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PRICE Symposium Berlin

9th & 10th October 2003

***“The Improvement of Parametric Cost Estimation
in the German Economy and in particular for
AIRBUS DEUTSCHLAND GmbH“***



AIRBUS

Good Morning Ladies and Gentlemen,

It is a great honour for me to be the

Keynote Speaker




for today's and tomorrow's symposium in the

unbelievable prospective city of

BERLIN.

Introduction

I would like to subdivide my presentation as follows:

-  The growing importance of the cost estimating in the European Aircraft Industry since more than 30 years
-  The powerful future of Airbus
-  Parametrics seen as an absolute necessary tool for cost estimating and not “out of place” (as a “fifth wheel”)

1. Cost Estimating with and without parametrics in the German Aircraft Industry during the 6ties and 7ties
2. AIRBUS became the biggest player for costing/offer in the 8ties for Airbus Partner-Companies
3. AIRBUS as one united company: Do we need these costing-guys in future?
4. Airbus Integrated Company:
 - 4.1 *Airbus Integration*
 - 4.2 *A340-500/-600/ -Movie*
 - 4.3 *A380/A400M*
5. The development and importance of parametrics in the German economy

1. Cost Estimating with and without parametrics in the German Aircraft Industry during the 6ties and 7ties

- After the 2nd World War aircraft manufacturing in Germany was stopped by the Allies for a long time
- By that we lost compared to other nations a lot of basic knowledge in cost estimation of complete aircraft
- Re-starting in the 6ties all running programmes like Transall, Tornado, Fokker F28, VFW 614 and Airbus were designed and manufactured in co-operation with other European manufacturers
- Real cost information out of the accounting was limited to our own work- and cost share

1. Cost Estimating with and without parametrics in the German Aircraft Industry during the 6ties and 7ties

- We started at the beginning of the 7ties to collect all available costing and respective technical data
- Due to different worksharings in the European programmes
 - ➔ Fokker F28, Section production Final Assy in Netherlands
 - ➔ VFW 614, Final Assy in Germany
 - ➔ Transall, Final Assy in Germany/France
 - ➔ Airbus A300, B2/B4, Final Assy in France

it was nearly impossible to try to harmonize the costing information and to get out of this puzzle a complete “Costing Aircraft”

1. Cost Estimating with and without parametrics in the German Aircraft Industry during the 6ties and 7ties

- But we were involved in a lot of cost estimating teams for new civil and military programmes for which we had to estimate for 100% NRC and RC like

→ Europlane
→ Group of Six
→ JET/JOT
→ Mercure 200
→ Fokker 100

and

→ Transall 2nd Batch and the Successor today's A400 M
Tornado, Vertical-Take-Off

Followed by
Airbus A310 and A320.....

1. Cost Estimating with and without parametrics in the German Aircraft Industry during the 6ties and 7ties

- The way-out was to follow not only the limited in house cost basis but to try to use in parallel

- cost estimating tools –

like

➔ RAND-Corporation

➔ Planning Research Corporation PRC

➔ J. Watson Noah Associates

➔ Northrop Grumman

and ➔ PRICE

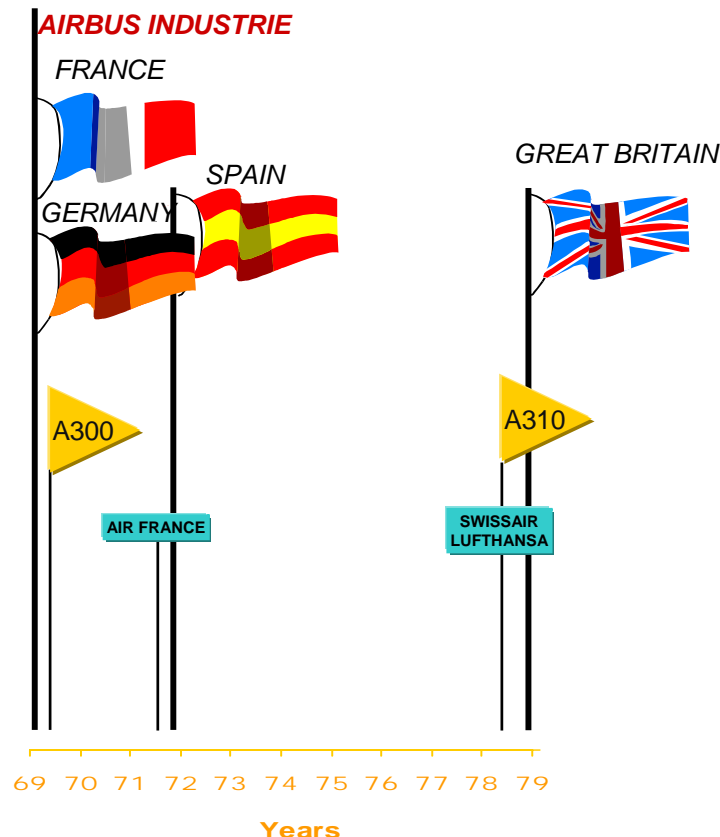
- We learned from these information how to establish
“Cost Relationships”
with our limited in house cost basis and combine it with these available programmes

1. Cost Estimating with and without parametrics in the German Aircraft Industry during the 6ties and 7ties

- In the Mid of the 7ties the German minister of defence asked that we should establish a cost estimation tool for challenging the offers provided by the different aircraft industries
- The tool should have based on the accounted cost from military programmes like Transall, Alpha-Jet, Tornado
- After long lasting discussions the ministry of defence accepted our offer to use an existing “Cost Estimation Programme” and at the end we selected “PRICE”
- Since than we apply PRICE as a tool in our estimating department

1. Cost Estimating with and without parametrics in the German Aircraft Industry during the 6ties and 7ties

➔ Airbus 1969 - 1979



Production Rate less than 1 per month

Market Share less than 10%

1. Cost Estimating with and without parametrics in the German Aircraft Industry during the 6ties and 7ties
2. AIRBUS became the biggest player for costing/offer in the 8ties and 9ties for the Airbus Partner-Companies
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2. AIRBUS became the biggest player for costing/offer in the 8ties and 9ties for the Airbus Partner-Companies

- After the last merger of the German Aircraft industry VFW/MBB/Deutsche Airbus we in the North have been concentrated more/less on the Airbus program
- With the program Launch of the Airbus A310 and the Brits joining Airbus as a full partner in 1979, Airbus became the biggest player for our German costing and offer-team in the 8ties
- The cost-negotiations between Airbus and the partners were done in the so called “Working group Costing”. Others also called it more appropriate “The Liar’s Club”.

➔ Business as usual.....: The Liar's Club

How the W.G.C. operates



**THIS PICTURE HAS BEEN AGREED AND ACCEPTED IN ITS ENTIRETY,
INCLUDING DETAILS AND INTERPRETATIONS BY THE MEMBERS OF
THEWORKING GROUP COSTING.
IN CASE OF MISUNDERSTANDING, IT IS SUPPOSED
BY AI's MOTTO: "NOTHING IS CLEAR,
BUT EVERYTHING IS INCLUDED"**

SUCCESS FOR FUTURE

2. AIRBUS became the biggest player for costing/offer in the 8ties and 9ties for the Airbus Partner-Companies

- The basis for the requested very detailed cost estimate for
 - ➔ Non Recurring Costs
 - ➔ Recurring Costs
 - ➔ Equipment
 - ➔ Other Program Costs

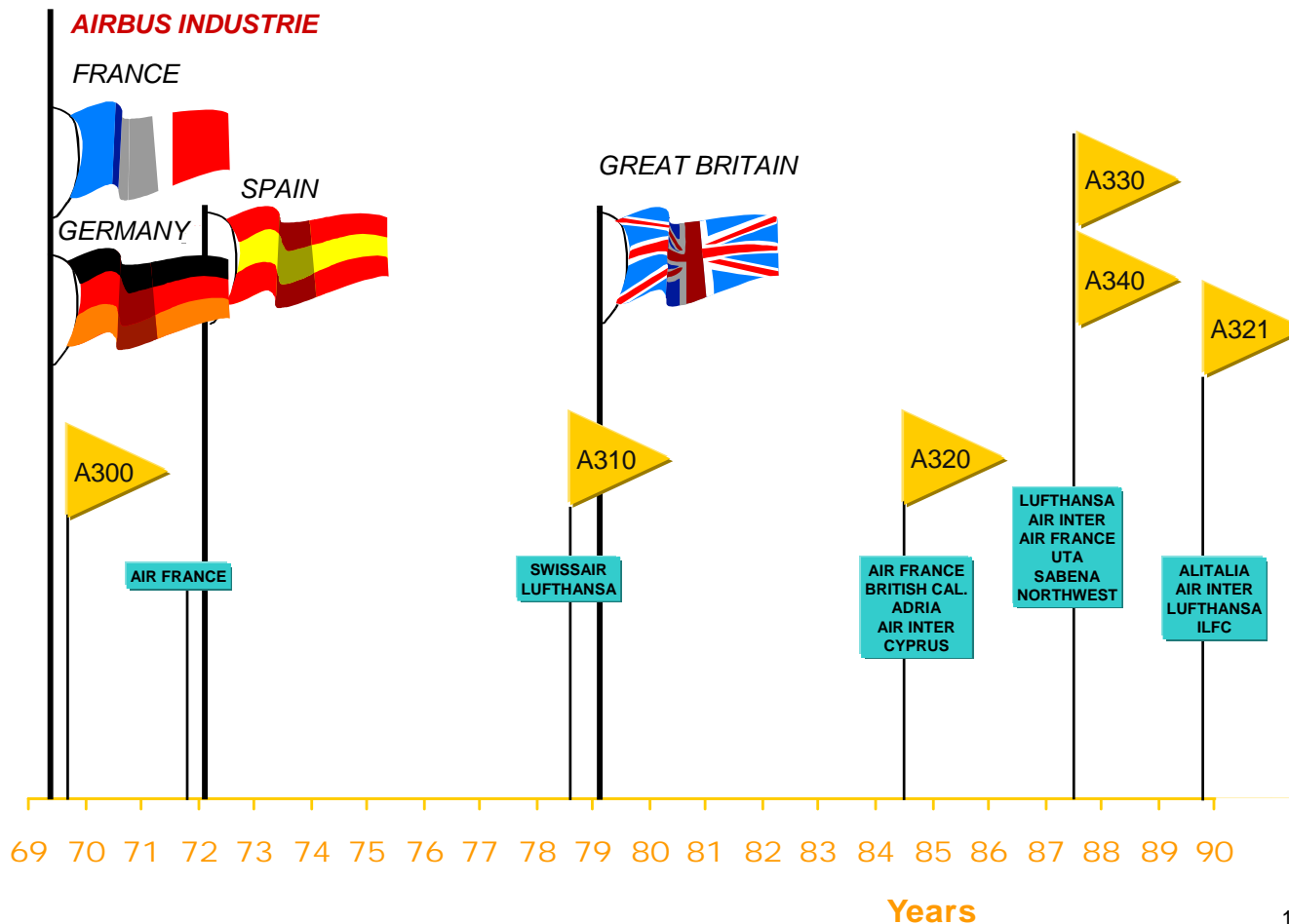
was between AIRBUS and the 4 partners harmonized agreed common “Basic Rules for Costing”

- ➔ Technical/Industrial Assumption
- ➔ Work sharing Report
- ➔ Non Recurring Cost Report
- ➔ Recurring Cost Report

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➔ Airbus 1980-1990



Production Rate up to 10 AC per month

Market Share 10%-20%

2. AIRBUS became the biggest player for costing/offer in the 8ties and 9ties for the Airbus Partner-Companies

- With a very experienced team and professional negotiators AIRBUS and the partners are in the position to do all requested costing for the business cases and negotiation for cost sharing between AIRBUS and partners for the following programmes:
 - ➔ A310-200/300
 - ➔ A300-600
 - ➔ A320/A321/A319/A318
 - ➔ A340-300/A330-300/-200
 - ➔ A340-600/-500
 - ➔ A380-800/-800F/-800R/-900

in only 2 decades with 20-30 B\$ of NRC plus Recurring-/Equipment-costs etc.

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