the active materials, lead dioxide and metallic sponge lead materials. Consequently, the lead grids must be fairly strong and reinforced with an alloy of antimony or calcium to withstand stress. Such batteries develop a strong internal resistance that detracts from their output performance.

SPIRALCELL TECHNOLOGY®



Production process – flow chart

Production of OPTIMA batteries in Aurora spans the entire process from manufacturing of lead bands to packaging and delivery of pre-charged batteries.



Control points
In order to ensure quality, quality control is carried out at around one hundred points throughout the production process.

Quality control
A final quality control tests voltage and internal resistance – now the batteries can be delivered to the customer!

OPTIMA SPIRALCELL® TECHNOLOGY

Products

The Red Top starter battery is the backbone of Optima's operations. The deep cycle Yellow Top battery is well established and the recently launched Orange Top is capturing market shares in Europe.

Optima launched several new products in 1999. In September a new battery in the Red Top family was introduced – Red Top 925 – with high performance and a compact case. The battery is suitable for mid-sized vehicles, as well as machinery and engines, that require high cranking power. The Red Top 925 will go to market in early 2000.

In collaboration with Coulombi Chargers AB, Optima has developed a line of advanced chargers for VRLA and conventional batteries. The new line of chargers is consistent with Optima's core business and provides excellent scope for further penetration of prioritized markets and segments.

RED TOP

YELLOW TOP

ORANGE TOP

CLEAR POSITIONING

Today Optima's market consists primarily of professional users in demanding segments, whether deliveries for military applications, emergency vehicles or the marine market. These users are all dependent on equipment that works around the clock and under extreme conditions. Optima's market can be divided into a number of segments – Automotive, Agriculture, Construction, Industry, Military and Marine.

OPTIMA batteries are grouped and clearly positioned in four product families targeting different types of vehicles, machinery and equipment.

PROFESSIONAL STARTER BATTERIES

The Red Top is in the original family of professional starter batteries. The target groups are agricultural machinery, building and construction equipment, specialized machinery and back-up power installations.

The family now includes the Red Top 1050 for large engines. At the end of 1999 Optima launched the Red Top 925, which was developed to meet rising demand for a more compact high performance battery.

In the important U.S. market, Optima signed a long-term agreement with the American battery manufacturer GNB, under which GNB will market the Red Top 925 under its own Champion® brand name.

Both Red Top batteries are offered in standard models with special GM adapted side-mounted terminals for the U.S. market.

OPTIMA SpiralCell Technology® provides more power for faster, crisper starts, regardless of the temperature. Although the Red Top is no bigger than a conventional car battery, its cranking power is comparable to batteries up to three times its size. The Red Top battery is capable of starting a large diesel engine in extreme cold of down to –40°C.

Greater plate surface area enables fast recovery and longer life than a conventional battery. The Red Top has exceptional durability in high heat environments, something that normally damages traditional batteries through evaporation of eletrolyte.

AUTOMOTIVE BATTERIES

The Orange Top is the second family of starter batteries. The Orange Top is an extra powerful automotive battery for the automobile market designed for diesel, sport, luxury, racing cars and SUVs produced in Europe and Asia.

The Orange Top 800 was launched on the European market in 1998. Like the other OPTIMA batteries, it offers superior cranking power, zero maintenance and long life. A smaller version, the Orange Top 700, was introduced at the end of 1999.

DEEP CYCLE BATTERIES

The third family is the Yellow Top, which complements the Red Top and Orange Top for applications requiring deep cycle capabilities and extreme cranking power. The Yellow Top 1000 was introduced in 1996 and is a deep cycle battery that combines exceptional cranking power

with long current discharge. The target groups for the Yellow Top are electric vehicles and machinery, emergency vehicles, agricultural and forestry machinery, building, construction and telecom equipment.

The Yellow Top 1000 is made to endure current depletion over a long period of time, which means a deep discharge, and to withstand a large number of discharge/charge cycles. Compared with the Red Top and Orange Top, the Yellow Top has more powerful electrodes with thicker plates and denser active chemical paste material.

MARINE BATTERIES

The fourth family, Blue Top, consists of batteries specially designed for marine applications. This family is made up of the Blue Top 1000, with excellent cranking power, and the Blue Top 900, with good deep cycle performance. The marine batteries are highly vibration resistant, emit very little gas and are therefore especially suitable for hard-to-reach areas. OPTIMA last long even if they are not used regularly, such as when a boat is stored over the winter.

CHARGERS FOR ENHANCED PERFORMANCE

Effective charging is essential for a well functioning battery, regardless of the brand or technology, and is even more important for the users Optima targets.

Batteries can be divided into conventional and gas-recombinant batteries. The chargers currently available on the market are designed primarily for conventional batteries and their charging properties.

Few manufacturers make chargers for recombinant batteries such as OPTIMA, and those available are generally large and bulky. The right combination of battery/charger further enhances the performance and life span of OPTIMA batteries. With this in mind, Optima has developed an advanced range of chargers as a natural part of its ambition to be the world leader in battery technology.

OPTIMA chargers are small but extremely effective, and can be used for all battery types except gel batteries.

The new line of chargers was launched in all of Optima's markets at the end of 1999.

INTELLIGENT CHARGING

With conventional chargers it is common for batteries to be "cooked". When a battery is maintenance charged over a long period of time, it often continues to charge even after reaching full capacity. This overcharging shortens the battery's life span and causes it to deteriorate. The OPTIMA chargers are voltage regulated and automatically switch to float charging when the battery is full.

NEW BUSINESS OPPORTUNITIES

OPTIMA chargers create new business opportunities for Optima's dealers and enable them to deliver package solutions in the OEM segment, etc.

BLUE TOP

RTC CHARGER

YTC CHARGER

OPTIMA SPIRALCELL® TECHNOLOGY

A global player

The Gylling Group acquired Optima Batteries in 1992 and has since then shaped Optima into one of the world's leading development companies in the field of battery technology. Today Optima Batteries is a global industrial group with sales in over 60 countries and a manufacturing plant in Aurora, Colorado. The Group has approximately 230 employees and is headquartered in Stockholm, where the Gylling Group originated in 1912.

The Optima Group is made up of 6 companies, including associated companies. The Parent Company Gylling Optima Batteries AB has been quoted on the Stockholm Stock Exchange since 1997. Operations have been conducted primarily through the subsidiaries Optima Batteries AB and Optima Batteries Inc. in the U.S. Effective 1 January 2000, operations in Gylling Optima Batteries and the sales company Optima Batteries AB were merged to form a competitive and cost-effective unit.

At the beginning of 2000, Optima in Germany established Optima Batteries Germany GmbH as a step in development of the 36-volt battery for the automotive industry.

Optima has opened a local office in Japan as a powerful indication to the automotive and OEM market of the company's long-term presence and committed focus.

Research and development is not only conducted in the U.S. company but also through the associated company EFF Power AB. Optima has had an R&D project in collaboration with Volvo Technology Transfer AB since March 1999 that is being conducted through EFF Power AB. The collaboration is aimed at developing a new type of battery with higher power density.

E-COMMERCE INTRODUCED

After merging at year-end, Gylling Optima Batteries AB will have approximately 20 employees. Aside from group-wide functions such as financing, legal affairs, accounting, brand management, communication and IT strategies, the Parent Company now also handles sales and marketing activities for all markets outside the Americas.

Optima Batteries Inc. is the largest unit in the Group and is the organizational branch to which the manufacturing plant belongs. Optima Batteries Inc. has some 210 employees and, aside from manufacturing batteries, also conducts research and development and coordinates sales and marketing in the Americas.

Optima cultivates its markets through an extensive network of over 250 distributors and 11,000 dealers. Today Optima has virtually no direct sales to end-users. The Group's IT proficiency will be critical for ongoing business development. E-commerce in the business-to-business segment will be launched during the current fiscal year.

To keep lead times as short as possible for the distributors, Optima has built up buffer stocks in the U.S., Europe and Japan.

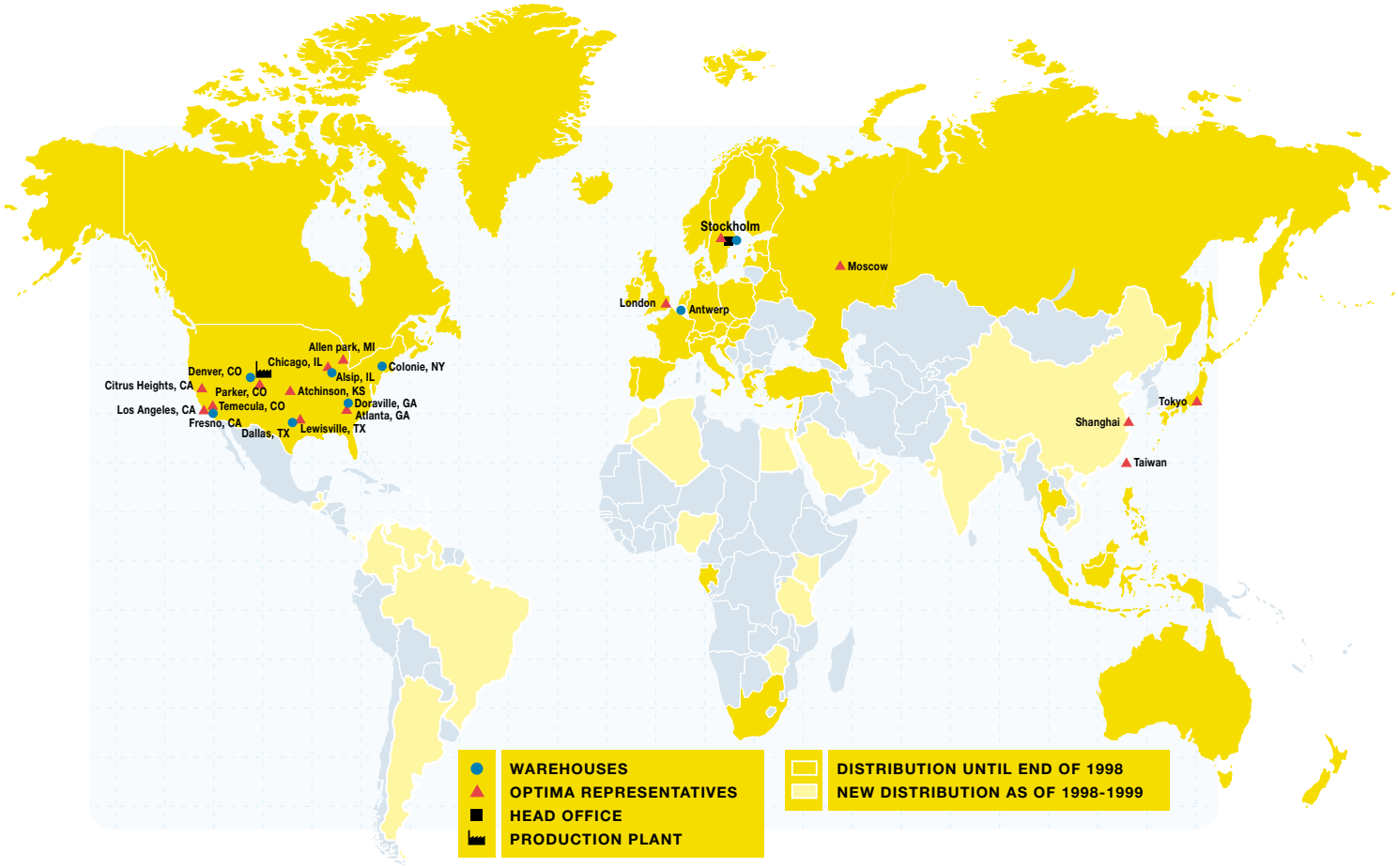
HIGHER PRODUCTION

Optima Batteries Inc. is responsible for production and sales in the Americas.

The production plant in Aurora, Colorado was completed in 1996 and is one of the world's most state-of-the-art battery manufacturing facilities. In 1999, over 500,000 batteries were produced.

Battery manufacturing based on the SpiralCell Technology® is highly complex, and in 1998 several measures were taken to safeguard quality, flexibility and productivity. Substantial investments in extended production capacity were made during the year, primarily in new machinery, improved logistics and more efficient flows to meet the anticipated volume growth with faster and more consistent production and fewer interruptions. Investments in 1999 amounted to 3 million USD. Additional expenditure will be necessary to achieve higher flexibility in production and boost operational reliability.

A Swedish production manager was appointed during the year, Börje Maleus, formerly from ABB Generation. His wide-ranging experience of complex production systems has quickly paid off. In the final quarter of 1999 production of standard OPTIMA batteries was increased and material losses were below budget. The goal for the current year is to raise production volumes from the 1999 level of 1,900 batteries per day to an average of 2,400 in 2000.



NEW MANAGEMENT AND ORGANIZATION

Senior management in the U.S. was restructured during 1999. In February 1999, Pär M. Ericsson was made President of the U.S. company and a new management team was appointed. The new organization was structured according to a Swedish matrix model that is based on greater openness and short decision-making paths. The changes have been very well received. Today all U.S. employees have direct access to senior management. At the end of the year employee turnover decreased, quality improved and productivity increased month by month.

The new management has also implemented a salary and bonus system based on the Swedish model and introduced new programs for employee training and development.

A new management team for the Optima Group was presented after the end of the fiscal year. At the Annual General Meeting on 18 May, Bengt Hagander and Pär M. Ericsson will succeed Bertil Gylling, who will continue to serve on the Board. Bengt Hagander will take over as President and CEO. Pär M. Ericsson will remain as Executive Vice President and President of Optima Batteries Inc.

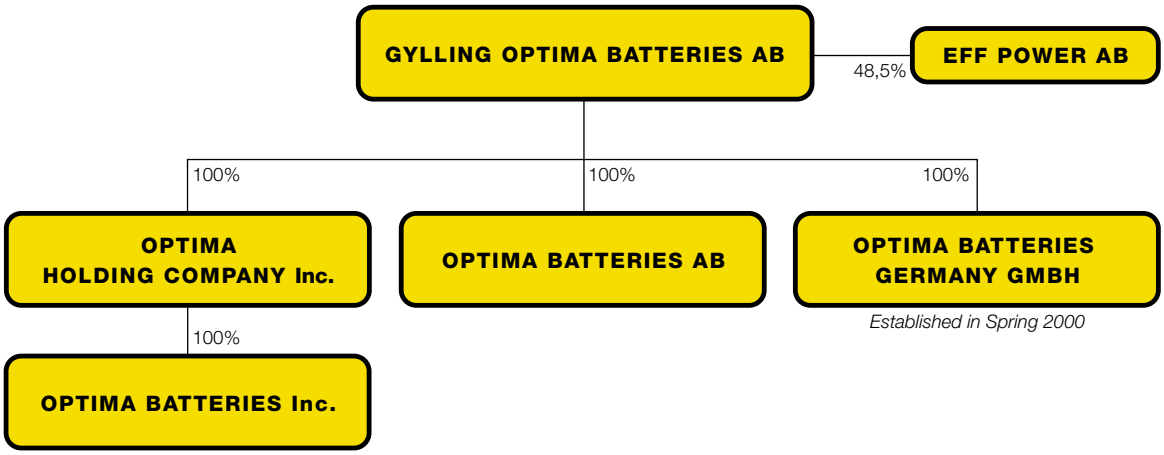
COMPETENT EMPLOYEES

Optima's ability to attract and retain skilled employees is crucial for the company's future sucess. Optima's staff must be knowledgeable, service-minded and result-oriented. This demands both a high level of expertise and training.

Optima invests in continuous employee training and development to maintain its cutting-edge position. During the year, employee development focused on enhancement of IT skills to ensure that all employees can utilize new technology in an optimal manner.

New employees complete an introductory course, ensuring that all have the same basic knowledge of the company

OPTIMA SPIRALCELL® TECHNOLOGY



and its products. The course is also tailored to the type of position for which the employee was hired.

The plant in Aurora is one of the most technologically advanced in the world. This creates many challenges for the U.S. staff, for which reason significantly more training is given than is customary in the industry.

Internal communication is vital in promoting the right team spirit and to facilitate fast and decisive action.

Optima's global operations include marketing activities in more than 60 countries. This work has proven to be a powerful attraction in recruiting and retaining qualified personnel.

Tom Nguyen, Quality Manager at Optima's plant in Aurora, has worked with Optima batteries since the 1980s.

A WIDE VARIETY

The Optima Group has approximately 230 employees, of whom 140 work in production and 90 in administration, marketing and sales. Of the total, 18 percent are women and 82 percent are men. The employees have varied backgrounds: 1 percent have a doctorate, 10 percent a master's degree, 21 percent a university degree, 11 percent a technical degree, 9 percent have the equivalent of a college education, 45 percent are high school graduates and 3 percent have a high school education or similar.

Key staff in the Group are offered the opportunity to participate in a stock option program that gives them a stake in Optima's long-term development.

Sales Growth in Collaboration with GNB

In 1999 Optima entered a 5-year distribution and technology development agreement with GNB Technologies Inc. of the U.S. According to the agreement, GNB will sell Optima's SpiralCell batteries under the Champion brand name. Optima's batteries will complement GNB's already strong product portfolio.

GNB Technologies is an integrated provider of power technology products. It manufactures and recycles lead-acid batteries for the automotive, recreational boating, farm, heavy duty truck, electric utility, industrial electric vehicle, photovoltaic, lift truck, railroad, telecommunications and uninterruptible power supply markets in more than 50 countries.

GNB manufactures and markets automotive batteries under one of the world's best-known brands – Champion.

STRONG ENVIRONMENTAL COMMITMENT

GNB has a strong commitment to the environment. Every year, millions of batteries from the consumer market are recycled in the company's three recycling facilities.

GNB is one of the world's leading battery recyclers, and up to 90 percent of a new GNB battery consists of recycled materials.

AGREEMENT WITH GNB

Optima sees an important breakthrough in the agreement with GNB. For Optima, the agreement means that the company will have access to GNB's extensive marketing and sales organization and that GNB will market Optima's batteries under the Champion brand name. The relationship with GNB is expected to generate significant sales growth for Optima in the U.S.

GNB has a strong position in the U.S. retail market which continues to show significant growth. This is a channel to which Optima has not previously sold batteries.

Champion Vortex is sold via "retail" and caters to the American automotive aftermarket. The typical target groups are 4x4s, SUVs and race cars.

- **900 CA, 700 CCA**
- **45 Ah**
- **88 minute standby capacity**

CHAMPION

OPTIMA SPIRALCELL® TECHNOLOGY

A matter of seconds...

Traffic at Arlanda Airport never stands still. From early morning to late night, the Nordic region's largest airport is buzzing with activity. Every year, over 270,000 takeoffs and landings take place at Arlanda, where the Swedish Civil Aviation Authority is responsible for the safety of 17 million people.

The Civil Aviation Authority manages operations at Arlanda Airport, from air traffic control to safety aspects such as fire and rescue services, as well as maintenance of runways and taxiways. The Civil Aviation Authority has over 800 employees at Arlanda, where rescue and maintenance personnel are an important part of airport operations. Together, they have more than 100 service vehicles.

These vehicles are subject to rigorous demands. Operational reliability is essential for a working airport. Takeoffs and landings are carried out in fog, darkness and snow storms. With the safety of millions of people at stake every day, nothing can be left to chance. A vehicle that won't start or is delayed by a poorly charged battery is unacceptable.

THE RIGHT EQUIPMENT

Aircraft fires differ from "normal" fires through their rapid spread in which a large quantity of aviation fuel is involved. For this reason, fire and rescue services must respond immediately to prevent a catastrophe. The airport firefighters have higher preparedness than other firemen and their training and equipment is designed to quickly and effectively combat aircraft fires and save lives.

But it is not only Arlanda's fire prevention services that are well prepared. At short notice, the maintenance staff must respond quickly to treat runways and taxiways. A sudden snowfall or sharp fluctuations in temperature can have disastrous consequences.

CHARGERS ENHANCE BATTERY PERFORMANCE

Since the Civil Aviation Authority has many heavy vehicles that consume a great deal of power, it is vital that the batteries are in the best possible condition.

At Arlanda, the Civil Aviation Authority has chosen to use Optima's batteries and chargers. Their unique construction gives OPTIMA batteries superior cranking power even under extreme conditions. Effective charging is essential for a well functioning battery, regardless of the brand or technology. The right combination of battery and charger further enhances the performance and life span of OPTIMA batteries. A battery must be correctly charged to maintain high performance. The charging process must be carried out at the right voltage, which is gradually adjusted for optimum results. OPTIMA chargers are compact but powerful, and can be used for all battery types except gel batteries. Optima's chargers contain a number of microprocessors that regulate the voltage and ensure that the battery capacity is optimized without being overcharged.

OPTIMA YTC chargers is mounted in a large number of vehicles. The possibility of charging the vehicle "flawlessly" anywhere ensures a fully charged battery even in conditions of frequent vehicle use and extensive power withdrawals.

- **7A/220 or 110 V**
- **IP 65, rinse water-tight, intelligent charging**
- **3-year warranty**

YTC CHARGERS


583
113
114
110

New environmental requirements an advantage for OPTIMA

The U.S. Postal Service has one of the world's largest fleets with over 190,000 vehicles. Every year, these vehicles drive a combined distance equal to 4,000 trips around the globe. Following an extensive environmental audit in the early 1990s, OPTIMA emerged as the battery of choice.

The U.S. Postal Service (USPS) is the world's largest postal and distribution company with more than 230 billion deliveries per year and over 40 percent of the global postal volume. In order to deliver all of these items of mail, USPS has more than 190,000 vehicles that together drive over 1,700 million kilometers per year. With one of the largest vehicle fleets on earth, USPS has a substantial environmental impact in the form of exhaust, emissions and waste.

When these issues came into focus in the early 1990s, USPS conducted an audit of the company's environmental impact. The company drafted an ambitious environmental program aimed at reducing emissions and waste, increasing recycling and improving cost-efficiency.

LONGER LIFE

USPS saw that they consumed a large number of starter batteries every year and that these batteries had a relatively short life span averaging only two years.

With frequent cold starts, these batteries were subjected to repeated discharges that required high cranking power. In 1995 USPS began to evaluate batteries from various suppliers and OPTIMA achieved the best test results. The battery proved to have a life span up to thee times as long as a traditional battery. With a longer life, USPS could reduce the number of batteries used. The fact that OPTIMA was 100 percent recyclable was an additional reason for choosing Optima as a supplier.

The long life of OPTIMA also made it possible to reduce the total life cycle cost, despite their higher price. Instead of buying a new battery every 2 years, now USPS will only need to buy a new battery every five years.

As an expression of USPS's extensive commitment to the environment, today the company has the largest fleet of natural gas-driven vehicles in the world and is conducting large-scale testing of electric/ethanol hybrid vehicles.

The U.S. government has tightened its environmental requirements for conventional batteries. As a result of this and the battery's other properties, OPTIMA has been recommended for use in all areas where there is exposure to the general public.

But USPS has discovered other advantages with OPTIMA. The battery's air-tight construction makes it leak-proof, for which reason USPS has classified it as non-hazardous and non-explosive, which means the battery can be sent by mail! The U.S. Department of Transportation (DOT) and the International Air Transport Association (IATA) have given OPTIMA the same classification. Consequently, it is possible to ship the battery in every conceivable manner – by land, sea or air.

Optima has been a supplier to USPS since they began evaluating batteries in 1995. Within USPS there are 175 service and maintenance facilities, and even though USPS has recommended OPTIMA at the central level, it is crucial to penetrate the entire organization which is largely made up of autonomous units. According to Optima's calculations, USPS could save 10 million USD per year if they chose OPTIMA. Optima anticipates further sales growth.

RED TOP 1050

This is the OPTIMA battery with the highest cranking power. Aside from its reliability, OPTIMA is almost 100 percent recyclable and has a life span that is twice that of traditional batteries.

- **1050 CA, 830 CCA**
- **56 Ah**
- **112 minute standby capacity**

Extreme cold a winning factor for OPTIMA

In 1994, U.S. Air Force's Ground Equipment group began an evaluation process to find a battery with high operational reliability, exceptional performance and endurance in extreme conditions.

At the beginning of the 1990s the U.S. Air Force had detected problems in their ground equipment in cold areas such as North Dakota, Alaska and Greenland. Vehicles that won't start lead to extra work, delays and higher costs. The cold climate subjected the batteries to many power depleting cold starts, demanding high cranking power. Ground maintenance uses heavy vehicles that consume a great deal of power and therefore require exceptional cranking power and deep cycle properties. Operational reliability in all conditions is critical for ground maintenance in the U.S. Air Force. The vehicles must be able to respond quickly for immediate service, loading and unloading of departing and arriving aircraft.

In 1994, the U.S. Air Force began testing batteries from different suppliers, including Optima for its ground support equipment. The batteries were tested in a number of extreme environments and OPTIMA achieved good test results. Thanks to its unique construction, OPTIMA had excellent cranking power even in extreme cold and its electrolyte did not evaporate in severe heat. Furthermore, the battery proved to have a life span up to three times that of traditional batteries.

In early 1995, the U.S. Air Force's buyers decided to recommend OPTIMA as the preferred choice. The battery was rated superior in several respects – with regard to both performance and total operating economy.

The decision gave Optima its first delivery to the American government.

NEVER MORE THAN 24 HOURS AWAY

After the initial sale to the U.S. Air Force, the government has introduced more stringent battery requirements, primarily environmental criteria for conventional batteries. The government has recommended OPTIMA for use in all areas of public administration, largely due to their long life and 100 percent recyclability. And since the battery is neither a health hazard nor explosive, it has been classified as non-hazardous and non-spillable by the U.S. and international authorities. Consequently it can be sent in every conceivable way – by land, boat or air. This means an OPTIMA battery is never more than 24 hours away; a top priority in most branches of the military.

DEFENSE ONLINE

After its breakthrough in the U.S. Air Force, Optima has been selected as a supplier to other parts of the military.

This generated a 40-percent sales increase in the segment during 1999. As an approved supplier, Optima is listed on the electronic marketplace FedCenter, where all U.S. government agencies worldwide can order goods and materials online. Via FedCenter, EDI orders are placed and sent electronically to Optima, an order confirmation is sent in return to the buyer and payment is made from their account. FedCenter is a valuable channel to the U.S. military, and Optima anticipates further sales growth in this segment.

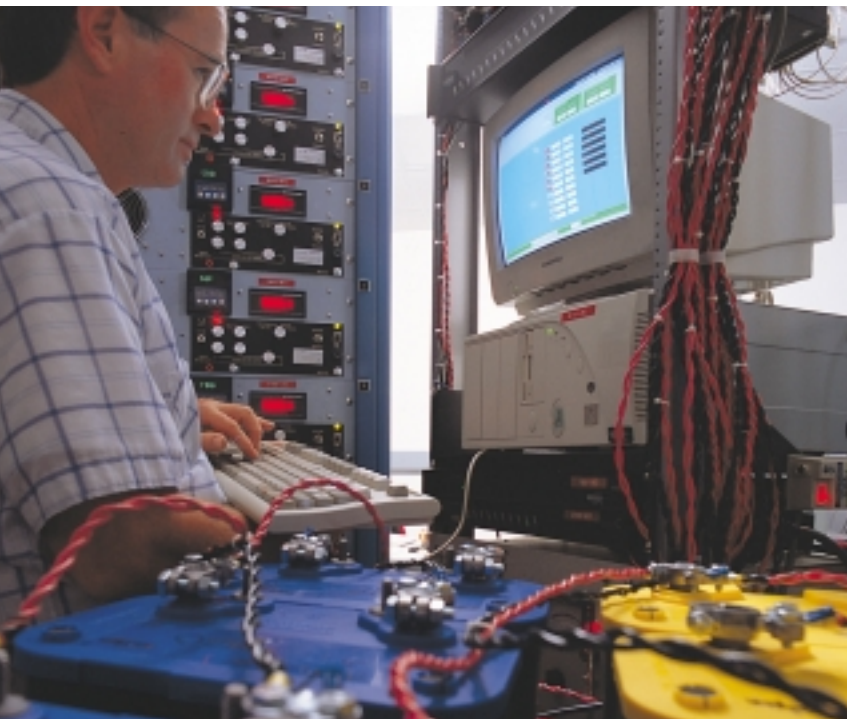
OPTIMA's ability to withstand extreme cold and heat has been decisive for success with the U.S. Air Force. OPTIMA's position has been reinforced by the fact that its batteries have been classified as non-hazardous and can thus be sent by air.

- **1000 CA/750 CCA, 60 Ah**
- **124 minute standby capacity**
- **300 cycles (100% Depth of Discharge, DOD)**

YELLOW TOP 1000

OPTIMA SPIRALCELL® TECHNOLOGY

Research and Development



INNOVATIVE THINKING

Optima's research and development department in Denver is fully equipped to test new battery prototypes, conduct computerized trials of various functions and develop new compounds in its chemical laboratory. Highly trained technicians and engineers have been recruited for product development in the plant and in the field. Optima invests aggressively in R&D to maintain its cutting-edge position in the market for high performance recombinant batteries. SpiralCell Technology® was first developed by General Electric when the company won a NASA contract to develop the first lunar rovers. The technology demonstrated unique cranking power and performance, but also emitted no gasses and was exceptionally vibration and impact resistant. In other words, the battery could withstand extreme conditions. Since 1992 Gylling Optima Batteries has refined and commerialized this technology.

CONTINUOUS DEVELOPMENT

In order to further develop the batteries' power and functionality for the future, Optima is taking part in several interesting technological collaborations and development projects.

Optima has teamed up with Volvo to form the joint company EFF Power AB. Since 1999, this company has conducted an R&D project aimed at developing a new type of battery for heavy vehicles based on patents developed at Chalmers Technical University. Several critical phases have been passed and significant advances have been made. The goal of the project is to develop a new recombinant battery for market launch by 2004.

In close collaboration with several European auto manufacturers, Optima is creating new solutions for the automotive industry, including prototypes for a 36-volt battery. Within five years it is likely that these batteries will be the standard in the new car market.

Since 1998, Optima has been involved in a fuel technology project aimed at developing gasoline-free hybrid cars that run on methanol. These hybrids require a robust battery with good cranking and deep cycle power that is capable of starting the combustion process.

BATTERIES THAT THINK FOR THEMSELVES

Optima has several in-house development projects to equip batteries with artificial intelligence, so-called "smart" batteries. In association with the American company Powersmart Inc., Optima is participating in a project on behalf of the U.S. military to develop batteries that can communicate their current status and remaining life span. The project also includes various types of charging systems.

A PLATFORM APPROACH

The automotive industry has changed over to development of platform-based cars. This means that new platforms and technical solutions are being created for use in a range of car models. For example, the Audi A3, VW Golf, Seat Cordoba and Skoda Octavia are all built on the same platform, and there is a similar trend for trucks and buses. Three years ago Volvo used ten different platforms for its trucks, but within a year or so only two will remain – one for the heavy segment and one for the mid-sized segment. For Optima this means that a single battery type can be used in all models based on the same platform. Optima is taking part in several platform development collaborations with leading auto makers.

NEW ENVIRONMENTAL REQUIREMENTS

A number of countries worldwide have passed stricter environmental legislation, requiring a reduction in vehicle emissions by up to 80 percent. In association with auto manufacturers, Optima is participating in a number of projects

to decrease emissions from gasoline engines.

E-cat is a new technology for improved catalytic converter performance in which the catalytic converter is heated before being reached by the exhaust fumes. A traditional gasoline engine emits the same volume of exhaust during the first 30 seconds after start as during a 200 km drive. With the help of E-cat, exhaust emissions can be reduced by up to 90 percent.

The pre-heating technique creates a substantial power drain on the battery and places heavy demands on deep cycle power, which means that it must withstand power withdrawal over a long period of time. It also requires a battery that can endure repeated charge/recharge cycles. Both OPTIMA Red Top and Yellow Top are well suited for these applications.

BATTERY-POWERED VEHICLES

For several years, Optima has been part of the EUCAR project to evaluate electric car technologies for the European market. Italy is already testing a solution for electric buses and new residential areas outside London will offer electric transport alternatives. This is opening a range of possibilities for OPTIMA batteries, which have the exceptional performance required for these uses.

One result is that Optima is now participating in a project with the Advanced Lead-Acid Battery Consortium (ALABC) for the purpose of developing faster charging capabilities and extended life for recombinant batteries. The initial results have verified a doubling in the number of deep cycles in the Yellow Top battery and the project will continue towards the goal of quadrupling the cycle life. At present, this is a prioritized area of research in the battery industry.

THE FUTURE

Optima is playing an active role in a range of interesting R&D projects. The ultimate goal of these activities is to maintain the company's position as the leading manufacturer of starter and deep cycle batteries. This, together with Optima's research in alternative technologies such as fuel cells and smart batteries, gives Optima reason to greet the future with confidence.

PATENTS AND TRADEMARKS

SpiralCell Technology® for large batteries based on traditional lead-acid solutions was first developed in 1982. The basic patent had already expired when Optima was acquired in 1992.

Over the years of development and production, the intellectual property rights for SpiralCell Technology® have been supplemented with patents on specific parts of the technology and design. A total of more than 20 patents are registered, of which 5 are for the design. Optima has developed 8 of these patents, two of which were obtained in 1998. Optima holds the other patents on license from the original manufacturer, Gates Rubber Inc.

Optima is working to increase protection of its intellectual property. In ongoing project-related research, special attention is being given to technical solutions that can be protected with intellectual property rights.

In the company's continuous product and production development, employees who come up with suggestions for solutions that lead to new patents are rewarded.

Manufacturing of OPTIMA batteries is a highly complicated industrial process in which the various stages have been developed independently by Optima.

Preserving the secrecy of the manufacturing process is judged to be strategically important for the future, due to its complex and unique character.

Optima has registered the trademark SpiralCell Technology® and the logo OPTIMA Batteries – The Ultimate Starter®.

Optima has also registered the stylized SpiralCell Technology® symbol (see below) and is actively promoting V-Tech™ and Optima Spiral Pack™.

The technology and know-how these terms represent will always be of strategic interest and will be safeguarded with rigorous confidentiality.

Optima keeps a strict watch to ensure that the company's intellectual property rights are not infringed upon.

OPTIMA SPIRALCELL® TECHNOLOGY

A focus on reduced environmental impact

Optima has set high standards for environmental work and consideration. The U.S. operations have been structured to comply with legislation on the external and work environments.

Since 1995, Optima has a special coordinator for environmental activities at the production plant in Denver. Optima's operations are reviewed by the U.S. Environmental Protection Agency (EPA) to monitor how waste and emissions from the production process are handled with regard to the external environment.

Optima's environmental work is closely related to the health and safety of its employees, and considerable investments are made to minimize risks. Three people have been hired to take responsibility for these issues in the plant. Close to USD 390,000 was invested in environmental and health measures in 1999.

LOWER LIMITS

The internal environment is regulated by the Occupational Health Administration (OSHA) which also has a special regulatory system for the lead content in the blood of employees and in the air. Optima has successively reduced the lead content in the air, through measures such as a sizeable investment in a new ventilation system in 1998, and the lead content in the employees' blood has been dramatically reduced. No employee had to change work stations due to high readings in 1999.

Various work routines have been introduced to minimize hazardous lead particles – after every shift all work surfaces and production equipment are thoroughly cleaned.

Optima collects and packages all used lead and waste materials according to specific regulations and sends them to a nearby smelting plant.

In the U.S., major efforts have been made to collect used batteries. Stricter environmental regulations and higher awareness among consumers have provided results. During the 1980s some 65 percent of all car batteries were recycled. Today a full 98 percent of all lead-acid batteries are recycled in the U.S. The recycling systems for lead-acid batteries are becoming increasingly effective and closed process. According to an analysis by the Center for Energy and Environmental Studies, only a marginal share of the lead sent to recycling plants, 0.03 percent, has any form of environmental impact. Of the total volume of collected lead, only 0.8 percent is not recyclable.

OPTIMA is almost 100 percent recyclable, which is a strong contributing factor behind OPTIMA's sales success.

All of Optima's environmental investments are followed up financially, and many have proven to be directly profitable.

Continuous quality work at Optima

Optima's U.S. operations are expected to obtain ISO 9001 certification in 2000.

Major end-users are increasingly demanding that their suppliers and subcontractors have quality assured business systems and routines for follow-up and control of quality management systems.

A firmly established quality management system is a key competitive factor that detects and corrects deviations from the company's quality standard at an early stage.

Optima's operations in Sweden have been certified according to the quality management system ISO 9001 since 1997 and Optima Batteries Inc.'s total operations are expected to be certified in 2000.

5-year summary

EXCERPT FROM THE INCOME STATEMENT, SEK 000s	1995	1996	1997	1998	**1999**
Net sales	154,401	198,777	286,840	278,705	**324,462**
Operating income/loss	–25,878	–37,014	7,279	–20,245	**16,691**
Net financial items	–4,359	–7,708	–4,051	–8,687	**–9,648**
Income/loss after net financial items	–30,237	–44,722	3,228	–28,932	**7,043**
Tax	6,960	158	–	–20	**710**
Net income/loss for the year	–23,277	–44,564	3,228	–28,952	**7,753**

EXCERPT FROM THE BALANCE SHEET, SEK 000s					
Fixed assets	94,685	88,694	104,519	104,657	**151,604**
Other current assets	10,554	8,382	22,379	33,733	**35,680**
Inventories	18,576	28,957	57,728	54,116	**43,950**
Accounts receivable	22,542	35,404	51,048	47,137	**60,454**
Cash and cash equivalents	85	81,902	2,826	12,802	**6,114**
Total assets	146,442	243,339	238,500	252,445	**297,802**
Shareholders' equity	1,740	76,563	83,606	88,490	**98,170**
Interest-bearing liabilities	96,921	113,793	99,935	116,666	**151,574**
Accounts payable	24,014	37,804	23,915	28,119	**28,094**
Other noninterest-bearing current liabilities	23,767	15,179	31,044	19,170	**19,964**
Total shareholders' equity, provisions and liabilities	146,442	243,339	238,500	252,445	**297,802**

KEY RATIOS*					
Operating margin (%)	–16.76	–18.62	2.54	–7.26	**5.14**
Profit margin (%)	–19.58	–22.50	1.13	–10.38	**2.17**
Return on shareholders' equity (%)	–160.91	–113.75	4.03	–33.64	**8.31**
Return on capital employed (%)	–24.78	–25.54	6.62	–8.07	**10.70**
Equity ratio (%)	1.19	31.46	35.05	35.05	**32.96**
Debt/equity ratio (multiple)	55.70	1.49	1.20	1.32	**1.54**
Share of risk-weighted capital (%)	1.21	31.48	35.07	35.05	**32.96**
Interest coverage ratio (multiple)	–5.94	–4.34	1.35	–1.18	**1.41**
Average number of employees	241	223	258	209	**226**
Number of batteries sold	301,000	378,000	437,000	444,000	**508,000**
Investments (including leased assets)	85,197	14,438	29,869	21,640	**16,121**

DATA PER SHARE					
Earnings per share after tax	–3.06	–2.50	0.12	–1.06	**0.26**
Cash flow per share	-3.45	5.11	-2.91	0.33	**-0.23**
P/E ratio (multiple)	–	neg	225	neg	**52**
Shareholders' equity (SEK)	0.11	2.82	3.08	2.96	**3.28**
Number of shares (thousands)	80	27,165	27,165	29,915	**29,915**

* For definitions of key ratios, see page 44.

OPTIMA SPIRALCELL® TECHNOLOGY

Risk and sensitivity analysis

Optima's operations are influenced by a number of external factors whose effects on the Group's earnings and financial position can be controlled to a greater or lesser extent. In assessing Optima's future development, it is important to consider both the risk factors and the opportunities for earnings growth.

The risk factors that are considered most critical for the company's future are described below. For obvious reasons it is not possible to describe all factors in detail here, and a complete assessment must include other information contained in this annual report as well as an analysis of the general economic conditions.

DEPENDENCE ON THE BUSINESS CYCLE

Optima is dependent on the general economic trend in the countries and regions where it operates. Sensitivity to the business cycle is lessened by the fact that the Group conducts business in some 60 countries worldwide and that sales in these countries are distributed differently between the segments in which Optima is active.

THE MARKET

One prerequisite for the OPTIMA high price profile is that consumers are aware of the advantages it offers. A full understanding of the economic value of these advantages must be conveyed to distributors and end-users. This places high demands on training of Optima's and the distributor's staff.

The high price profile also means that the OPTIMA brand must be built through the right type of measures, to increase understanding of the product and enhance its value added. If a strong brand is not created, there is a risk that prices cannot be maintained at the desired level.

With this in mind, in 1993 Optima started a training program for its distributors, commonly known as OPTIMA University. Optima's training manual *The A to Z of Batteries* gives the distributors a good basic understanding of batteries in general and OPTIMA batteries in particular.

PATENT AND TRADEMARKS

There is a risk that a new battery technology could compete with the current solutions based on lead-acid technology. Although the basic patent has long since expired, the patents and licenses Optima currently holds will provide protection for some time to come. It is vital that the company protects its complex production process with in-house developed technical solutions through comprehensive confidentiality agreements and restricted access to the premises.

CLIMATIC EFFECTS

The battery market as such is affected by the weather. Sales are highly seasonal, with the strongest demand in the colder months.

The construction of OPTIMA gives it properties that enable the battery to perform particularly well in climatic extremes of cold and heat.

THE ENVIRONMENT

OPTIMA requires lead of a very high purity, which demands a large share of mined lead. This could be a risk factor if mining of lead is imposed with substantial environmental taxes. Close to 100 percent of a lead-acid battery can be recycled, and systems to deal with used lead-acid batteries have been in place for some time.

PRODUCT LIABILITY

The company has taken out product liability insurance for the countries in which it conducts business.

CURRENCY EXPOSURE

All of the Group's production is carried out in the United States by Optima Batteries Inc. The company's operating expenses, with the exception of activities in Sweden, are denominated in dollars.

Sales to North and South America are made from the U.S., whereas sales to the rest of the world are handled by Optima Batteries AB in Sweden. All pricing and invoicing are denominated in U.S. dollars to avoid foreign exchange risks in intra-Group transactions.

In the long-term, however, battery sales outside the U.S. are affected by development of the dollar rate against other

currencies. This is unavoidable as long as the majority of the company's expenses are denominated in U.S. dollars.

Considering the company's competitiveness and valuation of most of its assets, owning shares in Optima is comparable to owning shares in a "dollar-based" company.

RAW MATERIALS

The cost of lead accounts for 50 percent of variable raw material costs. As a result, the price of lead on the world market has a strong bearing on the company's operating income. However, the global supply of lead is abundant and no shortage is anticipated.

CONTRACTS

Optima is not dependent on any commercial, industrial or financial contracts to a degree that could be expected to have a material financial impact on the company or its business activities.

SENSITIVITY ANALYSIS

Gylling Optima Batteries AB's income is affected by a number of factors. The table below shows the effects on income after net financial items of changes in certain parameters. The estimated effects are based on conditions as per December 31, 1999, and each should be seen as an isolated change in the respective variable.

Parameter	Change	Income after net financial items (SEK)
Gross profit	+/–1 %*	+/–3,200,000
Foreign exchange fluctuations		
– effect on net income for the year	+/–0.1 SEK	+/–540,000
– effect on shareholders' equity	+/–0.1 SEK	+/–480,000
Interest rate	+/–1 %*	+/–650,000
Number of batteries	+/–1 %	+/–1,500,000
Price of lead	+/–1 %	+/–500,000

* Change in percentage points.

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Administration Report

The Board of Directors and the President of Gylling Optima Batteries AB (publ) hereby present the following annual report for 1999.

1999 was a turningpoint for Optima in which the breakeven threshold was passed and sales volumes gained momentum.

Net sales, excluding GM, rose by 19.0 percent to MSEK 324.5 (272.6). The sales volume in 1999 increased from 444,000 to 508,000 batteries. Of Optima's various markets, the U.S. showed particularly robust development and accounted for 60 percent of sales. Other markets were inhibited by the high dollar rate.

During the autumn, Optima signed a 5-year strategic distribution and technological development agreement with GNB Technologies Inc., one of the USA's 3 largest battery manufacturers. GNB will sell a smaller OPTIMA under its own Champion® brand name, marked with the text "Made by Optima Batteries Inc., Co". Through GNB, Optima will have access to a new market in the U.S. retail segment.

In Japan, Optima has opened a local office as a powerful indication to the automotive and OEM market of the company's long-term presence and committed focus.

RESEARCH AND DEVELOPMENT

The collaboration with Volvo Technology Transfer AB in the joint company EFF Power AB has been successful. The functionality of key components has been secured and the technology has been documented at the component level.

The intention is to commercialize the project within 3 years. This project is of particular interest, since it gives Optima a gateway to new product areas and markets.

Optima is currently involved in several development projects in association with top European auto manufacturers. One project deals with exhaust emissions control through heating of catalytic converters for the U.S. market, and another with the industry's choice of a 36-volt battery as the future standard. In each project, OPTIMA technology has a prominent position with a planned market launch in 2002/2003.

The charging and cycling project within the ALABC in the U.S. has verified a double cycle life for OPTIMA deep cycle battery technology, and the ultimate goal is to achieve a quadruple cycle life.

KEY EVENTS AFTER THE END OF THE FISCAL YEAR

Organization – new management team

With effect from 1 January 2000, Gylling Optima Batteries AB and the sales company Optima Batteries AB have merged to form a competitive and cost-effective unit.

A new management team, Bengt Hagander and Pär M. Ericsson, will succeed Bertil Gylling in connection with the Annual General Meeting on May 18. Bertil Gylling will continue to serve on the Board.

Bengt Hagander has been appointed as the new President and CEO.

Pär M. Ericsson, who took over as President of the U.S. company during the year, will remain as Executive Vice President of the Parent Company in addition to being President and CEO of Optima Batteries Inc.

OWNERSHIP STRUCTURE

Bertil Gylling and family own 70.17 percent of the share capital and 82.97 percent of the voting rights. The other members of the Board control, directly or indirectly, 3.92 percent of the votes and 2.24 percent of the capital. Institutional owners control 4.84 percent of the capital and 2.76 percent of the votes.

WORK OF THE BOARD OF DIRECTORS

In 1999 the Board held 8 meetings, of which one strategic meeting of the Board was held at the plant in Aurora, Colorado.

A procedural plan for the Board of Directors' work and a statement of President's responsibilities have been adopted. The specially appointed Group-wide bodies are the Technical Advisory Board and the Marketing Council, which meet alternately in Danderyd and Denver. Their primary task is to deal with strategic issues in their areas of responsibility.

FORECAST

The executive management and the Board of Directors predict that 2000 will develop favorably and generate further volume growth for the corporate group.

PROPOSED APPROPRIATION OF LOSSES

In order to restore the Parent Company's unrestricted equity, the Board of Directors proposes that the Annual General Meeting resolve on a reduction of MSEK 5 in the company's premium reserve to cover the loss according to the adopted balance sheet.

The following funds are at the disposal of the Annual General Meeting (SEK 000s):

Retained loss	–2,187
Net income for the year	3,891
Group contributions	–1,700
Shareholder contributions	–2,720
Total	–2,716

The Board of Directors and the President propose the following (SEK 000s):

Reduction in premium reserve	5,000
Transfer to legal reserve	0
Shareholder dividends	0
Carried forward to new account	2,284

Gylling Optima Batteries AB (the Parent Company) has made a conditional capital contribution to Optima Batteries AB (the Subsidiary). The background for the capital contribution is that the Subsidiary has incurred a loss of such size that had no other measures been taken, the Subsidiary would have been required to observe the regulations on preparation of a balance sheet for liquidation purposes. In order to avoid this the Parent Company has decided to make a capital contribution of SEK 2,720 thousand. However, the contribution is so large that it exceeds the sum of the Parent Company's unrestricted equity. In order to restore unrestricted equity in the Parent Company, the Board has proposed that the Parent Company's premium reserve be reduced by MSEK 5. The Parent Company will thus have unrestricted equity of SEK 2,284 thousand.

THE GROUP

Consolidated income after financial items amounted to MSEK 7.0, after which the Group's accumulated loss totals SEK 67,244 thousand. No transfer to restricted equity in the Group is proposed. The results of operations in the Group and the Parent Company during the fiscal year and the financial position as per December 31, 1999, are presented in the following income statements and balance sheets, with accompanying notes.

Danderyd April 12 , 2000

Tom Wachtmeister
Chairman

Bertil Gylling
Managing Director

Lennart Bragg

Bengt Wahlqvist

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Income statements

		GROUP		PARENT COMPANY	
SEK 000s	Note	**1999**	1998	**1999**	1998
Net sales	1	**324,462**	278,705	**8,971**	6,612
Cost of goods sold		**–226,678**	–217,353	**–1,160**	–1,238
Gross income		**97,784**	61,352	**7,811**	5,374
Selling and marketing expenses		**–41,946**	–42,948	**–**	–
Administrative expenses		**–33,663**	–30,855	**–6,460**	–5,084
Research and development costs		**–5,484**	–7,794	**–**	–
Operating income/loss		**16,691**	–20,245	**1,351**	290
Income/loss from financial investments					
Income/loss from participations in associated companies	14	**–154**	–	**–154**	–
Other interest income and similar income/loss items	8	**7,667**	4,561	**5,975**	2,273
Interest expense and similar income/loss items		**–17,161**	–13,248	**–3,281**	–2,480
Income/loss after financial items		**7,043**	–28,932	**3,891**	83
Appropriations	9	**–**	–	**–**	133
Tax	10	**710**	–20	**–**	3
NET INCOME/LOSS FOR THE YEAR		**7,753**	–28,952	**3,891**	219

Cash flow statements

SEK 000s	Note	GROUP 1999	GROUP 1998	PARENT COMPANY 1999	PARENT COMPANY 1998
Operating activities					
Operating income/loss before financial items		**16,943**	–20,245	**1,351**	291
Interest received		**1,838**	1,479	**1,544**	1,391
Interest paid		**–11,590**	–8,898	**–4**	–590
Income tax paid	10	**–192**	–57	**–**	3
Adjustments for items not affecting cash flow					
Depreciation		**7,608**	7,948	**44**	52
Exchange rate differences		**–147**	106	**538**	–1,009
Appropriations		**–**	–	**–**	133
Translation differences, mainly attributable to fixed assets		**–2,977**	–1,655	**–**	–
Capital gains on the sale of fixed assets		**–**	187	**–**	–
Cash flow from operating activities before change in working capital		**11,483**	–21,135	**3,473**	271
Changes in working capital					
Increase (–)/decrease (+) in inventories		**10,166**	3,613	**–**	–
Increase (–)/decrease (+) in operating receivables		**–15,018**	–7,445	**–5,158**	18,955
Increase (+)/decrease (–) in operating liabilities		**–40,570**	–11,432	**–68**	–230
Cash flow from operating activities		**–33,939**	–36,399	**–1,753**	18,996
Investing activities					
Acquisition of tangible fixed assets	12	**–16,121**	–9,986	**–60**	–185
Investments in shares and participations	14	**–2,846**	–	**–3,000**	–32,260
Cash flow from investing activities		**–18,967**	–9,986	**–3,060**	–32,445
Financing activities					
New share issue, net		**–**	31,988	**–**	31,988
Shareholder contributions		**–**	–	**–2,720**	
Group contributions		**–**	–	**–1,700**	–4,000
Change in financial receivables		**1,917**	3,835	**–**	–
Raising/amortization of loans, net		**44,207**	20,531	**132**	–5,480
Cash flow from financing activities		**46,124**	56,354	**–4,288**	22,508
The year's cash flow		**–6,782**	9,969	**–9,101**	9,059
Liquid assets*, January 1		**12,802**	2,826	**10,966**	1,907
Exchange rate difference, liquid assets		**94**	7	**–**	–
Liquid assets, December 31	18	**6,114**	12,802	**1,865**	10,966

* Liquid assets consist of cash and cash equivalents.

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Balance sheets

SEK 000s	Note	GROUP 31/12/1999	GROUP 31/12/1998	PARENT COMPANY 31/12/1999	PARENT COMPANY 31/12/1998
ASSETS					
Fixed assets					
Tangible fixed assets					
Buildings and land	12	**53,522**	52,525	**–**	–
Machinery and other technical equipment	12	**77,587**	34,768	**–**	–
Equipment, tools, fixtures and fittings	12	**4,761**	2,454	**169**	153
Construction in progress	12	**1,221**	2,227	**–**	–
Total tangible fixed assets		**137,091**	91,974	**169**	153
Financial fixed assets					
Participations in group companies	13	**–**	–	**104,577**	104,577
Participations in associated companies	14	**2,846**	–	**3,000**	–
Long-term receivables	15, 25	**11,667**	12,683	**–**	–
Total financial fixed assets		**14,513**	12,683	**107,577**	104,577
Total fixed assets		**151,604**	104,657	**107,746**	104,730
CURRENT ASSETS					
Inventories, etc.	16	**43,950**	54,116	**–**	–
Total inventories, etc.		**43,950**	54,116	**–**	–
Current receivables					
Accounts receivable		**60,454**	47,137	**493**	356
Receivables from subsidiaries		**–**	–	**23,816**	20,893
Other current receivables	3	**31,432**	28,773	**31,013**	28,521
Prepaid expenses and accrued income	17	**4,248**	4,960	**155**	86
Total current receivables		**96,134**	80,870	**55,477**	49,856
Cash and cash equivalents		**6,114**	12,802	**1,865**	10,966
Total current assets		**146,198**	147,788	**57,342**	60,822
TOTAL ASSETS		**297,802**	252,445	**165,088**	165,552

SEK 000s	Note	GROUP 31/12/1999	GROUP 31/12/1998	PARENT COMPANY 31/12/1999	PARENT COMPANY 31/12/1998
SHAREHOLDERS' EQUITY, PROVISIONS AND LIABILITIES					
Shareholders' equity	22				
Restricted equity					
Share capital, 29,915,400 shares, par value of SEK 0.50 each		**14,958**	14,958	**14,958**	14,958
Premium reserve		**30,612**	30,612	**30,612**	30,612
Other restricted reserves		**119,844**	119,841	**119,841**	119,841
Total restricted equity		**165,414**	165,411	**165,411**	165,411
Unrestricted equity					
Accumulated earnings/losses		**–74,997**	–47,970	**–6,607**	–2,406
Net income/loss for the year		**7,753**	–28,952	**3,891**	219
Unrestricted equity		**–67,244**	–76,922	**–2,716**	–2,187
Total shareholders' equity		**98,170**	88,489	**162,695**	163,224
Provisions					
Provisions	20	**6,731**	3,647	**–**	–
Total provisions		**6,731**	3,647	**–**	–
Long-term liabilities					
Bond loan	25	**64,889**	63,955	**–**	–
Liabilities to credit institutions	18, 23	**31,894**	41,106		
Other long-term liabilities		**39,986**	9,349	**215**	82
Total long-term liabilities		**136,769**	114,410	**215**	82
Current liabilities					
Liabilities to credit institutions	23	**14,805**	2,256	**–**	–
Accounts payable		**28,094**	28,120	**584**	998
Income tax liability		**170**	–	**–**	–
Other current liabilities		**269**	1,923	**58**	56
Accrued expenses and deferred income	19	**12,794**	13,600	**1,536**	1,192
Total current liabilities		**56,132**	45,899	**2,178**	2,246
Total liabilities and provisions		**199,632**	163,956	**2 393**	2,328
TOTAL SHAREHOLDERS' EQUITY, PROVISIONS AND LIABILITIES		**297,802**	252,445	**165,088**	165,552
Assets pledged	23	**72,751**	82,043	**–**	–
Contingent liabilities	24	**2,091**	2,091	**17,359**	16,558

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Accounting principles and notes

Consolidated accounts

The consolidated accounts include the Parent Company and the subsidiaries Optima Batteries AB and Optima Holding Company Inc. The accounts have been prepared according to the Financial Accounting Standards Council's recommendation on consolidated financial statements, whereby the Parent Company's book value of shares in each subsidiary is eliminated against shareholders' equity in the subsidiary on the acquisition date. In accordance with the Council's recommendation on consolidated financial statements, untaxed reserves are not reported in the Group. Instead, they have been divided between deferred tax (28 percent) and restricted reserves in consolidated shareholders' equity.

Since the Group's subsidiaries are independent, their income statements and balance sheets are translated according to the current method. In application of the current method, all assets and liabilities in the subsidiary are translated at the closing day rate and all income statement items are translated at the average rate during the year. The translation differences that arise are an effect partly of the difference between the average rates used in the income statement and the closing day rates, and partly of the fact that net investments are translated at a different rate at the beginning of the year than at year-end. Translation differences are reported directly in consolidated shareholders' equity, divided between restricted and unrestricted reserves.

Since a substantial portion of the company's revenues and expenses are denominated in U.S. dollars, a significant change in the value of the dollar against the Swedish krona can have a considerable impact on the translation difference included in shareholders' equity.

Valuation of assets and liabilities

All assets and liabilities are reported at acquisition value, unless otherwise specified in the following notes. A reasonable share of external interest paid during construction of the new plant in the U.S. has been capitalized under the item "Buildings" in the balance sheet.

The Group's assets and liabilities in foreign currencies are valued at the closing day rate.

Provisions are made in the balance sheet according to the assessed requirements.

Inventories

Inventories in the Parent Company and the Group have been reported at acquisition value with a deduction for individually assessed obsolescence.

Plant and equipment

Plant and equipment are depreciated according to plan over five years in the Parent Company and 2–19 years in the Group. Buildings and land in the Group are depreciated over 40 years.

Depreciation is based on the acquisition cost and estimated economic life of the asset.

Research and development costs

All research and development costs are expensed as incurred.

Note 1 Results of net sales

Net sales were distributed by segment as follows:

Group

Net sales refer to sales of batteries.

Net sales were distributed by geographic market as follows:

Net sales	1999	1998
North America	**300,324**	257,360
Europe and other markets	**120,150**	117,356
Elimination of intra-group sales	**–96,012**	–96,011
Total	**324,462**	278,705

Net sales include exchange gains of SEK 732 thousand (5).

Parent Company

The Parent Company's net sales consist primarily of royalties. Net sales include exchange gains of SEK 1,599 thousand (427).

Note 2 Intra-group sales and purchases

Invoicing between companies in the Group amounted to SEK 96,013 thousand (96,011), corresponding to 22.8 percent (25.3) of total operating income.

Note 3 Transactions with closely affiliated parties

The Group has a leasing contract with a closely affiliated company with an annual fee amounting to SEK 12,528 thousand (8,833). Receivables from closely affiliated companies totaled SEK 30,702 thousand (27,987) in the Group. All transactions with closely affiliated companies are carried out on strictly commercial terms.

Note 4 Average number of employees

	1999		1998	
	No. of employees	Of whom men, %	No. of employees	Of whom men, %
Parent Company				
Sweden	**3**	**100**	3	100
Total Parent Company	**3**	**100**	3	100
Subsidiaries				
Sweden	**14**	**64**	14	64
USA	**209**	**83**	192	82
Total subsidiaries	**223**	**82**	206	81
Total Group	**226**	**82**	209	81

Note 5 Salaries, renumeration and social security costs

	1999		1998	
	Salaries and other remuneration	Social security costs (incl. pension costs)	Salaries and other remuneration	Social security costs (incl. pension costs)
Parent Company	**1,894**	**950**	1,619	700
		(275)*		(179)*
Subsidiaries	**72,162**	**8,827**	68,537	7,566
		(1,692)		(1,655)
Total Group	**74,056**	**9,777**	70,156	8,266
		(1,967)**		(1,834)**

* Of the Parent Company's total pension costs, SEK 205 thousand (105) refers to the Board of Directors and President. The company's outstanding pension commitments to these amount to 0 (0).

** Of the Group's total pension costs, SEK 435 thousand (279) refers to the Board of Directors and President. The Group's outstanding pension commitments to these amount to 0 (0). The breakdown of salaries and other remuneration by country and between the members of the Board and the President and other employees:

	1999		1998	
	Board and President (incl. bonuses and similar)	Other employees	Board and President (incl. bonuses and similar)	Other employees
Parent Company in Sweden	**1,029***	**865**	900*	719
Subsidiary in Sweden	**858**	**4,478**	891	3,764
Subsidiary in the U.S.	**1,724**	**65,101**	1,669	62,213
Total Group	**3,611**	**70,444**	3,460	66,696

*) Of the Parent Company's total salaries, SEK 75 (38) thousand refers to the Chairman of the Board and SEK 118 thousand (126) to external Board members.

Note 6 Severance pay agreements

Two senior executives in the Group have agreements for severance pay in a maximum amount of two annual salaries.

Note 7 Auditors' fees

	Group		Parent Company	
	1999	1998	1999	1998
Audit assignments*	**540**	615	**175**	213
Other assignments	**316**	291	**158**	102
Total	**856**	906	**333**	315

Audit assignments refer to examination of the annual report, the accounts and the administration of the Board of Directors and the President, other tasks which are the responsibility of the company's auditor and advice or other assistance pertaining to observations in connection with such examination or execution of such other tasks. All other work comprises other assignments.

*) Of the item Auditors' fees, SEK 20 thousand (20) refers to Effektiv Revision KFM AB and the remainder to Ernst & Young AB.

Note 8 Other interest income and similar income items

	Group		Parent Company	
	1999	1998	1999	1998
Interest	**2,301**	1,483	**2,007**	1,395
Exchange rate differences	**5,283**	3,078	**3,885**	878
Other	**83**	–	**83**	–
Total	**7,667**	4,561	**5,975**	2,273

Note 9 Appropriations

	1999	1998
Reversal of tax equalization fund	**–**	–133
Total	**–**	–133

Note 10 Tax on income for the year

	Group		Parent Company	
	1999	1998	1999	1998
Current tax	**192**	57	**–**	–3
Tax carryforward	**–902**	–37	**–**	–
Total	**–710**	20	**–**	–3

Note 11 Leasing contracts

	Group		Parent Company	
	Financial	Operational	Financial	Operational
Fees due for payment:				
Fees due for payment in 2000	15,812	11,061	–	–
Fees due for payment in 2001	15,888	4,373	–	–
Fees due for payment in 2002	14,271	2,536	–	–
Fees due for payment after 2002	14,909	6,459	–	–
The year's fees totaled	6,159	15,068	–	–

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Note 12 Tangible fixed assets

	Group		Parent Company	
	1999	1998	1999	1998
Machinery and other technical equipment				
Opening acquisition value	**53,332**	46,537	**–**	–
The year's investments*	**14,203**	20,913	**–**	–
Sales/disposals	**–4,085**	–8,355	**–**	–
Reclassifications**	**37,487**	–6,920	**–**	–
The year's translation difference	**2,945**	1,157	**–**	–
Closing accumulated acquisition value	**103,882**	**53,332**	**–**	**–**
Opening depreciation	**18,564**	21,147	**–**	–
Sales/disposals	**–3,574**	–8,178	**–**	–
Reclassifications	**–**	–	**–**	–
The year's depreciation	**10,270**	5,038	**–**	–
The year's translation difference	**1,035**	557	**–**	–
Closing accumulated depreciation	**26,295**	18,564	**–**	–
Book value	**77,587**	34,768	**–**	–
Equipment				
Opening acquisition value	**5,860**	5,113	**210**	25
The year's investments*	**1,918**	720	**60**	185
Sales/disposals	**–**	–48	**–**	–
Reclassifications**	**1,711**	–	**–**	–
The year's translation difference	**173**	75	**–**	–
Closing accumulated acquisition value	**79,662**	5,860	**270**	210
Opening depreciation	**3,406**	2,303	**57**	5
Sales/disposals	**–**	–40	**–**	–
Reclassifications	**–**	–	**–**	–
The year's depreciation	**1,389**	1,112	**44**	52
The year's translation difference	**106**	31	**–**	–
Closing accumulated depreciation	**4,901**	3,406	**101**	57
Book value	**4,761**	2,454	**169**	153
Buildings and land				
Opening acquisition value	**58,533**	57,123	**–**	–
The year's investments*	**–**	–	**–**	–
Sales/disposals	**–2,204**	–	**–**	–
Reclassifications	**–**	–	**–**	–
The year's translation differences	**3,235**	1,410	**–**	–
Opening accumulated acquisition values	**59,564**	58,533	**–**	–
Opening depreciation	**6,008**	4,108	**–**	–
Sales/disposals	**–1,932**	–	**–**	–
Reclassifications	**–**	–	**–**	–
The year's depreciation	**1,634**	1,798	**–**	–
The year's translation differences	**332**	102	**–**	–
Closing accumulated depreciation	**6,042**	6,008	**–**	–
Book value	**53,522**	52,525	**–**	–
Construction in progress				
Opening acquisition value	**2,227**	6,786	**–**	–
The year's investments*	**–**	–	**–**	–
Sales/disposals	**–**	–	**–**	–
Reclassifications	**–1,006**	–4,559	**–**	–
Closing accumulated acquisition value	**1,221**	2,227	**–**	–
Book value	**1,221**	2,227	**–**	–

* Of the year's investments, SEK 11,846 refers to assets financed through leasing contracts.

** In1999, parts of machinery and equipment were reclassified from operational to financial leasing.

Note 13 Participations in group companies

Shares and participations in group companies	1999	1998
Opening acquisition value	**104,577**	72,317
Capital contribution	**–**	32,260
Closing book value	**104,577**	104,577

	Share of capital, %	Share of votes, %	No. of shares	Book value
Optima Holding Company Inc.	100	100	1,000	104,377
Optima Batteries Inc.	100	100	–	–
Optima Batteries AB	100	100	8,000	200
Total				104,577

Information on the subsidiaries' registration numbers and registered offices:

	Company reg. no.	Reg. office
Optima Holding Company Inc.		Aurora/Denver/USA
Optima Batteries Inc.		Aurora/Denver/USA
Optima Batteries AB	556110–7748	Danderyd

Note14 Participations in associated companies

Shares and participations in associated companies	1999	1998
Opening acquisition value	**–**	–
The year's acquisitions	**3,000**	–
Closing acquisition value	**3,000**	–
Opening depreciation	**–**	–
The year's depreciation	**–154**	–
Closing accumulated depreciation	**–154**	–
Book value	**2,846**	–

	Share of capital, %	Share of votes, %	No. of shares	Book value Parent Company	Book value Group
Effpower AB	48.5	48.5	485	3,000	2,846
Total				**3,000**	**2,846**

Information on the associated company's registration number and registered office:

	Company reg. no.	Reg. office
Effpower AB	556570-8541	Gothenburg

Note 15 Loans and contingent liabilities on behalf of senior executives

The Group has a receivable from a senior executive amounting to SEK 276 thousand with an interest rate of 6.5 percent. The receivable falls due for payment on June 30, 2000. The receivable is secured by 100,000 subscription warrants in Gylling Optima Batteries AB.

Note 16 Inventories

	Group		Parent Company	
	1999	1998	1999	1998
Finished goods	**32,632**	42,543	**–**	–
Work in progress	**2,476**	1,839	**–**	–
Raw materials	**8,842**	9,734	**–**	–
Total	**43,950**	54,116	**–**	–

Note 17 Prepaid expenses and accrued income

	Group		Parent Company	
	1999	1998	1999	1998
Prepaid rents	**271**	65	**11**	8
Accrued interest	**221**	202	**–**	–
Prepaid insurance	**892**	1,664	**70**	40
Accrued interest on bonds	**408**	436	**–**	–
Prepaid leasing expenses	**1,285**	1,718	**–**	–
Other items	**1,171**	875	**74**	38
Total	**4,248**	4,960	**155**	86

Note 18 Bank overdraft facilities

Group

The credit limit on the bank overdraft facility is SEK 57,868 thousand (54,842).
The amount utilized was SEK 31,894 thousand (41,106).

Parent Company

The credit limit on the bank overdraft facility is SEK 0 thousand (0).

Note 19 Accrued expenses and prepaid income

	Group		Parent Company	
	1999	1998	1999	1998
Accrued interest	**495**	718	**–**	–
Accrued staff costs	**6,044**	5,636	**427**	406
Accrued leasing expenses	**638**	613	**–**	–
Accrued raw material costs	**1,872**	–	**–**	–
Other items	**3,745**	6,633	**1,109**	786
Total	**12,794**	13,600	**1,536**	1,192

Note 20 Provisions

	Group		Parent Company	
	1999	1998	1999	1998
Guarantee reserve	**5,880**	3,647	**–**	–
Other provisions	**851**	–	**–**	–
Total	**6,731**	3,647	**–**	–

Note 21 Deferred tax

Group

The tax expense in the Group is strongly affected by federal and local tax regulations in the United States. The tax rate in the states where the Group conducts business varies between 5 and 34 percent. According to U.S. tax legislation, loss-making companies may use tax payments from up to the three past years to offset future tax expenses.

In the U.S. subsidiary, there are unutilized loss carryforwards of SEK 80,015 thousand (81,102). Applying the current tax rate of approximately 39 percent, the future tax deductions on these loss carryforwards amount to SEK 31,232 thousand (31,630).

Parent Company

Deferred tax in the Parent Company has been calculated at 28 percent of untaxed reserves.

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Note 22 Change in shareholders' equity

Group	Share capital	Premium reserve	Restricted reserves	Unrestricted reserves	Income/loss for the year	Total
Opening balance	14,958	30,612	119,844	–47,970	–28,952	88,492
Appropriation of profits				–28,952	28,952	0
Translation difference				1,925		1,925
Net income/loss for the year					7,753	7,753
Closing balance	14,958	30,612	119,844	–74,997	7,753	98,170

Parent Company	Share capital	Premium reserve	Restricted reserves	Unrestricted reserves	Income/loss for the year	Total
Opening balance	14,958	30,612	119,841	–2,406	219	163,224
Appropriation of profits				219	–219	0
Shareholder contributions				–2,720		–2,720
Group contributions				–1,700		–1,700
Net income/loss for the year					3,891	3,891
Closing balance	14,958	30,612	119,841	–6,607	3,891	162,695

Note 23 Assets pledged and maturity of liabilities

Group

		Due for payment				
Liability	Liability as per Dec. 31,1999	Within 1 year	Between 1 and 5 years	After five years	Assets pledged	Liability as per Dec. 31,1998
Liabilities to credit institutions	44,103	12,209	31,894	0	1)	41,106
Bond loan	67,485	2,596	0	64,889	2)	66,211
Total	111,588	14,805	31,894	64,889		107,317

Assets pledged to secure own liabilities and provisions

	1999	1998
1) Chattel mortgages	**34,456**	43,492
2) Real estate mortgages	**38,295**	38,551
Total assets pledged	**72,751**	82,043

The Parent Company has no assets pledged or liabilities to credit institutions.

Note 24 Contingent liabilities

Group

	1999	1998
Shareholder contributions	**2,091**	2,091
Total contingent liabilities	**2,091**	2,091

Parent Company

	1999	1998
Surety given on behalf of group companies	**15,318**	14,517
Shareholder contributions	**2,041**	2,041
Total contingent liabilities	**17,359**	16,558

Note 25 Bond loan

The expenses for the bond loans 1994 A and 1994 B issued in the U.S. and totaling SEK 2,343 thousand have been capitalized in the Group under the balance sheet item Long-term receivables. Capitalized issue expenses are depreciated over the term of the bond loan at a rate of around one twentieth per year.

Auditors' Report

To the Annual General Meeting of Gylling Optima Batteries AB (publ).
Company reg. no. 556236-8448.

We have examined the annual report and the consolidated financial statements, the accounts and the administration of the Board of Directors and the President of Gylling Optima Batteries AB for 1999. These accounts and the administration of the company are the responsibility of the Board of Directors and the President. Our responsibility is to express an opinion on the financial statements and the administration based on our audit.

We conducted our audit in accordance with generally accepted accounting standards in Sweden, which require that we plan and perform the audit to obtain reasonable assurance that 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 their application by the Board of Directors and the President, as well as evaluating the overall presentation of information in the financial statements. As a basis for our opinion on discharge from responsibility, we have examined significant decisions, actions taken and circumstances of the company in order to determine the possible liability to the company of any Board member or the President. We have also examined whether any Board member or the President has in some other way acted in contravention of the Swedish Companies Act, the Swedish Annual Accounts Act or the Articles of Association. We believe that our audit provides a reasonable basis for our opinion set out below.

The annual report and the consolidated financial statements have been prepared in accordance with the Swedish Annual Accounts Act, and thus provide a true and fair picture of the results and position of the Group and the Parent Company in accordance with generally accepted accounting standards in Sweden.

We recommend that the Annual General Meeting adopt the Profit and Loss Account and the Balance Sheet for the Parent Company and for the Group, dispose of the unappropriated earnings in the Parent Company as proposed in the Board of Directors' Report and discharge the members of the Board of Directors and the President from liability for the financial year.

Stockholm, April 17, 2000

Stefan Hultstrand

Authorized Public Accountant
Ernst&Young

Stefan Mattsson

Authorized Public Accountant
Effektiv Revision

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Board of Directors

Tom Wachtmeister

Bertil Gylling

Lennart Brag

Bengt Wahlqvist

Pär M. Ericson

Tomas Gylling

Tom Wachtmeister
Born in 1931. Chairman, member of the Board since 1998.
Other assignments: Board member of Norsk Hydro AS, Chairman of Investment AB Inkina, Sweden-China Trade Council, Norwegian-Swedish Chamber of Commerce, Vice Chairman of Sveriges Allmänna Exportförening, board member of North Atlantic National Resources AB and British-Swedish Chamber of Commerce.
Shareholding, direct and indirect: 45,714 B shares and 20,000 subscription warrants.

Bertil Gylling
Born in 1929. President and CEO since the company's formation in 1992. Active in the Gylling companies since 1950.
Shareholding, direct: 1,999,750 A shares, 6,108,607 B shares.

Lennart Brag
Born in 1959. M. Sc. Engineering, Member of the Board since 1996.
Other assignments: Chairman of Denison Hydralics S.A, France, part-owner of S.E.P Normart and Netvalue S.A, France.
Shareholding, direct and indirect: 630,800 B shares, 120,000 subscription warrants.

Bengt Wahlqvist
Born in 1953, M. Sc. Engineering, Member of the Board since 1999.
Other assignments: President of Creator Teknisk Utveckling AB.
Shareholding, direct: 60,000 B shares, 40,000 subscription warrants.

Pär M. Ericson
Born in 1952. Deputy Board member, Vice President, Chief Financial Officer, President of Optima Batteries Inc.
Shareholding, direct and indirect: 255,857 B shares, 200,000 subscription warrants.

Thomas Gylling
Born in 1956. Deputy Board member since 1992.
Shareholding: 2,540,000 B shares.

Executive Management and Auditors

EXECUTIVE MANAGEMENT

Bertil Gylling
Born in 1929. President and CEO since the compay's formation in 1992. Active in the Gylling companies since 1950.
Shareholding, direct: 1,999,750 A shares, 6,108,607 B shares.

Pär M. Ericson
Born in 1952. Deputy Board member, Vice President, Chief Financial Officer, President of Optima Batteries Inc.
Shareholding, direct and indirect: 255,857 B shares, 200,000 subscription warrants.

Börje Maleus
Born in 1953. M. Sc. Engineering. Employed by Optima Batteries Inc. since 1999.
Shareholding: 30,000 subscription warrants.

Bengt Hagander
Born in 1956. M. Sc. Engineering. Vice President of the Parent Company and President of Optima Batteries AB.
Shareholding: 180,000 B shares and 100,000 subscription warrants.

Bengt Hagander will take over as President of the Parent Company at the Annual General Meeting in May, 2000.

AUDITORS

Stefan Hultstrand
Born 1955. Authorized Public Accountant.
Ernst & Young AB. Auditor for the company since 1992.

Stefan Mattsson
Born 1954. Authorized Public Accountant.
Effektiv revision KFM AB.
Auditor for the company since 1996.

Optima Technical Advisory Board

The primary task of Optima Technical Advisory Board is to follow up and develop the production process and to evaluate and prioritize projects related to existing and new products. The external members are Knut Myrvold, Gylling Teknikk A/S, Norway, and Bengt Wahlqvist, Creator Teknisk Utveckling AB.

Bengt Wahlqvist

Knut Myrvold

Bengt Wahlqvist
Born in 1953. M. Sc. Engineering. Royal Institute of Technology, President of Creator Teknisk Utveckling AB.
Shareholding: 60,000 B shares, 40,000 subscription warrants.

Knut Myrvold
Born in 1939. Eng. President of Gylling Teknikk A/S, Norway since 1982.
Shareholding: 85,000 subscription warrants.

The Optima share

THE OPTIMA SHARE

Through a new share issue in autumn 1998, the company's share capital was increased by SEK 1,375,366.50 and the number of shares by 2,750,733 to a total of 29,915,400. The company's market capitalization on December 31, 1999 was MSEK 14,957,700. All shares carry equal entitlement to the company's assets and profits. The shares have a par value of SEK 0.50 each.

SHAREHOLDERS

The number of shareholders in Optima at year-end was 2,877 (2,781). Institutional ownership was approximately 5 percent (6) and 36.6 percent of the number of shareholders owned less than 500 shares each.

STOCK OPTION PROGRAM

1. The extraordinary General Meeting on October 30, 1996 authorized the Board of Directors to offer the employees the opportunity to subscribe for debentures with detachable warrants for new shares. The terms of the employee offer were established in consultation with Erik Penser Fondkommission AB to ensure that the offer would conform to market conditions at the time of the issue. The employees were allocated debentures with warrants to subscribe for 1,140,000 new class B shares, corresponding to 4 percent of the share capital and 2.2 percent of the votes in the company upon full subscription. In brief, the terms stipulate that 1,140,000 class B shares may be subscribed for during the period January 1– December 31, 2001, at an exercise price of SEK 14. The premium for the stock option is SEK 3 per share.
2. The Annual General Meeting on May 28, 1999 voted to issue debentures with detachable warrants to subscribe for new shares. The decision entailed the issue of debentures with a nominal value of SEK 1,000, with exception from the shareholders' preferential rights. The debenture matured on December 31, 1999, with annual interest of 6 percent. The debenture will be accompanied by 600,000 detachable warrants to subscribe for one class B share during the period January 1–December 31, 2002.

The subscription price for the new shares will be 150 percent of the average volume-weighted settlement price during the period May 25–28 1999, or SEK 15.72. The right to subscribe, with exception from the shareholders' preferential rights, is held by the subsidiary Optima Batteries AB for further sale of the warrants to employees in the Group as designated by the Board of Gylling Optima Batteries AB.

The price of each subscription warrant is SEK 0.61. Full conversion of the issue based on the warrants would increase the share capital by a maximum of 300,000, corresponding to 1.13 percent of the share capital and 1.13 percent of the votes in the company.

LARGEST SHAREHOLDERS

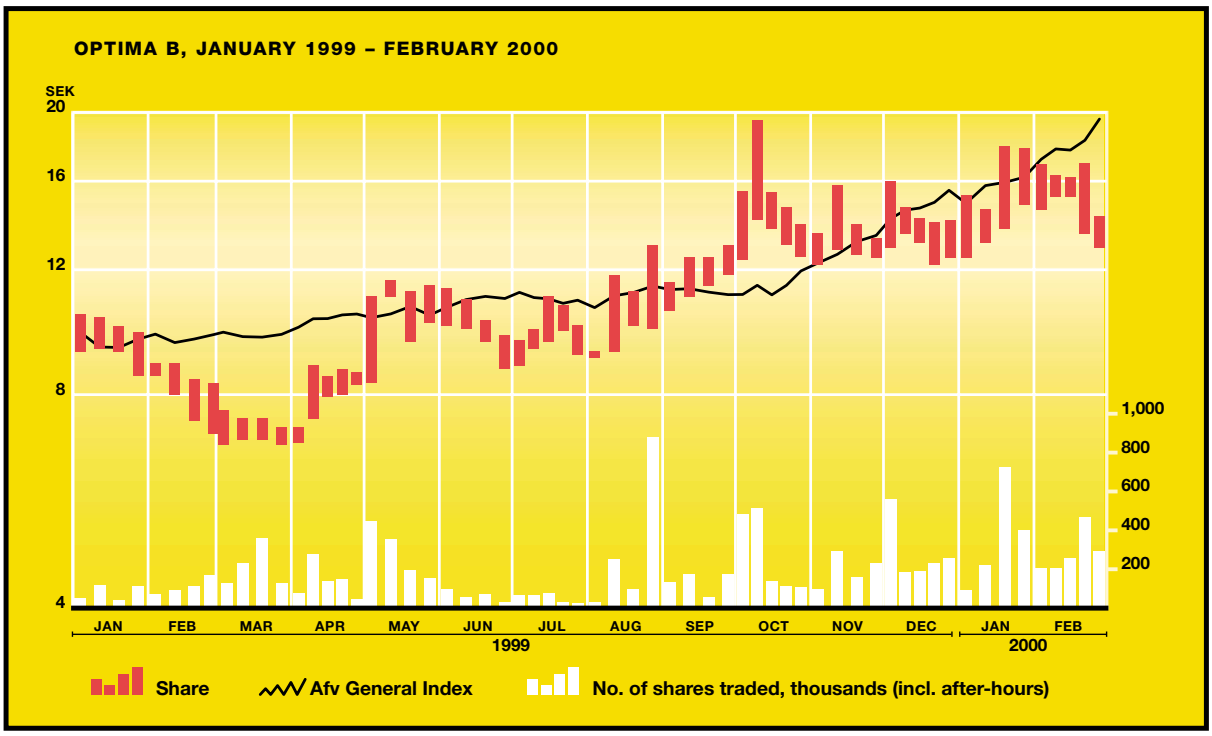
Shareholder	A shares	B shares	Capital, %	Votes, %
Bertil Gylling and family	2,499,750	18,490,892	70.17	82.97
Lennart Brag and company		630,800	2.11	1.20
Pär M. Ericson and company		255,857	0.86	0.49
Bengt Hagander and family		180,400	0.60	0.34
Tom Wachtmeister and company		45,714	0.15	0.09
Bengt Wahlqvist		60,000	0.20	0.12
Other shareholders		7,751,987	25.91	14.79
	2,499,750	**27,415,650**	**100.00**	**100.00**

INSTITUTIONAL OWNERS

Shareholder	No. of shares
Axokadern AB	100,000
Den Danska Bank	200,000
Falernia Investment AB	186,800
Förenade Liv	120,000
Medulla AB	70,000
Prudential Securities INC	200,000
Stiftelsen Samverkan Universitet/Näringsliv, Linköping	50,000
State Street Bank and Trust CO	300,000
Wasa Miljöteknikfond	100,000

CHANGES IN THE SHARE CAPITAL

Year	Transaction	Change	Total share capital
07/09/98	New share issue	1,375,366.50	14,957,700.00
08/11/96	New share issue	3,333,333.50	13,582,333.50
30/10/96	New share issue	2,250,000.00	10,249,000.00
04/10/96	1:200 split	0.00	7,999,000.00
04/07/95	Bonus issue	7,199,100.00	7,999,000.00
14/12/94	New share issue	200,000.00	799,900.00
16/11/92	New share issue	549,900.00	599,900.00
05/12/83	Company registered	50,000.00	50,000.00



OPTIMA SPIRALCELL® TECHNOLOGY

Definitions

OPERATING MARGIN Operating income after depreciation as a percentage of revenue.

PROFIT MARGIN Income after net financial items as a percentage of revenue.

RETURN ON EQUITY Income after net financial items minus tax, divided by average shareholders' equity.

RETURN ON CAPITAL EMPLOYED Income after net financial items plus financial expenses, divided by average capital employed.

EQUITY RATIO Shareholders' equity as a percentage of total assets.

DEBT/EQUITY RATIO Interest–bearing liabilities divided by shareholders' equity.

SHARE OF RISK-WEIGHTED CAPITAL The sum of shareholders' equity and deferred tax, divided by total assets.

INTEREST COVERAGE RATIO Income after net financial items plus financial expenses, divided by financial expenses.

EARNINGS PER SHARE AFTER TAX Income after tax divided by the number of shares after the issue of new shares.

P/E RATIO Sales price divided by earnings per share after actual tax.

SHAREHOLDER'S EQUITY PER SHARE Reported shareholders' equity divided by the number of shares outstanding.

CASH FLOW PER SHARE Cash flow divided by the number of shares outstanding.

Glossary

ANTIMONY A mineral used to alloy the lead in a battery in order to increase its mechanical strength. Antimony also gives the battery better cycling properties, though it increases water consumption. OPTIMA contain no antimony.

BCI Battery Council International.

BOOST CHARGE Supplementary charging of the battery to full charge. This is done to maintain battery capacity and compensate for self discharge.

CCA Cold Cranking Amps. The maximum amperes that can be continuously removed from a battery for 30 seconds. At zero degrees F with a finish voltage of 7.2 volts (SAE standard).

CELL VOLTAGE Electric potential difference of a battery cell, measured in volts.

CORROSION Term commonly used to describe the gradual oxidation of lead anodes which are thus converted back into lead oxide.

CYCLE The discharge and subsequent charge of a rechargeable cell/battery is called a cycle. OPTIMA has a life of around 12,000 cycles, compared with 4,000 for a conventional battery.

DIN The German measurement standard. Deutsche Industrie Norm.

ELECTROLYTE The conductive chemical (such as acid), usually fluid or gel, in which the flow of electricity takes place within the battery, and which supports the chemical reactions required.

GAS Charging of lead-acid batteries causes the formation of gas and liquid. When the gas leaks out, water must be replenished. In an OPTIMA the gas is recombined into water, making the battery maintenance-free.

GATES The American company that invented and developed OPTIMA. In 1992 Gates sold the concept to the Gylling Group of Scandinavia.

GEL The electrolyte in certain batteries is in gel form. Gel batteries are zero-maintenance but do not recombine as effectively as the Optima battery.

IEC International Electrotechnical Commission.

IMPEDANCE Similar to resistance but applies to AC circuits. Measured in ohms.

LEAD ACCUMULATOR Lead-acid battery, rechargeable.

LEAD DIOXIDE The active material in a battery's positive electrodes.

METALLIC SPONGE LEAD Active material in a battery's negative electrodes.

PULSE CHARGE The charger regulates and adapts to the battery's status. After full charging, the battery is switched to float charge and the risk of overcharging is eliminated.

RECOMBINATION In a lead-acid battery, electrolysis of water occurs to produce oxygen from the positive plate and hydrogen from the negative plate. In recombination, the oxygen and hydrogen are recombined into H_20, or water.

REST VOLTAGE The voltage of a battery when not in use and with no charge/discharge for at least 12 hours.

SAE Society of Automotive Engineers. The American measurement standard, equivalent to the German DIN standard.

SELF DISCHARGE The loss of useful capacity of a cell or battery due to internal chemical action.

UPS Uninterrupted Power Supply.

VRLA Valve Regulated Lead Acid.

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OPTIMA® BATTERIES

OPTIMA SPIRALCELL® TECHNOLOGY

THE ULTIMATE POWER SOURCE™

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