



2011 International Lead Award Acceptance Speech

Dear International Lead Association Members, Award Committee Members, Asian Battery Conference Committee and Delegates, Friends and fellow members of the Lead–Acid Battery Industry,

It is truly a great honour to be here today and receive the 2011 International Lead Award. From the bottom of my heart, I want to thank the members of the Award Committee for selecting me to be the recipient of this highly prestigious award. When notified of this event, I was deeply touched and I again offer my sincerest gratitude to all involved.

Dave Prengaman, thank you for your kind introduction. Having you, an individual who I profoundly respect as a colleague and a friend, make the presentation means so much to me.

As I receive this award, I do it on behalf of the entire East Penn organization that has enabled us to do the things that allow me to stand in front of you today. In this respect, I gratefully acknowledge the following people.

First, DeLight Breidegam, Chairman of East Penn, who hired me almost 40 years ago with Fred Keller to start an Engineering and Technology Department. Throughout all these years, DeLight has challenged, coached, encouraged and made resources available for all of our various programmes and activities.

Second, my colleagues on the East Penn Technical Team who have been supportive, resourceful, hardworking, and committed to continuous improvement and innovation in all aspects of our business while helping to maintain an academic environment.

Finally, I wish to recognize the remaining 7000+ employees of East Penn of various disciplines – manufacturing, sales, marketing and distribution – for their acceptance of change (product or process), their ‘can-do’ attitude, and their perseverance in making new ideas turn into today’s realities.

I must thank all of them. With their support, my responsibilities have allowed me to witness the improvements in the lead–acid battery industry from the laboratory, through manufacturing processes, to the final application and recycling. This has made my career very rewarding.

I have been fortunate to work in the lead–acid battery industry during an exciting period of tremendous technical advances in materials, manufacturing processes, new products and applications, and improvements in health and safety and environmental controls – much of this being accomplished by the global research efforts of the Advanced Lead–Acid Battery Consortium (ALABC). All of this work is essential for the sustainability and viability of our products, both now and into the future.

Please allow me to elaborate with a few examples that I often use while touring through plants with visitors and trying to give them an appreciation of all the scientific and technological disciplines (metallurgy, chemistry, electrochemistry, physics, mechanical and electrical engineering), which are used in batteries.

- Developments of battery components such as separators, alloys, plastics and additives (e.g., various forms of carbon) have significant influence on battery performance and are the evolutionary product enablers for future applications.
- Manufacturing equipment developed over the years using sophisticated computer-controlled technologies not only to make the operation more productive and safer but also to provide greater process control for better product quality, uniformity and reliability – factors that are critical to future applications such as smart grids and high-voltage hybrid electric vehicles.
- A series of chemical, solid-state physics and electrochemical processes are involved in the production of battery active materials (from lead oxide production, through paste mixing and curing, to formation) – these must be tightly controlled to ensure the required performance and durability of the product.
- The implementation of a variety of battery designs and features (utilizing the new developments stated above) to meet specific application requirements and specifications. There is a growing flexibility, tailoring and tweaking of designs to meet the demands of new applications.
- The infrastructure for environmental control has significantly improved to meet regulatory requirements at more stringent standards using high-efficiency particulate air (HEPA) filters, electrostatic precipitation, nanofiltration, reverse osmosis, and many other technologies.

We are in a very complex and complicated business, but we are making advances in all aspects. The combined efforts are critical to the growth and broader acceptance of our products and industry. As an industry, we must promote these accomplishments at in every opportunity, i.e., with politicians, customers, and investors – in fact anyone! We must discuss and demonstrate the following.

- New products and solutions for emerging applications.
- New technology to provide workplace and environmental safety – subsequent implementation is our moral and ethical responsibility.
- The significant recycling network and capability (96% as reported by the Battery Council International (BCI)). Lead–acid battery products are greener than most people realize.

We need to support and be involved in meetings such as the Asian Battery Conference (ABC) and the European Lead Battery Conference (ELBC), as well as the activities of organizations like the International Lead Association (ILA), Eurobat, BCI, the International Lead Zinc Research Organization (ILZRO), the Indian Lead Zinc Development Association (ILZDA), and the ALABC—to name a few. Through such action, we will broadcast our message to the world.

There is a bright future indeed for the lead–acid battery, and for our industry in general, as a constantly improving energy storage device to meet the needs of old and new applications. Personally, I am excited for the future, proud to have served for almost 40 years, and honoured to have worked with many of you here today. Let us all commit to continuing our efforts.

I would again like to thank those responsible for bestowing the International Lead Award on me and thereby granting me the

opportunity to address the 14th Asian Battery Conference (14ABC) here in Hyderabad, India.

Thank you for your kind attention.

R.P. Flicker
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