

Annual Report 2005/2006





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Foreword



Gerhard Buddenbaum, GDA President

Dawn of new era

In 2005 our industry was able to follow up the good developments on a tonnage basis of the previous year in most areas. The first few months of the current year have also been marked by stability. If one considers the tonnage-basis developments of the aluminium industry over the last 15 years, which may have shown variations from year to year, one can see that our industry can rightly claim to be a growth industry. We hope that aluminium manages to further develop its potential in the coming years and that our industry and our companies prosper. The questions that have to be asked are: 'Where are the growth markets?' and 'Where will production be in the future?'

I believe Europe has a future both as a market and as a production location. Of course we are looking at other parts of the world but we should not forget that Europe is one of the world's largest markets. The fact that growth rates are moderate and not as high as in certain Asian countries is not only a disadvantage. It allows us to react more flexibly.

The production conditions in Europe are different to those in other parts of the world. Labour costs and energy costs are very high, especially in Central Europe. Even though one has to do everything possible to keep these within reasonable limits, we will not be able to compete with emerging countries on labour costs and with countries that have energy resources on energy costs. In future, we will have to produce products that require closeness to market and have a high added-value, and thus require lots of expertise and well-trained personnel coupled with a high level of service.

It is important to have a political framework that permits further development. Now that the new government in Germany has a stable parliamentary majority, there is hope that reforms will start to be made despite the discussions to the contrary. As the largest market in Europe, Germany plays a key role in the further development of Europe.

GDA – Gesamtverband der Aluminiumindustrie plays an important role in representing the interests of our industry. It works in a network with the member companies, with sister associations in other countries, with the European Aluminium Association (EAA) and with the International Aluminium Institute (IAI). The secretariats of the international trade associations European Aluminium Foil Association (EAFA), European tube manufacturers association (etma) and International Association



of Aluminium Aerosol Container Manufacturers (AEROBAL) are all administered by the GDA team. GDA has taken major steps forward in certain areas, including international co-operation. The team in Düsseldorf has put in a lot of effort in the field of technical marketing as well as in the image management of our metal and events for conducting the dialogue with critical groups. A comprehensive range of information is available, mainly in German, and is used in many European countries; in the German-speaking part of Europe more than 100 million people have German as their mother tongue. GDA publications are also increasingly being translated into English because many enquiries, especially those relating to advice on applications, come from other European countries and the rest of the world.

Since 1992, a restructuring of GDA has taken place in several stages. This has generated synergistic effects and, as in all areas of our industry, this has reduced costs radically. Today we have in Düsseldorf a GDA team that is effective, highly motivated and held in high regard; it implements the manifold interests of its member companies in an excellent manner in areas that are not always easy to deal with.

Gerhard Buddenbaum

President, Gesamtverband der Aluminiumindustrie e.V.

Markets

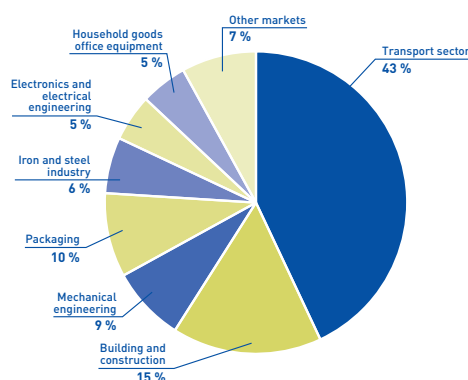
All in all 2005 was a positive financial year for the German aluminium industry. Production and demand for aluminium products showed moderate growth while turnover and employment were stable at a good level. The industry recorded volume growth, particularly in the important target markets transport, mechanical engineering and packaging.

As in the previous year, export had a decisive influence on the positive result overall. In addition to direct exports, German aluminium companies profited from the strong export performance of their customers. In the second half of the year there was a significant increase in new orders received, whereas the level of orders during the first half was weaker. From the middle of 2005 onwards there was a surge in domestic demand, which generated an additional impetus for growth in the second half of the year. 2006 got off to a very good start. Despite the continuing rise in prices on the London Metal Exchange, companies were able to achieve significant increases in new order intakes, production and turnover. In addition to the satisfactory developments in core markets, which have been going on for some time, the building and construction industry recorded renewed growth in business recently.

Aluminium markets 2005/2006

The turnover of the German aluminium industry increased by 4.5 per cent in 2005 to 13.9bn euros (2004: 13.3bn euros). The rise was partially attributable to the continued high price for primary aluminium. Between the middle of 2004 and the end of 2005, the prices for aluminium on the London Metal Exchange rose by about 25 per cent to 2,300 US dollars a tonne. During the current financial year, the physical demand has increased significantly despite prices continuing to rise. Developments in turnover have also showed an improvement over 2005.

Main markets for aluminium in 2005 and H1/2006 (in %)



The demand for aluminium in Germany rose by just under 2.6 per cent in 2005 to 3.1 million tonnes (2004: 3.02 million tonnes). In 2005, as in the previous year, some 73,000 people were employed in the German aluminium industry.

Developments in the various markets and product groups varied. In the transport and mechanical engineering sectors there was positive economic development thanks to the strength of exports. The commercial vehicle sector recorded a significant increase in production. Markets such as packaging and the electronics and electrical industry maintained a stable course of growth. Only the building and construction industry, traditionally the second largest market for the aluminium industry, continued to battle with structural problems.

2006 is expected to finish with growth in demand of up to 3.5 per cent. The order situation in the first six months of the year will ensure that companies' production levels remain high well into the second half of the year. Growth is currently being restrained somewhat by a shortage of the metal, which is restricting growth in production. About 41 per cent of all German aluminium production goes abroad. The growth rates for exports are impressive. Between 1999 and 2004 shipments of aluminium semi-finished products to EU countries rose by more than 20 per cent; during the same period, exports to North America increased by 90 per cent. Exports to South America, Eastern Europe and Asia were also above average over the past six years.

Outlook for 2006 / 2007

Generally speaking, one can sense a positive mood in the aluminium industry. Aluminium prices rose even further during the first few months of 2006. The expectations for 2006 in tonnage terms are optimistic. It remains to be seen how increased metal prices affect earnings. An uncertainty factor in the economic development of the industry are the continuing high prices for energy and raw materials and their impact on company earnings.

The dynamic growth that set in at the end of 2005 will continue to manifest itself well into 2006. The prospects for the downstream industries remain good, with the world's economy expanding, albeit at a slower pace. In addition to the USA and China, the EU region provides an important impetus for economic growth. Even though the developments in the different markets vary depending on the respective economic situation, without any exceptions the volume forecasts and growth expectations for the next few years are all optimistic.

The German aluminium industry will continue to report sustainable growth in its important target markets in the medium term. Carmaking will continue to dominate the transport sector; however, growth is also expected in shipbuilding, aircraft construction and local public transport systems. In the building sector, solar technology offers good opportunities for the metal and in the packaging industry the aluminium beverage can is expected to make a comeback in Germany.

Recently the building and construction industry in particular seems to have emerged from the doldrums. One can expect a slight uptrend during 2006 that will also carry over into 2007.

Overall, the prospects for 2007 are currently still non-uniform. The planned increase in value-added tax will continue to dampen consumer spending in Germany on the one hand but on the other the economic prospects for industry continue to look good. The growth rates in the

key markets transport, mechanical engineering and packaging are expected to decline somewhat as a result of the flattening of the global economy, but for the time being the prospects for the European Union remain good.

Economic data for the German aluminium industry

| Production | 2003 in t | 2004 in t | 2005 in t | H1/2006 in t | H1/2006 vs. H1/2005 in % |
|---|------------------|------------------|------------------|------------------|-----------------------------|
| Primary aluminium | 660,800 | 667,800 | 647,900 | 253,698 | - 23.9 |
| Secondary aluminium | 677,900 | 703,800 | 718,300 | 405,593 | - 3.2 |
| Aluminium semi-finished products | 2,151,100 | 2,246,700 | 2,312,000 | 1,167,836 | + 1.8 |
| Rolled products | 1,673,500 | 1,720,500 | 1,780,900 | 875,917 | - 0.5 |
| Extruded and drawn products | 464,700 | 523,500 | 527,900 | 289,997 | + 9.4 |
| Conductor material | 12,900 | 2,700 | 3,200 | 1,922 | + 30.8 |
| Aluminium mould casting | 677,100 | 715,700 | 727,200 | na | na |
| Die-casting | 376,900 | 400,700 | 400,300 | na | na |
| Permanent mould casting | 240,400 | 257,200 | 269,300 | na | na |
| Sand casting | 56,900 | 57,800 | 57,600 | na | na |
| Aluminium processing | 365,700 | 362,600 | 361,700 | 188,954 | - |
| Foil and thin strip | 304,400 | 302,900 | 303,700 | 158,454 | + 5.7 |
| Tubes, cans, impact extrusions | 61,300 | 59,700 | 58,000 | 30,500 | + 5.0 est. |

(na – not available)
Source: GDA-Gesamtverband der Aluminiumindustrie e.V.

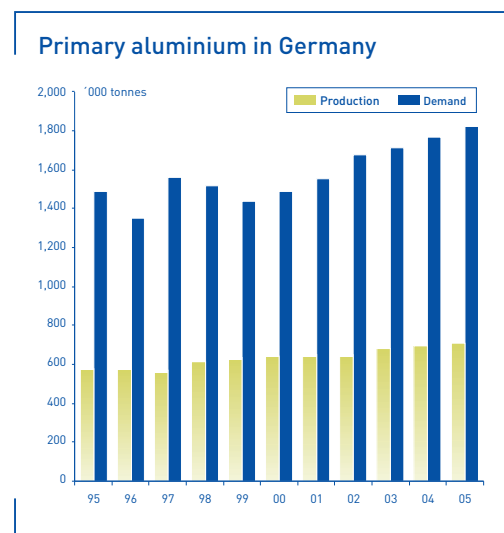
Specialist Trade Associations

GDA's product-related specialist trade associations are important partners for individual aluminium companies to exchange their experiences as well as representing the economic interests of the individual product groups and carrying out PR activities on their behalf. The specialist trade associations also provide the member companies with information on topics such as markets, environment and technology. A network of close links with other national and European trade associations enables GDA to also represent the interests of its member companies, and thus the whole industry, abroad in an effective manner.

Primary Aluminium Trade Association: Locational disadvantages lead to smelter closures

2005 marked a turning point in the history of the production of primary aluminium in Germany. The shutdown of the aluminium smelter in Hamburg and the planned closure of the aluminium smelter in Stade at the end of 2006 means that there will only be three primary aluminium smelters operating in Germany. The five German primary aluminium smelters produced a total of around 648,000 tonnes of primary aluminium in 2005, which was a drop of about three per cent on the previous year. On the other hand, the total demand for aluminium rose somewhat in 2005, up 2.6 per cent to 3.1 million tonnes.

By international comparison, the German aluminium industry is faced with major competitive disadvantages. The politically instigated added costs resulting from the Renewable Energy Sources Act (EEG), the Act on Combined Heat and Power Generation (KWKG), the eco-tax and the inclusion of the



costs for CO₂ certificates in electricity prices place a significant financial burden on the production of aluminium in Germany. The exodus of smelting capacity as a result of energy policy affects not only the employees at the smelters concerned but also has consequences for downstream processing.

Improve general conditions

Politicians and society at large need to improve the general conditions of the German economy in such a way that economic growth and employment are again given a boost. One has to put a stop to the gradual deindustrialisation of the country. GDA is thus involved in trying to keep every link in the value-added chain in Germany and to improve the general conditions for production facilities – via an economic policy that strengthens Germany as a business location and enables fair competition with businesses

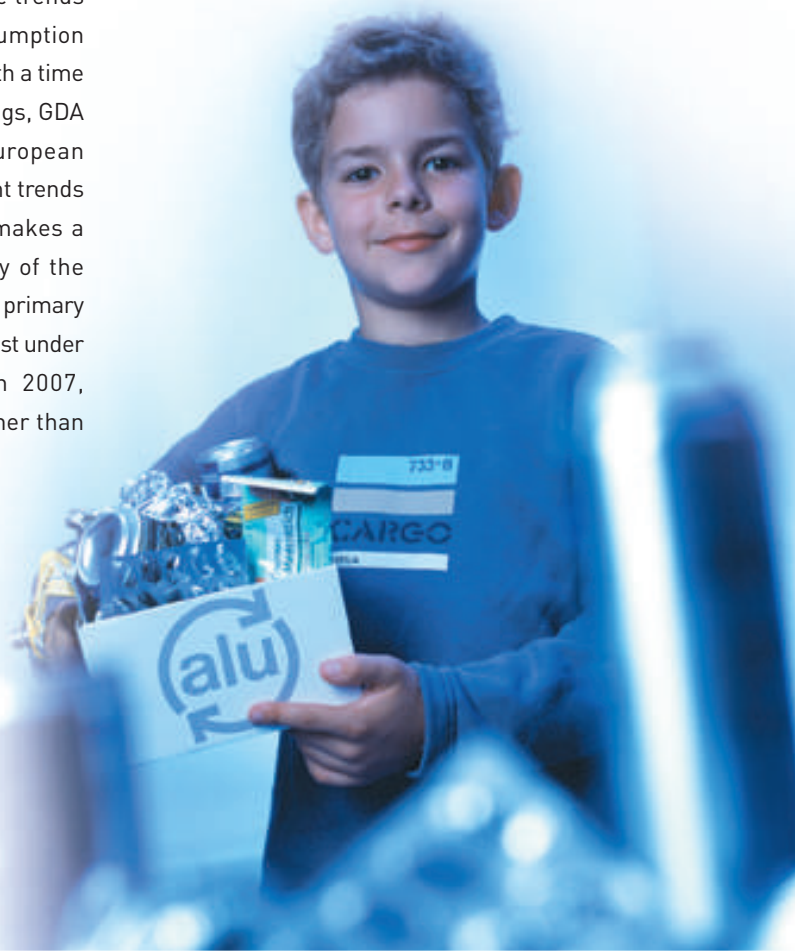
abroad. GDA's aim is to safeguard and maintain every job in the German aluminium industry. For some time, GDA has been warning of the danger: if the trend towards ever higher energy prices continues, one must expect this to have a negative effect on the whole value-added chain of the aluminium industry in Germany. There remains the threat of a domino effect – first the primary aluminium smelters will close down, then the processing plants.

Market analyses for the global market

GDA is a member of the Primary Division Statistics Committee of the European Aluminium Association (EAA), which meets twice a year. At these very intensive working meetings, data on production and capacities are evaluated and forecasts made. In addition, economic trends are discussed and forecasts for consumption are made for all countries worldwide with a time frame of up to two years. At the meetings, GDA reports on the prospects for the European economy and deals in detail with current trends in the main user markets and thus makes a significant contribution to the quality of the forecasts. In 2006, experts are expecting primary aluminium production worldwide to be just under 400,000 tonnes below demand. In 2007, production will be 150,000 tonnes higher than demand.

Besides providing pure statistics, information is also given on energy supply, the situation in the

alumina market and the duration of contracts with the electricity supply industry. Using these data it is possible to provide a very accurate estimate of the supply situation at a global level.



Aluminium Semi-finished Products Trade Association: Demand for aluminium semis continues to grow

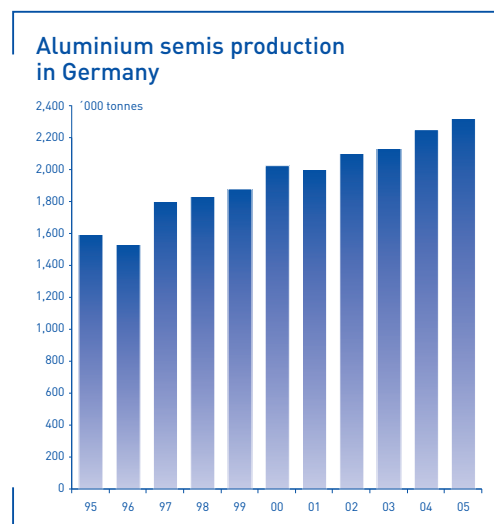
The Aluminium Semi-finished Products Trade Association represents the interests of different product groups, which use different manufacturing processes. Aluminium semi-finished products include rolled products with a thickness in excess of 0.2 mm, extruded products (profiles, rods and bars, tubes), wire, forgings and conductor material. The product groups are organised into special working groups where the current economic situation and economic topics are discussed.

The German semi-finished products plants increased production by 2.9 per cent in 2005 to 2.312 million tonnes. The turnover of the German rolling mills rose by 3.5 per cent, with exports in particular providing the impetus for increased volumes. Extruded and drawn products also reported a light recovery in 2005, with production increasing by 0.8 per cent. This was attributable to the very good export situation of the downstream industries in Germany. Growth markets were the car sector and mechanical engineering.

Overall, the growth rates for exports of semi-finished products are impressive. Shipments of aluminium semis to EU countries rose by more than 20 per cent between 1999 and 2004, with exports to North America increasing by 90 per cent during the same period. Exports to South America, Eastern Europe and Asia also recorded above-average growth in the last six years.

Market developments for both categories of semi-finished products have been good in 2006. Following somewhat restrained growth in 2005

the current year got off to a flying start and will show growth into the second half of the year. For the second half of the year GDA is currently expecting growth to settle down at a high level. The growth of production in the most important customer groups is expected to slow down somewhat, with orders recorded in the first half of the year ensuring healthy inventories.




Demand in 2007 is only expected to show moderate growth. The gradual slowing down of the US economy will lead to less rapid expansion of world trade, with a slight turndown in the US business of German carmakers and mechanical engineering companies. However, the building and construction industry and foreign trade with European countries and the continuing good economic situation in the emerging economies of Southeast Asia is expected to have a compensating effect. Overall GDA expects moderate growth, starting at a very high level.

Market analyses: a service for the industry

GDA has been a member of the Society of Friends of the German Institute for Economic Research (DIW) in Berlin for a year and participates in the DIW Industrial Conference, which takes place twice a year. At these meetings there is an

exchange of information and forecasts about the developments in the most important sectors of manufacturing. Besides carmaking and mechanical engineering, the aerospace, railway



supply, electrical engineering and printing industries are represented at the meetings. GDA uses this platform to report on the aluminium industry.

For some time GDA has been participating in the Euroconstruct European construction business conferences. At this event, representatives of the building and construction industry and research institutes from 19 European countries present their detailed market forecasts for all the important building and civil engineering sectors. In addition, GDA also participated at the Ifo Institute's spring conference on economic trends and developments in key branches of European industry. The results of the conference are processed

promptly and made available to GDA members. GDA is also a member of the economic circle of the Federation of German Industries (BDI) and uses this platform to exchange information with representatives of trade associations for other branches of industry in Germany. The network idea of such meetings fits in with GDA's strategic considerations and offers an informal exchange of information that is highly relevant.

At the beginning of 2006 GDA started issuing a quarterly newsletter on current market developments in the fields of primary aluminium and semi-finished products. This market information became highly popular from the first issue and gives the industry a prompt update on market developments.

Association meetings as information platform

The Rolled Products working group of the Aluminium Semi-finished Products Trade Association was reconstituted at the end of 2005. The main working topic is the European and global economic situation with respect to rolled products. In addition to developing a barometer to indicate the economic situation, data from European consumer groups are collated and used to produce a quarterly review of market developments in key branches of industry.

To make association meetings even more informative, the Aluminium Semi-finished

Products Trade Association regularly invites outside speakers to talk about topics of current economic interest. Guest speakers at the two events in 2005 included Heinz Gebhardt of RWI Essen, who spoke about the financial situation in German households, and Dr. Roland Döhrn, the head of the National and International Economic Analyses competence team, talked about the current and medium-term prospects for the Chinese economy. Furthermore the chief economist at IKB - Deutsche Industriebank is a regular and due to his profound knowledge of customer markets, a popular speaker.

Activities in European and international networks

The Aluminium Semi-finished Products Trade Association is an active member of various committees of the EAA and other organisations. At the meetings of the Short Term Panel on Industry Trends, which take place several times a year, market information and forecasts are presented for European countries. GDA is a regular participant and reports on market trends in Germany as well as on the economic situation

in Western and Eastern Europe and expected developments in the most important customer markets. The forecasts produced are included in publications issued by GDA and the EAA. The Aluminium Semi-finished Products Trade Association is a founding member of the European Extrusions Expert Panel, which issues consumer group statistics once a year. In this way, companies are kept informed of shipments

by European manufacturers to individual countries and the most important markets, with the data being presented in the form of a matrix. The exchange of information and the handling of matters of common concern are increasingly

taking place on a topic-related basis in networks without any rigid organisational structure. Here, the Aluminium Semi-finished Products Trade Association is in demand as a partner.

Cross-sectoral activities: PR and Technical marketing

Media and PR activities are also very important for topics in the field of aluminium semi-finished products. Not only customer magazines and the trade press are interested in aluminium-related topics: time and again, daily newspapers are also interested.

Customer enquiries regarding the subsequent processing of aluminium semi-finished products were part of the Technical Marketing department's advisory service. Co-operation with the respective quality assurance bodies and trade

associations on questions relating to the surface technology of aluminium semis was successful, as was the participation in official guidelines and standards projects via the Technical Standards Committee for Non-ferrous Metals of DIN (FNNE).

With companies making ever fewer specialists available for such activities, the demands made on GDA in general and on its specialist trade associations for specific tasks are growing.

Trade association for aluminium packaging: Three trade associations co-operate

Within GDA, the manufacturers of aluminium packaging are organised into three specialist trade associations: Aluminium Foil, Flexible Laminates, and Tubes, Cans and Impact Extrusions. There are a total of 38 member companies in the specialist trade associations and these are mostly medium-sized companies with a total of some 15,000 employees. These companies generate about 70 per cent of their turnover in the packaging sector, mainly in the food, cosmetics and pharma industries. The specialist trade associations represent the

interests of their members in the fields of politics, PR, statistics, standardisation, technology and food legislation.

As in 2004, there was also co-operation in 2005 and 2006 with Wirtschaftsvereinigung Metalle (WVM) and the European Aluminium Association (EAA) on the revision of the German Packaging Ordinance and the European Packaging Directive, which was undertaken together with other national and European trade associations.

Communication by means of events, trade fairs and project work

The communication activities of the packaging specialist trade associations included participation at the interpack trade fair, proactive PR activities with target-group oriented initiatives, action campaigns and competitions as well as

the publication of topical newsletters and publications. These activities were backed up by regular contact with journalists and intensive media activities.

interpack 2005: meeting point for aluminium packagers

At the world's leading trade show for the packaging industry, interpack 2005, GDA had its own stand which, as in 2002, it shared with EAFA, etma and AEROBAL. The trade associations informed visitors about their services as well as about innovative applications of aluminium in the packaging sector. Trade journalists from home and abroad and representatives of member companies used the stand as an industry meeting point and communications forum. Before and during the trade show GDA's presence was accompanied by press releases and the publication of specialist articles in the most important packaging journals. During the trade show the stand offered time and space for conducting background briefings with the winners of the EAFA Trophy and individual press interviews with, among others, the chairman of GDA's Aluminium Foil Trade Association, Dr. Hendrik Brenig.

GDA also made its presence known at other events held as part of interpack 2005: at the GS1 Germany Seminar on the traceability of packaging and Konstantin Thomas, chairman

of the Flexible Laminates Trade Association, made a presentation at the IKB Industry Forum. A 'happy hour' event, held for the first time midway through the trade fair, turned out to be a very well frequented members' meeting point and communications forum. Visitors also included representatives from the customer industry.



A press conference held by AEROBAL during interpack 2005 was attended by numerous trade journalists from home and abroad.

Competitions: visions and innovations

GDA held its 'alu pack vision' design competition for the first time in conjunction with interpack 2005. The competition was aimed at design students with the objective of developing and designing innovative aluminium packaging. Communication between the industry and colleges was just as much the focus of attention as the creative and artistic exposure to the lightweight material aluminium. GDA's main focus was on the award ceremony. The jury comprised Prof Ursula Scherer, lecturer on communications and 3D design at Niederrhein



alu pack vision design competition 2005

University of Applied Sciences, Dr Hendrik Brenig, chairman of GDA's Aluminium Foil Trade Association and Alwin Schmitt, editor-in-chief of the periodical Aluminium Praxis. The awards to the three prize winners were presented jointly by the chairman of the board of Messe Düsseldorf, Werner Matthias Dornscheidt, and Dr. Hendrik Brenig.

Werner Matthias Dornscheidt, chairman of the board of Messe Düsseldorf, with the winners of the GDA alu pack vision design competition



Competitions organised by EAFA, etma und AEROBAL

The Alufoil Trophy (EAFA), Tube of the Year (etma) and Aerosol Can of the Year (AEROBAL) competitions all have a high standing throughout the whole packaging industry. The official presentation of the Alufoil Trophy was made on GDA's stand at interpack 2005. As an example of the high esteem in which the Alufoil Trophy is held, the CEO of Impress attended the presentation ceremony personally and took part in a question-and-answer session with the press on the GDA/EAFA stand. The three winners of the packaging competitions were displayed exclusively in a special exhibition at Messe Düsseldorf Press Centre and also appeared on television during a report on interpack 2005.

Special exhibition covering the three aluminium packaging competitions at Messe Düsseldorf Press Centre

In 2006, the prizes will be presented to the winners individually, for example during joint customer events.



Publications

The most important publication in 2005 was a new edition of the packaging brochure. It is an informative image brochure and includes the complete range of traditional and innovative aluminium packaging. The publication has met with a very good response. GDA has documented technical information on the subject of packaging

in the new Technical Information W18: Aluminium in the Packaging Industry – Manufacture, Use, Recycling. As the title indicates, the Technical Information presents an overview of the manufacture, use and recycling of aluminium packaging, starting with the casting process and

going right through to printing/embossing and recycling; it is intended for use by manufacturers and processors. Both the brochure and the Technical Information are available in German and English.



The Tubes, Cans and Impact Extrusions Trade Association produced a policy document on axial forces in aluminium aerosol cans. It contributed towards strengthening the competitiveness of aluminium aerosol cans. In addition, in another policy document the specialist trade association lobbied for a relaxation of the regulations governing a change of materials for tube closures planned for the end of 2006. The trade association also produced a policy document on the test conditions for determining the porosity of internal lacquers on aluminium tubes.

Media Works: topical and target-group oriented

The main emphasis of the media work and PR activities for aluminium packaging was on the regular publication of current press releases covering the economic state of the industry, articles on possible applications of aluminium in the packaging sector or arranging for topical articles to be published in the packaging media. For example, for the first time in 2005 EAFA was actively involved in the publication of an article in a special edition of the Financial Times covering aluminium.



Steady growth in online communications

The packaging trade associations use the internet intensively to communicate with members and the industry.

The AEROBAL website alone now has several thousand visitors a month. The etma website of the European tube industry is also well frequented and offers the industry a common platform under www.etma-online.org. As in the previous year, the EAFA website showed steady growth in the number of hits and is now the leading source of information on aluminium foil on the internet, as the rankings from search engines such as Google show.



Always present at industry events, workshops and seminars

The specialist trade associations provide their member companies with market-relevant information by means of sector-related talks and workshops as well as topic-related events covering subjects of current interest.

- Attendances are on the increase at the seminars for sales managers organised by the Aluminium Foil and Flexible Laminates trade associations, with external speakers coming in part from the customer industry.
- The guest speaker at the joint spring meeting of the three German specialist trade associations was Professor Straubhaar, president of the

Hamburg Institute of International Economics (HWWA), who talked about what needed to happen for Germany to regain its leading position.

- GDA supported the 6th ECR Day on 6-7 September 2005 in Düsseldorf, a meeting of trade and industry with over 1300 participants.
- GDA made a presentation titled 'Aluminium Foil in Packaging – Innovative and Modern' at the new packaging material trade fair Packmittelmesse P, which was held on 15-18 June 2005 in Stuttgart.

Statistics and standardisation: Benchmarking for members

The market statistics and productivity comparisons provided by the German and European trade associations help member companies monitor markets. They serve as benchmarks and help companies plan and implement future market strategies. The

statistics are constantly being optimised and adjusted to meet the individual needs of the market players. As part of the transformation of the European AEROBAL into an international organisation in 2006, what had hitherto been

European statistics for aluminium aerosol cans were extended to achieve global coverage. The national and international market working groups of the trade associations offer their members interesting forums for obtaining a comprehensive overview of the economic situation in the industry and for dealing with other company-relevant questions.

As far as standardisation is concerned, the trade association actively participates in the national standards activities of Standards Committee Packaging (NAVp) 2.8 'Tubes'. The committee's aim is to introduce standards developed at national level as standards projects for CEN, the European standards organisation, and to push for their adoption. It is also actively involved in the two standards projects initiated by etma

in 2005. Five existing standards covering tubes are currently being revised in order that they conform to the state of the art in the industry. GDA is actively involved in, and is co-financing the drafting of a European standard covering the hygiene demands made on packaging material manufacturers in the food industry.

At the beginning of 2006, etma initiated a survey in four European countries covering the image of aluminium tube, and this was complemented by an internal etma survey on customers' perception of aluminium tube. Based on the results of these two surveys, etma is planning to conduct a communications campaign during 2006 in order to improve aluminium tube's image in the eyes of consumers and customers.

Co-operation at international level

The international packaging trade associations European Association of Aluminium Aerosol Container Manufacturers (AEROBAL), European Aluminium Foil Association e.V. (EAFA) and european tube manufactures association (etma) are all administered from Düsseldorf. EAFA represents some 130 members from 24 countries in Western, Central and Eastern Europe and gained 11 new members in 2005. etma represents 52 member companies from 19 European countries and AEROBAL represents the interests of 15 members from 10 European countries.

At the end of September 2005, AEROBAL decided to become a global organisation from 1 January 2006. The existing European member companies were joined by aluminium aerosol can manufacturers from North and South America and Asia. AEROBAL now represents about 70 per cent of the global aluminium aerosol can market. The first meeting of the new International Organisation of Aluminium Aerosol Container Manufacturers (AEROBAL) took place in London on 31 May 2006. As a result of the expansion of the organisation, the annual

AEROBAL competition will be renamed the World Aluminium Aerosol Can Award. The jury for this award comprises representatives from well-known international packaging journals.

An example of EAFA's activities is a biannual report with which it keeps the metal rollers amongst its members informed about foil production worldwide. The data are a maximum of six months old and cover more than 90 per cent of the world's production.



World Aluminium Aerosol Can Award trophy

In 2005 and 2006, EAFA continued to pursue its goal of establishing aluminium foil as a recognised functional barrier in the European 'super directive' for plastics in contact with foodstuffs. This will afford manufacturers of flexible packaging with aluminium foil competitive advantages over other material combinations. The Rewinder Group (Household Foil), which had existed since January 2005, was successfully integrated in EAFA. The group has four new members and a market coverage of about 75 per cent.

During 2005, a plan was developed to integrate the previously independent trade association Flexible Packaging Europe (FPE) in EAFA and this was implemented with effect from 1 January 2006. This will result in a closer relationship between customers, such as converters, and both the aluminium foil manufacturers and the metal. FPE benefits from an additional service, namely lobbying at a European level in the important fields of food legislation and certain environmental topics.

Other activities of the European trade associations at international level:

- By participating at ROSUPACK 2005, the largest packaging trade fair in Central and Eastern Europe, EAFA exhibited in Moscow for the first time. EAFA was a promotional supporter of Alumpack, a part of ROSUPACK, and in addition provided promotional support for the Aluminium in Packaging Conference in its search for speakers. EAFA also exhibited again at ROSUPACK 2006 with an information stand.
- AEROBAL made a presentation at Alumpack in order to make contacts in Eastern Europe and promote the use of aluminium aerosol cans in this region.
- EAFA placed emphasis on China in 2005/2006. Dependable local contacts were made during a visit by a delegation of the executive committee of EAFA's Roller Group in January 2005. In addition, at the China Aluminium Forum 2005



EAFA presentation at ALUMPACK in Moscow

in December, Stefan Glimm made a presentation titled 'News and views from the European aluminium foil industry'. The aim of these activities is to stimulate the use of aluminium foil in China. In this respect, EAFA was also a promotional supporter of the 2006 China Aluminium & Packaging Conference, which took place from 27 to 30 June in Peking and at which Stefan Glimm gave a presentation under the heading 'Creating demand for aluminium foil in mature and emerging markets'.

- In 2005 EAFA initiated a study at the Fraunhofer Institute on the use of aluminium foil in microwaves in order to demonstrate scientifically that the metal can also be used in such applications without any problems, and thus create new market potential in the ever more important field of convenience foods.
- At the biennial meeting of the executives of the Roller Group in May 2006, which takes place alternately in Europe and Japan, EAFA made a presentation covering the organisation of the association, products and markets.

National and international committee work

The conformity of packaging with the demands made by food legislation has been gaining in importance for many years. GDA monitors and is actively involved in the developments in national and European legislation in the fields of food legislation and materials that come into

contact with foodstuffs. This includes maintaining two databases which document food legislation relevant statements on the conformity with foodstuffs of the lacquers used by member companies.

Metal Powder Trade Association: Qualified representation of the industry

The main activities of the Metal Powder Trade Association are political lobbying, legislation covering transport and dangerous substances, statistics and custom matters. The most important task in 2005 was to improve the trade association's statistics for Europe and Asia. With exports accounting for some 70 per cent of production, this was an important matter for the industry. In 2006, four European manufacturers of metal powders were integrated into the Metal Powder Trade Association, which was subsequently administered as the Metal Particulates Division within GDA. The integration of the European metal powder manufacturers is evidence of the efficiency of the platform that GDA can also offer European manufacturers.

Working together with WVM and EAA, it was possible to further prevent aluminium powder being classified as a danger to the environment. In addition, European policy on chemicals and substances played a key role for member companies. Here it was possible to prevent metals in particulate and powder form being treated differently, which would have placed a severe burden on the manufacturers of metal powder.

With the support of WVM, the Metal Powder Trade Association monitors international developments in the customs field. Thanks to

GDA's close network of contacts with other national and European trade associations, the interests of the member companies of the trade association and thus the industry could be represented effectively, even beyond the confines of national borders.

In the second half of 2006, GDA's Metal Particulates Division will start publishing a series of articles that clearly illustrate the use of metal powders in markets so diverse as building and construction, carmaking, cosmetics and printing inks, in order to make more people aware of the wide range of possible applications for metal powders.

Foamed component produced powder metallurgically for the newly developed separating net in the Audi Q7



Media Work and PR Activities

GDA's ongoing communication activities are the basis for ensuring a good profile for the metal, the companies of the industry and the trade association in the trade and financial press as well as in the electronic media.

GDA's communication activities are based on continual and up-to-date media work consisting of press conferences, background briefings and media releases. In addition to the traditional annual press conference, which is used to nurture personal contacts with journalists from the trade and financial press, one of the main emphases of the work is the placement of application-related and authored articles about aluminium on topics of current interest. Other key aspects of the press work and PR activities are maintaining a presence at important trade fairs and providing professional support for local events covering training and further education organised by member companies.

GDA media work 2005/2006

All the important events, such as the annual press conference in 2005, the trade fairs and the World Youth Day, were accompanied by detailed press work. In addition, up until the end of the second quarter of 2006 placement was achieved for nine articles relating to topics from the packaging and building and construction industries. Ten authored articles on topics relating to the job market development in the

industry and specialist articles about the fields of building and construction and transport which appeared in a wide range of different media served to emphasise GDA's expertise and the leading role it plays. The GDA annual press conference in 2006 will take place in November.

Specialist and exclusive articles demonstrate materials expertise

GDA's specialists have established themselves as competent partners thanks to interviews, guest editorials, authored articles and technical papers. On top of this, the GDA article service informs the trade and financial press continually about innovative applications, current technical advances and market trends and provides background information about the industry.

The article service has established itself with trade journalists as a qualified source of information and a large number of the articles have been reproduced.

The latest information on the metal and the industry

GDA's media releases covering topics of current interest concerning the metal appear regularly and keep journalists from the trade and financial press continually informed about new developments in the industry and the trade association. The traditional GDA annual press conference in autumn is a must for the representatives of the financial and trade press. It was attended by around 30 journalists in 2005. In February 2006, GDA organised an interview for the trade press at Alcan Packaging in Singen at which the newly elected chairman of the Aluminium Foil Trade Association, Manfred Witzstrock, spoke about innovations and current statistics in the field of aluminium foil.

GDA's trade fair appearances, events and seminars are also accompanied by press work and support the good working relationship with journalists from the various target media in the



Moderate growth in production and demand and stabilisation of turnover and employment at a good level were the main points raised at GDA's annual press conference

same way as visits to editorial offices, one-on-one interviews and topical specialist articles. Journalists can access all press material online at www.aluinfo.de.

GDA-Highlight is a new communication medium that was conceived with journalists, partners, member companies, opinion leaders, politicians and other interested parties in mind. The first issue of GDA-Highlight appeared to coincide with World Youth Day. The second GDA-Highlight has just been published and sheds light on GDA's co-operation with the German Maritime Rescue Service (DGzRS) and the Ballonsportteam-Langenfeld. GDA will publish further issues of GDA-Highlight at irregular intervals in future and use this vehicle to present information in a brief, informative and prompt manner.



Other Highlights in 2005 and 2006

Participation at the World Youth Day 2005 and the didacta trade fairs in Stuttgart and Hanover were other important events in GDA's calendar.

World Youth Day 2005 – aluminium meets youth

There was extensive and positive medium response to the unusual co-operation between industry and youth at the World Youth Day 2005 and all the reports in the daily newspapers and on radio and television were positive. Even Pope Benedict XVI was thrilled. His state secretary sent a letter at the beginning of November thanking the aluminium industry for its involvement in World Youth Day 2005 and for the 'fine initiative for social involvement by young people'. The handing over of the aluminium lantern carrying the Light of Peace to Bishop Franz-Josef Bode of Osnabrück, chairman of the Youth Commission of the German Bishops' Conference, at the 96th German Catholic Day in Saarbrücken marked the end of the aluminium industry's direct involvement in the World Youth Day. Pope Benedict XVI wants the lantern to be made available 'for religious services and events involving young people and the Holy Father's great concerns, peace in the world and the welfare of all people and nations'.



The aluminium cross: a symbol at the campsite in Düsseldorf that was visible from afar



In addition to the central events of the World Youth Day, there were many 24-hour activities at numerous locations of the aluminium industry



Motivated by a distinguished guest: Chantal Petitclerc, five-times Paralympics champion in Athens

throughout Germany in which employees and local scout groups carried out projects on a non-profit basis. In this way, the aluminium industry demonstrated that companies' responsibilities in social and ecological matters do not end either at the factory gate or after World Youth Day. The activities took place, for example, in day nurseries and kindergartens in Grevenbroich, Neuss, Koblenz and Voerde; they included the laying out of a barbecue site, the installation of benches in a park and the building of a complete new scout camp.

didacta in Stuttgart and Hanover

GDA exhibited its current range of products that provide information about aluminium for teachers from all types of school at the didacta trade fair in March 2005 in Stuttgart and in February 2006 in Hanover. The existing practice-oriented 'Aluminium kompakt' teaching materials, which include a folder for teachers, a case containing various exhibits related to aluminium and an up-to-date CD ROM with information and video clips about aluminium, have been around for some years. A new folder for teachers containing teaching materials for vocational schools and several metal-processing courses were also on show.



Illustrative material for the three metal-processing courses for schools



Almost an institution: the GDA stand at didacta

The metal-processing courses for schools are very popular as are those for cross-occupational training and, like the case and folder for teachers, were very much in demand.

GDA has participated at the didacta trade fairs without a break for the past six years and has thus ensured long-term co-operation with teachers all over the country. Many teachers come to the GDA stand every year and ask about new items on offer and additions to existing ones. This dialogue ensures that the material is constantly modified and extended to meet the changing needs of the teachers.

GDA's Luftikus – the sailing ambassador

Since June 2005 a hot-air balloon has been sailing around and promoting aluminium. The silver coloured hot-air balloon, which has been sponsored by GDA for the next three years, carries the aluminium recycling logo and the name D-OGDA. The letter D stands for the country where the balloon is based, O indicates it is a free balloon and GDA is the eponym.

Besides the pilot, the 28 metre high balloon can carry up to three passengers and is available by prior arrangement for use by GDA members at company celebrations, in-house exhibitions and other events. With this activity, GDA wants to use the fascination of ballooning to make people more deeply aware of aluminium and the recycling loop.

With this objective in mind, the crew took part with the balloon this year at night glows at the Cologne Lights and Leverkusen Feuerzauber firework displays as well as at the Kesselweier Aerodrome Festival and during the interlude at the CHIO Horse Show in Aachen. At all of these events, the recycling logo shone brightly in the night sky and particularly in the case of the Cologne Lights could also be admired as part of an outside broadcast shown on television. However, Luftikus did not only live up to his role as ambassador while on the ground participating in night glows with other hot-air balloons, he could also be seen in the service of aluminium in the skies over the Ruhr Area, the Rhineland and Munsterland; his mere presence was enough to grab people's attention.



Gerhard Buddenbaum baptises the aluminium industry's sailing ambassador with a "Glück ab und Gut Land!" (have a good flight!)

D-OGDA

Technical data:

Volume: 3,400 cubic metres

Envelope: 24 m diameter

Overall height: 28 m

Permitted no. of passengers: 4

Burner performance: 3,000 kW



Renewed co-operation with DGzRS

GDA sponsored the German Maritime Rescue Service (DGzRS) two years ago when the new rescue cruiser Hermann Marwede, which is made completely of aluminium, was commissioned. This year, GDA's executive director Christian Wellner accepted an invitation from DGzRS to experience 'our' ship in action on water. Together with the chairman of DGzRS, Consul Michael Grobien, an exclusive inspection of the ship was conducted in the German Bight in order to demonstrate the agility and possible applications of the aluminium ship in a (mock) rescue operation. Typical North Sea weather with rain, wind and a sizeable swell, turned the



The final mooring of the Paul Denker at the Focke Museum in Bremerhaven.

trip into an unforgettable experience and served to strengthen confidence in the capabilities of the ship and its crew.

GDA also supported DGzRS this year by sponsoring the transportation of the Paul Denker to the Focke Museum in Bremen. The Paul Denker is regarded as the prototype for a series that was later modified and extended by about two metres. It went into service in 1967 and was the first DGzRS ship to be made completely from aluminium and simultaneously the smallest marine rescue vessel with a daughter boat ever to have been built in Germany. GDA will also be looking for ways to support these projects in future.

Chocolate Obsession at Imhoff-Stollwerck-Museum, Cologne

GDA continued its successful co-operation with the Chocolate Museum in Cologne by supporting the Chocolate Obsession Collage exhibition of the Canadian artist Christina Stahr. As with the exhibition 'Shiny wrappers for sweet seduction – chocolate packaging made from aluminium', which was initiated by GDA and held at the same location in 2003, chocolate packaging made from aluminium was also the centre of attention in the artist's works. Her colourful collages of shimmering gold-coloured aluminium wrappers

Aluminium chocolate wrappers with a difference



and coloured foil on paper and canvas are reminiscent of expensive tomes and, of course, the pleasure of chocolate. They were the ideal complement to the first exhibition, in which the focus was primarily on the functional side of chocolate packaging made from aluminium.

Technical Marketing

In addition to the most important markets, namely transport, mechanical engineering, building and construction and packaging, technical marketing also includes the areas of surface treatment and corrosion as well as standardisation and alloy designations. Continual monitoring of the market by GDA's experts ensures that advice is competent and well-founded. Current market trends and developments are integrated promptly into GDA's advisory service. In addition to the seminars and individual advice offered by GDA, the specialists are also in demand to give lectures at external seminars and congresses.

High degree of competence in materials issues and technical advice

The main emphasis of the technical advice regarding applications is on issues relating to the automotive, mechanical engineering and surface technology markets. A marked increase in questions relating to façade cleaning and corrosion behaviour was recorded. The GDA specialists also make site visits in order to provide quick and effective help. Customers range from private individuals to employees of large concerns.

GDA supported the development of an innovative product, Cool Twister, with help and advice. Cool Twister enables boiling water to be cooled to any desired temperature between 40 and 60 °C within 80 seconds. The product was developed for the preparation of baby food.



Innovative product: the developers of Cool Twister used GDA's expertise to put their idea into practice

Professional searches in the GDA library

Anyone who requires information over and above that provided by the personal advisory service can personally conduct a literature search in the GDA library. This contains the world's most comprehensive collection of literature in German on the subject of aluminium.

Large participation at traditional seminars

One can no longer imagine an aluminium events calendar that does not include the two seminars run by GDA, in German, covering surface treatment of aluminium and the technology of extruded profiles. Every year both long-established seminars offer an up-to-date programme of lectures. In 2005 GDA again organised the seminars itself and achieved a good response with some 40 participants at the surface treatment seminar and about 20 at the extrusion seminar. In 2006, both seminars will be held in October, with the extrusion seminar on 11 October and the surface treatment seminar on 30-31 October.

The seminar on the cleaning and maintenance of metal surfaces, which was held for the third time, was also successful. There were 22



The participants at the surface treatment seminar following one of the lectures with great interest

participants from companies engaged in façade cleaning and planning, and facility management and from system providers. All of the seminars are characterised by the detailed and practical handling of the contents using examples of applications from the fields of materials, processes and design.

Co-operation with other committees

Activities in the areas of surface treatment, materials, semi-finished products and joining technology include membership of national and international standards committees. The main areas of emphasis are surface treatment and corrosion, which are dealt with in the technical committees of the QUALANOD Quality Label and the Quality Association Anodised Aluminium as well as the GSB Quality Association for Piece Coating of Aluminium Components.

The working groups for which GDA is responsible, Corrosion Chemistry and Roof and Wall, deal with basic technical matters and have the task of ensuring that aluminium's inclusion in technical guides is appropriate for the material and of creating acceptance of the metal in the marketplace.

▣ **Roof and Wall Working Group:** under the chairmanship of the German Commission for Electrical, Electronic & Information Technologies (DKE), basic rules for the use of metal roofs as natural lightning conductors are being prepared in co-operation with other metal trade associations for roof covering and lightning protection companies.



Practical exercises at the aluMATTER symposium held to present the e-learning tool

■ **Corrosion Chemistry Working Group:**

evaluation with member companies of the lists prepared by the Federal Institute for Materials Research and Testing (BAM) for the resistance of aluminium to various substances with regard to substance-related approval for road tankers and silo vehicles.

■ **European Leonardo da Vinci programme:**

GDA helped develop aluMATTER, an interactive

e-learning course, together with the EAA, 20 partners from the aluminium industry, universities and institutes. The modular course is aimed at providing technical and scientific information on aluminium for students at technical colleges and universities and engineers. The project was officially concluded during a symposium at the end of November 2005 and publicised via a large-scale practical test involving universities.

Specialist information: AluminiumTechnik

The number of subscribers to GDA's AluminiumTechnik information service is increasing continually. The publication appears four times a year and provides intersectoral information on current technical developments in the fields of carmaking and mechanical engineering, and about events covering the individual topics. The publication also includes information on new

standards and brief news about the industry. To mark the 50th anniversary of the Schwansbell Bridge in Hamm, Germany's first all-aluminium road bridge, GDA published a special article in German and English. In future, GDA will also issue special publications covering items of technical interest in both languages.

Participation at seminars and presentations

GDA's specialists regularly give lectures or make presentations at conferences or at educational establishments on the uses and fields of application of aluminium. As a result of the intensified co-operation with universities, technical colleges and institutes and the growing demand from the industry, the following presentations were made (in German):

■ A lecture on the current applications of aluminium and its future prospects at the Fachhochschule Südwestfalen in Meschede as part of an end-of-semester event dealing with lightweight construction. This lecture is now a part of the college's calendar and is held every January.

■ Lecture: 'Aluminium – a lightweight material for commercial vehicles' at DaimlerChrysler AG, Mercedes Benz Nutzfahrzeuge in Stuttgart

■ Lecture: 'Aluminium – a lightweight material' at Schweißtechnische Lehr- und Versuchs-

anstalt (SLV) in Duisburg

■ Lecture: 'Use of aluminium in the building and construction industry'; presented during a materials colloquium organised by the Institut für Werkstoffkunde der Staatlichen Materialprüfungsanstalt Darmstadt and the Technische Universität Darmstadt

■ Lecture: 'Aluminium – building material for the modern age' at a meeting of the Hamburg State Association of BDB - Bund Deutscher Baumeister, Architekten und Ingenieure e.V.

■ In-house seminar with the title 'Aluminium - production, standardisation, applications and prospects' at Freudenberg Forschungsdienste KG in Weinheim

■ In-house seminar with the title 'Aluminium – material and surface technology' held at Ebro Armaturen Gebr. Bröer GmbH, Hagen

- In-house seminar with the title 'Aluminium – a lightweight material for commercial vehicles' held at Zöller-Kipper GmbH, Mainz

The dates have already been fixed for presentations in the second half of 2006 at SLV Duisburg; the topics to be covered are alloy types, properties, standardisation and surface treatment.

Technical advisory service

The AIS Aluminium Information Service is the No. 1 address for everyone looking for detailed and specialist information on the metal aluminium. In 2005, the GDA information service received some 5,500 inquiries from home and abroad. Over 50 per cent of the inquiries were sent by e-mail; GDA ensures that all queries

are dealt with quickly and that the answers given are up to date.



Ecology

GDA and its members support the overall concept of sustainable, future-oriented development that is based on meeting the needs of the people living today without jeopardising the ability of future generations to satisfy their needs. This involves continuously striving to reduce the environmental impact of production and products over the whole life cycle, taking on social responsibility towards society and achieving continuous progress by adopting best practices.

Lobbying for the metal via open dialogue

GDA also pursued its ongoing dialogue with the most important stakeholders in 2005 and 2006; these included environmentalist groups, scientists, politicians and church representatives. The intensive contacts with ecological research institutes involved in advising politicians were maintained. The aim of these contacts is to proactively influence environmental discussions about the metal aluminium, to remove prejudices and to establish and further improve aluminium's acceptance as a material. Continuity and a

constant participation in this process of dialogue are important prerequisites in order to ensure that when it comes to competition on sustainability with other materials aluminium is positioned properly and successfully. GDA will continue this dialogue in future, too. In order to support the dialogue, GDA is working on prescribed terminology, argumentation aids and specialist brochures, also at international level.

Involvement in ecology and sustainability

GDA is continually involved with the standards committees dealing with ecology and sustainability in the building sector. It also participates in the Round Table on Sustainable Building organised by the German Federal Ministry responsible for building. At the instigation of GDA, Hydro Building Systems GmbH, Ulm, presented its long-term project 'Contribution of aluminium-glass façades to sustainable building when constructing office blocks'.

GDA is involved in the most varied range of activities and initiatives at national and European level dealing with the standardisation of 'sustainable building'. The most important of these are the building-related standardisation activities of ISO, CEN and DIN as well as initiatives concerning the ecolabel for building products. GDA is currently working together closely with the aluminium trade associations of Austria and Switzerland in the fields of ecology and sustainability. Thanks to regular exchanges, one is able to benefit from cross-border synergistic effects. In Austria, GDA supports the Austrian Institute of Building Biology and Ecology in producing its 'Guide for calculating eco-parameters for buildings'.

In addition, GDA helps EAA conduct surveys aimed at providing basic data in the fields of eco-balances and sustainability. GDA is also involved in the EAA sustainability project to prepare an environmental declaration for windows. The discussions help remove prejudices, emphasise things one has in common and thus continually improve the mutual understanding for the concerns of stakeholders and the aluminium industry. GDA will continue this dialogue with relevant stakeholders in future, too.

At the first Wuppertaler P&K-dialogue in March 2006 under the heading 'Production and consumption jointly for sustainable development' GDA made a presentation titled 'Companies in discourse

with stakeholders – the example of the aluminium industry'.



A high scrap value and good recycling properties boost the demand for aluminium beverage cans

In February 2006 GDA hosted an impulse workshop in Düsseldorf under the heading 'Sustainable building – where does aluminium stand?'; external experts such as Gerhard Günter, deputy assistant under-secretary at the German Federal Ministry of Transport, Building and Urban Development, Berlin, and Alexander Rudolphi, managing director of Gesellschaft Ökologische Bautechnik mbH, Berlin, discussed the positioning of the aluminium industry in the field of sustainable building.

A uniform system for the return of beverage containers was introduced in Germany on 1 May 2006; it was anticipated that aluminium beverage cans would return to the packaging market and there were expectations for high recycling rates. Thus together with its member companies, Alcan, Hydro and Novelis, GDA commissioned a study by the Heidelberg-based Institute for Energy and Environmental Research (IFEU) with the title 'A comparison of the eco-balances for aluminium cans and returnable glass bottles using case studies for the distribution of beer'. This study demonstrated that with high recycling rates and appropriate transport distances the use of the aluminium beverage can reduced the impact on the environment and thus confirmed the beverage can manufacturers' faith in the aluminium beverage can. Interest in the study is not restricted to publication in the media; politicians and NGOs have also been interested in seeing the results in detail.



Co-operation at international level

In close co-operation with EAA, IAI and WVM, GDA is participating at international level in various working groups dealing with topics relating to environmental policy. One of the joint long-term activities that GDA supports technically is the EU initiative 'Integration of Environmental Aspects in Standardisation'. The aim here is to create a higher ranking eco-standard that has to be a part of any other standard.

The European Parliament has issued an EuP directive covering the ecodesign requirements for energy-using products. Together with representatives of other trade associations, such

as those representing the copper and steel industries, EAA and GDA as project coordinators developed methods for determining the life cycle of energy-using products.

On behalf of the European Commission, GDA and EAA administer a Europe-wide database for life cycle assessments. Further information is available at <http://lca.jrc.ec.europa.eu/>. In a keynote presentation to the DG Environment of the European Commission, GDA explained the use of eco-balances in industrial practice.

Library and Training / Further Education

The GDA library is the No. 1 address for everyone looking for detailed and specialist information on the metal aluminium. With its extensive inventory and an archive that goes back to the 1930s, it provides a comprehensive source of material for conducting searches. The library is accessible to the public and although its main emphasis is on aluminium, information on magnesium and titanium are also documented and can be accessed.

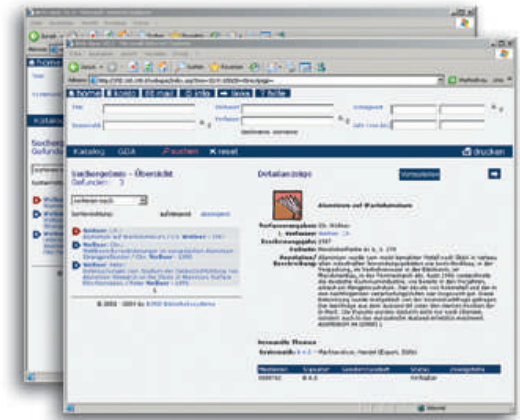
Inventory of GDA library: comprehensive and up-to-date

The reference library holds 3,500 specialist books, 8,000 articles, numerous research reports and reports on congresses and conferences and 4,000 bound volumes of periodicals. It thus offers a unique collection of literature on the subject of aluminium. The collection includes literature on material properties, extraction, processing and machining, and the various fields of application. The library carries some 90 current specialist publications relating to aluminium,

surface treatment and transport. Anyone who is interested, such as employees from the aluminium industry, postgraduates, students and schoolchildren, can carry out literature searches themselves on subjects such as mechanical engineering, transportation, building and construction and environmental technology; alternatively, they can arrange for searches to be made.

GDA library goes online in 2006

Until 2003, the library operated an analogue system using index cards. The library has been online since the middle of 2006. This was the final step in a long process that was complex both technically and administratively. Following digitalisation of the inventory in 2004 and installation of Bibliotheca, a modern library software, in 2005, which enabled GDA employees to access bibliographical references, a test phase was conducted prior to connecting the system to the internet. The goal was successfully achieved in June 2006: the GDA library went online. Anyone who is interested can now search the library's inventory from anywhere in the world and order literature on the subject of aluminium online. The event was publicised in the journal ALUMINIUM and via distribution of



a flyer conceptually designed by GDA. The GDA library now meets the standards of a modern reference library.

Co-operation with ALUMINIUM

In 2005 a successful co-operation was started between the GDA library and the renowned specialist publication ALUMINIUM. At the beginning of the year, both parties had already expressed their willingness to make abstracts – summaries of the main article – of articles that they have found or prepared themselves available to the other party. ALUMINIUM's editor-in-chief Dr Peter John



makes the abstracts that appear in the journal available for inclusion in the library's database soon after they are published. For its part, GDA prepares abstracts of topical articles that have appeared in other publications and makes these available to ALUMINIUM, where they are published in the Documentation / Literature section. With the support of GDA, ALUMINIUM is thus continuing a tradition that had lain dormant for several years.

Teachers learn to teach aluminium

GDA's training courses for teachers are of great interest to member companies and schools. In 2005, 22 teachers from nine different schools took part in an event at Hydro Aluminium in Neuss that covered both the theoretical and practical possibilities of teaching the subject of aluminium in the classroom. In 2006, Trimet Aluminium AG conducted the training course in Essen, where 13 teachers from 11 schools took

part. Further training courses can be booked via GDA. GDA coordinates and organises the activities of the Education & Social Issues Working Group, which was formed in 2003. The working group is a platform for company representatives from the areas of personnel, training and further education, and PR, to exchange ideas and experiences, for example



about co-operation with schools, Girls' Day events aimed at getting girls interested in engineering occupations and other internal and external social involvement.

The practical exercises of the training courses for teachers are always very popular

Compact courses: aluminium in the classroom

The folders for teachers and cases containing teaching materials supplied by GDA are being increasingly used in secondary and vocational schools. Some 1100 schools throughout Germany and in the German-speaking neighbouring countries already make use of the teaching materials associated with the light metal provided by GDA.



The material is complemented by a CD ROM, 'Aluminium kompakt', which contains information about aluminium, lists of possibilities for

carrying out practical training and plant visits, videos and details of the literature available from GDA.

Metalworking courses for schoolchildren and apprentices that enable the participants to practice working with the metal are another item GDA offers schools. The metal-working courses 'Penguin Napkin-holder', 'Cube' and 'TV Tower' include all the necessary materials so that the participants can begin milling, turning or sheet metalworking immediately. A new training course, 'Tabletop Food Warmer', has been added to the items on offer for off-the-job training.

Current knowledge informatively presented

GDA's comprehensive range of publications provides answers to practically every question relating to aluminium. The items on offer, including technical publications, are kept up to date thanks to continual revisions, additions and new editions. In 2005 and the first half of 2006 various brochures and Technical Informations were published for the first time or revised:



- The Aluminium Industry – An Efficient Industrial Sector (only in German)
- The German Aluminium Industry – A Significant Economic Factor Along the Whole Value-added Chain (only in German)
- Aluminium Packaging – More than just Product Protection (in German and English)
- Technical Information A5: Cleaning of Aluminium in the Building Industry (in German and English)
- Technical Information W1: The Metal Aluminium (in German and English)
- Technical Information W18: Aluminium in the Packaging Industry – Manufacture, Use, Recycling (in German and English)
- Aluminium – Building Material for the Modern Age (in German and English)

Outlook for 2006/2007

Expansion of services offered and information available

Attention to the needs of the customer, flexibility and service competence are also the benchmarks and guidelines for GDA's activities in 2006. The aim of GDA and its employees is to strengthen the image of the aluminium in the eyes of different groups of society and their

acceptance of the metal. A presence at the most important trade fairs, a competent advisory service and continuity in GDA's press work and PR activities form the basis of GDA's service philosophy.

Encouraging enthusiasm for technology

GDA is planning to further expand its training and certificate-issuing courses on aluminium and thus encourage enthusiasm for technology. Secondary and vocational schools and universities are the main target groups for these activities.

Another teacher training course will thus take place on 5 October 2006 at Hermann Gutmann Werke AG and Gutmann Aluminium Draht GmbH in Weißenburg.



Basic technical information about the metal

GDA's Technical Informations provide clear and reliable information about aluminium. They are continually being revised to ensure they are always up to date. In 2006/2007 GDA is planning to revise its Technical Informations on the

subjects of surface technology, casting, foam and joining technology; they will also be published in English.



New publications in 2006

Special and technical seminars for the industry

In addition to the now traditional seminars on the technology of extruded profiles and surface technology organised by GDA, there will be

another new seminar in March in German under the heading 'Joining of Aluminium Profiles and Sheet'.

On-going media work

GDA positions the metal, the industry and the trade association in the important publications of the financial, specialist and popular press by means of regular press releases complemented by specialist articles and background briefings.

GDA will continue to strengthen personal contacts with journalists from the trade and financial press – the important multipliers for GDA's communications activities.

Trade fairs and events

In 2006/2007, GDA will also be presenting the information and other services it has to offer at trade fairs, exhibitions and other events, where it will also conduct a dialogue with fabricators and end-users of the light metal.

The most important trade fair in 2006 is ALUMINIUM 2006 in Essen, which is being held for the sixth time and which was co-initiated by GDA. Here the production and supply industries are the focus of attention. The GDA stand will be available for exhibitors, visitors and media representatives as a communication and

dialogue centre. In 2007, plans have been finalised for GDA to participate at didacta from 27 February to 3 March.

GDA is using the exhibition 'Return on Ideas – Better by Design', which will run from 14 October to 12 November 2006 as part of the ENTRY2006 exhibition at Zeche Zollverein in Essen, to present the light metal from a design point of view. Exhibits and display boards will provide designers and other visitors to the exhibition with information about the properties and possible uses of the lightweight metal.



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Aluminium for Future Generations



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