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OPENING ADDRESS

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By

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Thank you for inviting me to speak here this morning.

At the time of the first of these conferences, two years ago in Gladstone, the aluminium industry was looking up. Demand was good, and aluminium metal prices had risen to levels even the most optimistic observers had not anticipated. We all knew that the metal market would cool down, but there was a feeling that alumina producers would also soon feel the favourable effects of the greatly improved metal outlook. Coming after the very lean years in the mid-1980s, this was indeed a welcome change.

We now know, with the benefit of hindsight, that these "favourable effects" on the alumina markets were more powerful than we had dared to hope. As an industry, we certainly did not anticipate the strength of the change.

Overall, the world alumina producers did a good job in responding to the sudden increase in demand. Production now is about 15% higher than it was two years ago. Enough alumina was produced to make the metal that users were demanding. We struggled through.

But in the process many feathers were ruffled, and some of the industry's traditional assumptions were called into question. These questions affect us all, and the answers are not clear. I would like to use this opportunity to reflect on some of these matters.

The first big question is, is there a better way to ensure a better match between aluminium and alumina supply and demand in the future? This question arises at both the industry level, and also for each smelter and refiner.

We did not have to worry too much about this while readily available refining capacity continued to comfortably exceed demand, as it did through most of the 1980s. But now refineries are operating virtually at capacity, and the safety margin has gone. Productivity improvements and brownfields expansions should take care of the next few years, but major new greenfields investments will be needed by the middle of the 1990s if the demand for aluminium metal keeps growing.

We do not operate in a planned economy. We rely on the market, with its price signals, to provide the information and the incentive we need to keep supply up to demand. Adam Smith's "invisible hand" is better than anything else we have available, but the guidance it gives is rough and ready. The balance is reached usually after excessive swings of the pendulum in both directions.

This problem of trying to predict the future is not unlike the croquet game in Lewis Carroll's "Alice in Wonderland". You may recall that the mallet Alice uses is a flamingo, which

tends to lift its head and face in another direction just as Alice tries to hit the ball. The ball is a hedgehog. Instead of lying there waiting for Alice to hit it, the hedgehog unrolls, gets up, moves to another part of the court, and sits down again. The wickets are card soldiers, ordered around by the Queen of Hearts, who changes the game at whim by barking out an order to the wickets to reposition themselves around the court.

Substitute technology for the mallet, employees and customers for the hedgehog, and government regulators for the Queen of Hearts, and you have an excellent model for what happens in business today.

You may be familiar with the term "oxymoron" which is a figure of speech in which contradictory terms are joined together. Stable environments and predictable futures are oxymorons. We do not know what is ahead; the only reasonably assured prediction we can make is that the future will be different from what we think.

The poor record in looking further than we can see is not limited to people in business and industry. Some great experts and thinkers have misjudged the future badly.

- **Sir William Preece**, Chief Engineer of the British Post Office, predicted in 1876:

  "The Americans have need of the telephone, but we do not. We have plenty of messenger boys."

- **Thomas Alva Edison** once forecast:

  "Fooling around with alternating current, AC as we know it, is just a waste of time. Nobody will use it, ever. It's too dangerous. Direct current is better."

- **Lee DeForest**, a noted physicist and engineer who transmitted the first radio programme and put the first sound to film, argued in 1926:

  "While theoretically and technically television may be feasible, commercially and financially I consider it an impossibility, a development of which we need spend little time dreaming."

- **Maj. Gen. John K. Herr** of the U.S. Army declared in 1938, one year before mechanized armies of Germany overwhelmed Europe by blitzkrieg:

  "We must not be misled to our own detriment to assume that the untried machine can displace the proven and tried horse."

- And **Thomas J. Watson**, head of IBM, prophesied in 1958:
  "I think there is a world market for about five computers."

Alumina refining and aluminium smelting are capital-intensive industries. Decisions to increase production cannot be made lightly or implemented quickly. In alumina, there is no forward pricing mechanism to help us make the decisions.

All of us in the industry are currently preoccupied with finding ways to price alumina in the 1990s. This soul searching is healthy, even though differences of opinion have generated quite a bit of heat and strained some long-standing relationships.

Starting positions have ranged at the one extreme from a preference to settle all prices on a short-term basis (accepting that sometimes they will be very high and sometimes very low), to a preference at the other end for long-term contracts for up to ten years, priced on a given percentage of the metal price.

Short term pricing of long term supply-purchase relationships is well established in metals, where market prices often vary daily. Contract prices are frequently set quarterly. For bulk minerals such as iron ore, manganese ore, and coal, the practice is mostly annual renegotiation of contract prices. I do not know of any other intermediate mineral product where the price is fixed for long periods as a percentage of the metal price.

The pros and cons of the various pricing models have been amply debated. I doubt very much whether any one pricing mechanism will establish itself as the sole standard. Not all buyers or sellers will be happy with whatever method we as individual companies happen to think is best. We have to seek out those whose thinking matches our own, or compromise.

Probably we will have to do both. In the end, we will probably find that we have some new business partners, and that we will have parted company with others we have dealt with for a long time. There may be some heartburn along the way, but I am confident that the result will be a new network of relationships which will be more satisfactory to all concerned than what existed before, simply because we have all had to think it through very thoroughly.

The pricing question is essentially commercial in nature, but it also has a close relationship with another question I want to talk about, which concerns alumina's technical characteristics.

There seems to be general agreement on certain desirable "core" characteristics for alumina. All of you here know much more about these than I do, and about the work that is going on to ensure that refineries satisfy smelters' needs regarding these characteristics. I will leave that subject to the experts.

I will merely note that not all aluminas are the same, and not all smelters want exactly the same product. Most smelters have had long experience with one alumina or a limited number of particular aluminas. Smelter operators have become expert at maximising the efficiency of their plants in processing a particular type of alumina.

It is possible that, as a result of the redefining of commercial relationships which is now going on, many of these traditional supply arrangements will change. Some smelters may find themselves using alumina they have not used before, and some will probably be using several aluminas.

This will provide some interesting challenges. Those most immediately affected will obviously be the smelters. But it will not take long for the impact to spread to refineries, too.

The smelters will have their say about which aluminas their purchasing people are obtaining for them, and will be demanding that the suppliers provide a product and a level of service to suit them. The refineries will have to improve their game if they want their new relationships to be satisfactory. None of you good people attending this workshop are likely to be idle!

Perhaps I can use the opportunity to point to another change taking place, not only in the aluminium-alumina industry but more generally. This is the abolishment of the barriers which have existed since World War II between what have been, somewhat stiltedly, called "western world economies" and "centrally planned economies".

In the last year or so these barriers have been disappearing. Western businessmen and technologists now have increasing access to mineral operations and prospects in these countries. Information is becoming more readily available, although there are still amusing instances where some data are considered "state secrets". I think that this nonsense will disappear soon.

Doing business in some of these countries still faces the hurdles of uncertain governmental authority, unclear property and legal rights, currency problems, and so on, but it is no longer necessary to divide the world into two camps. For the first time in more than seventy years, we can now look at the supply-demand relationships for our products on a global basis. A large part of this new world is far behind the developed countries in their living and environmental standards. There is a vast pent-up demand for virtually everything. To supply this demand, and for those in the deficient areas to be able to pay for what they want, is a mammoth task ahead.

This does not mean that suppliers can look forward to permanently high prices. Markets will continue to fluctuate and prices may be high for short periods as in the past, but past experience also tells us that, over time, both the grades of ore treated and the prices of the products in real terms are gradually decreasing. The producers must make up for the lower ore grades and the reducing real prices by improvements in efficiency. Simultaneously, we must meet increasing community standards in environmental care.

The answer to this lies in continued progress in science and technology. Articles of faith are no longer good enough, as in the case of the elderly lady who told a famous astronomer after a lecture that his cosmology was all wrong. The world, she said, rests on the back of a giant turtle. When the astronomer asked what the turtle stands on, she replied: "You're very clever, young man, very clever. But it's turtles, all the way down."

Speaking of science and technology, I suppose it dates me as an ancient when I say that when I started school an atom was the smallest indivisible particle of matter. Now, I find, there are up quarks and down quarks, strange quarks, beauty quarks, charm quarks and top quarks. Strange quarks weigh 10 times as much as down quarks and beauty quarks weigh 50 times as much as the strange. Protons are two up quarks and a down, while neutrons are two down quarks and an up.

This is before you get involved with the lepton family with its muons and taus and neutrinos which all live in dynamic tension with the quarks within the chairs you sit on and in the socks you wear.

To make another confession in strict confidence, when I went to school we had not even heard of computers, satellite discs, word processors, electronic copiers, or cellular telephones. We actually had to learn how to multiply and divide, and to make ten copies of something took

a lot of time and carbon paper. Memory may be playing tricks, but I seem to remember that a lot less gadgetry and less copies of everything did not detract from our ability to get things done, and sometimes, I think, much faster than today.

Every so often I feel grateful that I have survived so much change and progress in such a short time without visible or permanent damage! I find I have a great deal of sympathy for the old lady and the turtles!

But science and technology is what we depend on to build a better future and overcome the problems which we have. This conference is a link in an endless chain of this striving for more efficiency and better performance. Apart from the professional pride and satisfaction of those involved, better performance is absolutely vital for the future. May I wish you every success in your deliberations. I have much pleasure in declaring the conference open.