

## RIGID AIRSHIP DESIGN

### Rise and fall of a Dutch airship manufacturer

Arno Landewers

*July 5, 1996, Ian Alexander announced during a press conference that he had the intention to start up production of airships in the Netherlands. Scarcely 2 years later Rigid Airship Design (RAD) was established. At a location close to Lelystad, Netherlands, the design of a 180 m long airship was started. However, September 18, 2001, RAD was declared bankrupt.*

*The story of an ambitious Scotchman, a dubious investor and how airships even became a political issue in the Netherlands.*

#### ***Ian Alexander***

The press conference was held during the International Airship Convention and Exhibition, from July 5 to 7 in Bedford, England. Ian Alexander was not a stranger in the (small) airship world. Born in 1945 and raised in Lennoxton (near Glasgow, Scotland), Ian Alexander is a son of a railway engineer. Since childhood he was interested in airships.<sup>1</sup>

Aged 16, Ian Alexander, started to publish a news paper, Aerostat Magazine, dedicated to airships. In 1962, an issue of Aerostat Magazine was read by Lord Ventry<sup>2</sup>, who invited Ian Alexander to join him on a journey to Lübeck (Germany), where two ex US Navy Goodyear blimps from 1942 were present. Between 1962 and 1964, Ian Alexander was crew member on one of these airships, the Schwab-blimp, which operated a few weeks over Holland during 1962 and 1963.

The next 20 years Ian Alexander was not professionally involved in the airship industry. His academic career started with an English literature study in Cambridge. After being engaged into feasibility studies for airships, Ian Alexander started working as marketing manager for Wren Skyships at Man in 1985.

In 1988 he was invited by Wolfgang von Zeppelin (an acquaintance from the Schwab period) to join him initiating the reopening of the Zeppelin company. After return to Man, Ian Alexander started in 1990 his own company: Imperial Airships, providing aerial advertisement and other services per airship. During the summer of 1992, Imperial Airships operated Thunder & Colt GA-42

blimp G-ZEPI (owned by Per Lindstrand) over Paris and Spain.

#### ***Company start up***

During 1995, Alexander came in touch with Dutch investor Robert Jan Doorn, according to Alexander via a contact in the Dutch Air Force. Together with Doorn, Alexander started to give his plans to build a classic rigid airship a financial basis. From early 1996, Ian Alexander had his office in the Swaenenburgh Castle (owned by Doorn) in 's-Graveland, Netherlands. The search for investors was successfully: 26 May 1998 Rigid Airship Design (RAD) was officially established. As participants were mentioned RDM Aerospace NV (Mr. Joep van den Nieuwenhuyzen) (42.3%), Stork NV (Fokker Aviation)(10%), Greenfield Capital Partners (4.4%), Maup Caransa NV (7%) and Airshot International NV (Mr. Robert Jan Doorn) (36.3%).

Initially Rabobank Groenfonds (Green Fund) also wanted to participate, but they finally withdraw. Mr. Evert Constandse was appointed managing director of Rigid Airship Design.

Greenfield Capital played a more important role within RAD than on basis of the financial participation can be concluded. The company is a descendant of Noro Group International, the largest private investment trust of the Netherlands, with shareholders (Dutch) industrial tycoons as Stork and John Fentener van Vlissingen. Also, Greenfield was already involved in the project before the establishment of RAD, to help finding funds. Greenfield co-director Leo Deuzeman acted as spokesman for RAD on regular basis.

Although initially it was aimed to establish offices and factory at Rotterdam Airport, the design work started in 1998 in a temporary office in Lelystad. Finally, about 30 persons worked on the design.

April 1999, RAD announced that a definitive choice was made for Lelystad. At a 200 ha site North of Lelystad, close to the "Flevo" power-plant, a hangar, production facilities and offices were planned. It was reported that over 1300 people would find employment there. Anticipating on the

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<sup>1</sup> An often told anecdote is that 14 year old Ian wrote a letter to the Zeppelin company in Friedrichshafen (at that time producer of all kinds of steel and aluminum items, in 1938 the last airship (Graf Zeppelin II) was built) asking what a new airship should cost. Zeppelin, assuming a serious customer, invited Ian. The boy was received by the full board of directors, who insisted that Ian get through a full week-program, specially put up for the new customer.

<sup>2</sup> Lord Arthur Ventry (1898-1987), British airship pioneer, builder of Bournemouth airship during 1950-ies.

start of the build, RAD moved to a nearby office at the Karperweg. Lelystad was chosen because of its location close to the IJsselmeer lake, giving the outstanding possibility to make test flights over the water. The same month, the Lelystad town-council agreed with the RAD plans. Although RAD announced that the construction of a 273 m long hangar was to start during September, the request for a building-license kept the town-council waiting (eventually it was never received).

### **Technics**

The basic design of the airship, developed by Ian Alexander, was already fixed long before RAD was established. The airship, designated as RA-180 (later RA-180 Holland Navigator), was of the rigid type, with a length of 180 m and a maximum diameter of 30 m. With a volume of 78000 m<sup>3</sup> (filled with helium) and an own weight of 43000 kg, 35000 kg payload could be transported, or 240 passengers. The frame was to be constructed from aluminium-alloy tubes, and consisted 20 compartments. The tail had 4 planes, in “+” configuration (the motivation not to choose for 3 planes in inverted “Y” configuration, as on the Zeppelin NX, was an expected delay in the certification because of “too much innovation”).

De RA-180 was to be powered using two engines in fixed position and four tiltable engines, who all would drive propellers at a low number of revolutions. A final decision for petrol or diesel engines was never made (although a choice for diesel engines would have caused inevitable delay in the certification process). As cruising speed 150 km/hr was given.

Next to the modern navigation and meteorological equipment in the cockpit, the passenger sections would be furnished according to the cruise-ship like facilities from the 1930-ies airships: panorama windows, restaurants, etc.

During September 1998, RAD requested the Dutch Civil Aviation Authority RLD to reserve the registration mark PH-RAD for the RA-180 prototype. On 26 April 1999 the requests for design acknowledgement and type approval were submitted.

### **A dubious investor and first customers**

The person behind RAD investor Airshot International was Robert Jan Doorn. The stories and anecdotes about this man have in the mean time reached a level of mythical proportions<sup>3</sup>. Fact is that his name was often mention in relation with fraud

and whitewash practices. Mentionable is his involvement in a bizarre coup d'état in 1980 at the New Hebrides (now Vanuatu) in the Pacific. It was tried to establish a libertarian paradise on the islands, characterized by the absence of a government. A small combined French-British army-unit ended the party after a few weeks. The coup was carried out by the Phoenix Foundation (originating in the US). Doorn was involved when he established the Libertarian Movement in the Netherlands. Owing to this, he also came in contact with RAD co-participant and libertarian Maup Caransa. In 1989 Doorn was arrested and extradited to Swiss in connection with a shareholders scandal. But after paying a fine he was released.

Airshot International was officially settled at Curaçao (Netherlands Antilles), where an untransparant structure of companies linked to RAD was founded. As an illustration: March 1999 RAD announced that two R-180s were sold to undisclosed American customers. The customers were rumoured to be an amusement park and a shipping-company. For US sales support, in November 1998 Rigid Airships USA was established (also mentioned as buyer of the two airships). For that purpose, Rigid Airship Holdings NV, Curaçao and Imperial Airships NV, Curaçao (in which Alexander participated) sold the rights to exploit and build RAD airships to energy company Synfuel Technology Inc, Salt Lake City (US), which subsequently changed name to Rigid Airships USA.

### **The airship in Dutch media an as political issue**

Alexander's plans and the establishment of RAD generated lots of media exposure. Ian Alexander turned out to be very mediagenic, inspired and always willing to tell his story. But, airships were already a highly covered item in media before RAD entered the field.

In 1994 the first liberal/social-democratic cabinet under leadership of Prime-Minister Wim Kok commenced. One of the items to decide on was the expansion of the Dutch national airport Amsterdam/Schiphol. Although in February 1995 it was decided to build a fifth runway for the airport, this did not end the discussions. As well as preceding and after the cabinet decision, employers' organizations, environmental organizations, neighbours of the airport, trade-unions and others gave contributions and advises. Practically all parties pointed to the possibilities of airships, where often was referred to British Skyships from the 1980-ies and the plans to built the Zeppelin NT.

Also in 1994, Arjan van Timmeren was rewarded a price for the best thesis of that year on the Delft

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<sup>3</sup> There is a book about him available (in Dutch): *De man die onzichtbaar wilde blijven: de jacht op meester-witwasser Robert Jan Doorn*, by Arnoud Groot en Jan Libbenga, 2007, published by Nieuw-Amsterdam, ISBN 9046802299

University of Technology. At the Faculty of Architecture he graduated on several designs for mooring masts for airships, integrated with check-in counters, restaurants and kiosks. The mast contained a retractable magnetic mooring mechanism, which would allow an airship to moor without outside help from the usual ground crew.

His design attracted much (even international) attention, especially after publication of an article in the glossy “Delft Integraal” (and its English version “Delft Outlook”), the science magazine of Delft University. The combination with the media coverage for the political discussions around Amsterdam/Schiphol airport (and the role of the airship in the discussion) generated a snowball effect, and a real hype started, lasting a few years<sup>4</sup>. So Ian Alexander could hop on a rolling media-train when he came to Holland.

During 1996, the Dutch Minister of Economic Affairs, Mrs. Jorritsma, instructed her officials to make a feasibility study on the use of airships in the Netherlands. This resulted in the report “Revival Of The Airship”. The study was made in cooperation with Delft University of Technology (Arjan van Timmeren, who was now employee at DUT) and the NEA Transport Research and Training Institute. Although it was concluded that the development of a safe, efficient and environmental-friendly rigid airship is technically feasible, it was also stated that commercial possibilities were limited to holiday charters and pleasant flights. For cargo transport, trains, motor trucks and ships appear to be cheaper. However, for transport of lightweight, hi-volume cargo (like flowers, the Aalsmeer flowers auction was mentioned as possible RAD customer) or transport of large structures (like industrial installations) the airship appeared to be cost effective.

During March 2000, the Platform Luchtschepen (Platform Airships) was started, aiming “to promote the development of airships as innovative, economic feasible and environmental friendly transport solution”. Chairman became professor dr. R.J. In ’t Veld. On the committee were for instance old Minister for Environmental Issues Mrs. de Boer, former ESA-astronaut Wubbo Ockels and representatives of Delft University of Technology, an engineering company, environmental organizations and industry. After initial skepticism, Delft University of Technology, particularly the Aerospace Faculty, advised RAD on technical

issues. They hoped for cooperation particularly on the field of composite materials for the RA-180 skin.

Under pressure of the Platform Luchtschepen, some Members of Parliament and ministerial officials, early 2000 the airship became a concrete political discussion subject. It appeared that all large parliamentary parties wanted the Minister of Transport, Public Works and Water Management, Mrs. Netelenbos, to exert for public-private cooperation between industry and government on the use of airships. Furthermore it was stated that the government was willing to bear part of the costs for certificating of the RA-180. The Minister underlined again the conclusions from the “Revival Of The Airship” report and also stated that it was questionable whether RAD was to be considered for subsidy (although several Members of Parliament insisted on that). The Minister indicated that the total certification process could last about 5 years.

For certification issues around airships, the Dutch Civil Aviation Authority RLD started to cooperate with the German Luftfahrt Bundes Amt (LBA). The LBA worked on certification of the Cargolifter CL160 and Zeppelin NT airships. March 2000 the cooperation resulted in the joint “Transport Airship Requirements” with full descriptions of the demands for airworthiness required for type certification.

#### ***Financial problems and bankruptcy***

On July 18, 2000, at the RAD office in Lelystad an annex of the Schiphol based Aviodome aviation museum was opened: museum Zep/allon, dedicated to balloons and airships. The opening of the museum was delayed some times because it was planned to coincide the hammering of the first pole for the foundation of the RAD hangar. Among other things, in the museum the gondola of the “Dutch Viking” balloon (PH-EIS) was on display, which was used by the team of Henk Brink to cross the Atlantic Ocean.

The delay of the construction of the hangar was a symptom of RAD’s increasing lack of finance. Although during September 1999 over 10 million guilders were put into the project, it was estimated that over 120 million was needed. New investors could not be found; the involvement of Doorn and his untransparent structure of Curaçao based companies linked to RAD played an important role in this. The NRC Handelsblad newspaper wrote already about Doorn’s connection with RAD in 1996. The Rabobank Green Fund intended to participate in RAD for 20%, but withdrawn from the project as soon it appeared that Mr. Doorn was involved. During an interview in 1997, Ian

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<sup>4</sup> The popularity of airships is illustrated by the fact that during September 1999 a temporary exhibition about airships was opened in the Kunsthal art-museum in Rotterdam. Next, the newspaper NRC Handelsblad dedicated a 5 page section on history and future of airships.

Alexander stated that Doorn would retreat from RAD when it would appear that investors hesitate due to the reputation of Doorn, but Doorn never withdrawn.

May 22, 2001, the Platform Luchtschepen organized a symposium about airships in The Hague. During his openings speech, chairman R.J. In 't Veld expressed his doubts about RAD because of its lack of finances and unclear management. His doubts were correct: September 18, 2001 the Amsterdam court of justice declared RAD bankrupt. This was on request of 5 RAD employees, who did not receive their salary for some time.

Trustee Mr. Waringa found out that at that time Airshot International was the only shareholder of RAD. It appeared that RDM Aerospace, investor of 10 million guilders, and Stork (contributed 1 million guilders), abandoned the project in an early stage; in total only 17 million guilders were invested.

The dubious and untransparent financing of RAD was also the reason that the Dutch government hesitated to support RAD financially. The idea of public-private financing came into a vicious circle. There was a proper support for the plan, from the side of the government and from diverse industrial companies, tour operators and environmental protection organizations. But the private parties only wanted to invest after the government did.

RAD never requested for the promised allowance for certification costs of the RA-180. Dutch Civil Aviation Authority RLD made big efforts to draw up the demands for certification. Based on the RLD/LBA "Transport Airship Requirements" both the Cargolifter CL160 and Zeppelin NT received type certification in 2001.

#### ***Postscript***

Although it was tried to restart RAD after the bankruptcy, this failed. The airship lobby continued after the end of RAD; still airships are regularly mentioned as alternative mean of air transport.

During 2004, an organization named Airship Holland made a feasibility study about the construction of a RA-180 like airship (the "Global Relief Navigator") for relief transport after large disasters. Airship Holland was established by Hoogeweegen Taskforce BV and EEC Events.

Mr. W. Tijssse, head of EEC Events, was at the time involved in RAD (Mr. Doorn and Tijssse cooperated earlier by trying to find investors for the search of a Nazi-treasure in Czech). EEC did promotional and lobby activities for RAD, and also invented the name "Holland Navigator" for the RA-180.

For Ian Alexander, his period in the Netherlands ended not only with business disaster but also with a personal drama. During an accident with a staircase he suffered brain damage, which was intensified by a subsequent infection. As a result, Ian Alexander suffers now from dementia. He lives at Man, in his professional care a daughter of Malcolm Wren (owner of Wren Skyships) is involved.

#### ***Sources***

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