



Aerospace Research Centre and its Philosophy

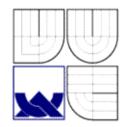




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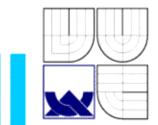




2000-2004 2005-2009

The goal of "Research centres" is to centralize research capacity at research activities, witch will be guarantee of the effective transfer of knowledge from research phase to using subjects.

- advancement of research and development
- realization at realistic items
- large connection with producers
- integration to Europe research



INSTITUTE OF AEROSPACE ENGINEERING Ministry of Education Brno University of Aeronautical Research Technology, Brno Czech Technical and Test Institute, Prague Contractor University, Prague subcontractor subcontractor IAE prof. A. Pistek department **CLKV** department **CLKV** division **CLKV** (13425)(12243)(3400)Assoc. prof. L. Janko, Ph.D. prof. Ing. A. Pístek, Ph.D. Ing. Martin Holl, Ph.D. **Association of the Aviation Manufacturers of the Czech Republic** member of AeroSpace and Defence Industries of Europe **Aircraft industry** Projects of FP EU 6,7 **Brno University of Technology**



Technical background

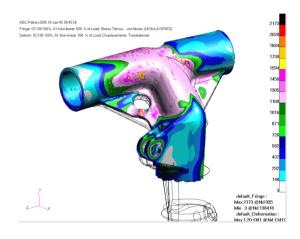
-workplace - allocated by FSI VUT

-equipment – purchase at ARC project 2000-2004

testing equip., HW, SW











Brno University of Technology



Personal background

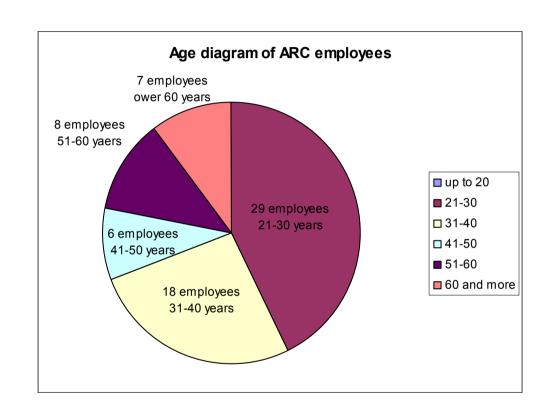
68 employees

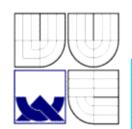
38,1 age average

52,85 global work load

0,78 work load average

Financial support of Ministry: 90% of budget

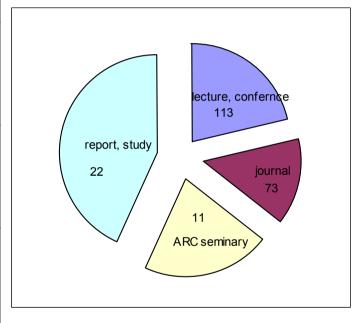




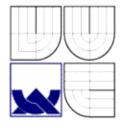


Publication activities – 5 years,

	2000	' 01	'02	'03	'04	Total	
Lecture, conference	12	6	14	18	12	62	
Journal	3	2	8	7	5	25	
Lecture at ARC seminary		8	13	12	8	41	
report, studies	13	28	13	15	12	81	209
Lecture, conference		6	8	3	5	22	
Journal		5	13	11	7	36	
Lecture at ARC seminary		14	15	14	12	55	
report, studies	16	30	30	29	23	128	241
Lecture, conference		6	6	8	9	29	
Journal		4	2	2	4	12	
Lecture at ARC seminary		2	5	2	7	16	
report, studies	3	3	4	2	6	18	75
							525
	Journal Lecture at ARC seminary report, studies Lecture, conference Journal Lecture at ARC seminary report, studies Lecture, conference Journal Lecture at ARC seminary	Lecture, conference 12 Journal 3 Lecture at ARC seminary report, studies 13 Lecture, conference Journal Lecture at ARC seminary report, studies 16 Lecture, conference Journal Lecture, conference Journal Lecture, conference Journal Lecture at ARC seminary	Lecture, conference 12 6 Journal 3 2 Lecture at ARC seminary 8 report, studies 13 28 Lecture, conference 6 Journal 5 Lecture at ARC seminary 14 report, studies 16 30 Lecture, conference 6 Journal 4 Lecture at ARC seminary 2	Lecture, conference 12 6 14 Journal 3 2 8 Lecture at ARC seminary 8 13 report, studies 13 28 13 Lecture, conference 6 8 Journal 5 13 Lecture at ARC seminary 14 15 report, studies 16 30 30 Lecture, conference 6 6 Journal 4 2 Lecture at ARC seminary 2 5	Lecture, conference 12 6 14 18 Journal 3 2 8 7 Lecture at ARC seminary 8 13 12 report, studies 13 28 13 15 Lecture, conference 6 8 3 Journal 5 13 11 Lecture at ARC seminary 14 15 14 report, studies 16 30 30 29 Lecture, conference 6 6 8 Journal 4 2 2 Lecture at ARC seminary 2 5 2	Lecture, conference 12 6 14 18 12 Journal 3 2 8 7 5 Lecture at ARC seminary 8 13 12 8 report, studies 13 28 13 15 12 Lecture, conference 6 8 3 5 Journal 5 13 11 7 Lecture at ARC seminary 14 15 14 12 report, studies 16 30 30 29 23 Lecture, conference 6 6 8 9 Journal 4 2 2 4 Lecture at ARC seminary 2 5 2 7	Lecture, conference 12 6 14 18 12 62 Journal 3 2 8 7 5 25 Lecture at ARC seminary 8 13 12 8 41 report, studies 13 28 13 15 12 81 Lecture, conference 6 8 3 5 22 Journal 5 13 11 7 36 Lecture at ARC seminary 14 15 14 12 55 report, studies 16 30 30 29 23 128 Lecture, conference 6 6 8 9 29 Journal 4 2 2 4 12 Lecture at ARC seminary 2 5 2 7 16



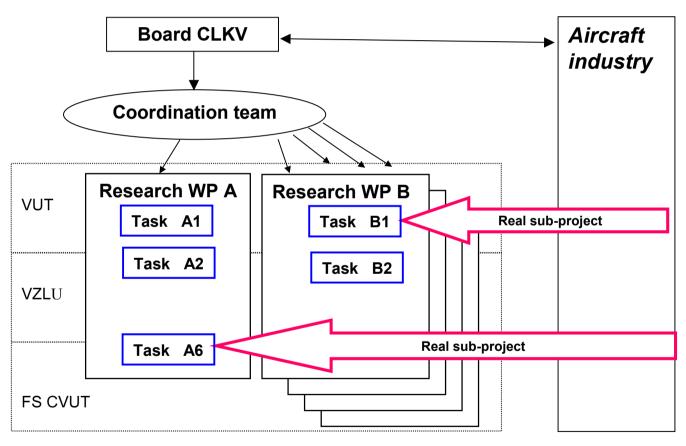
From 2000 to 2004 the 9 Ph.D. students graduated as ARC employees.

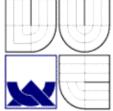






ARC management system

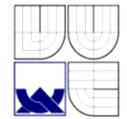




	io	1		Personnel				
	BRNE			unit coordinator /	Person-years			
	WP	Task		task head personnel/years	CTU	ATRI	BUT	
			Aerodynamics and Flight Mechanics	Holl	9.5	35	37	
	A	A1	Flow fields research in aviation applications	Anderle	9.5	0	0	
		A2	Progressive methods in aerodynamics	Popela	0	8.5	10	
		A3	Flight loads in co-relation with computations	Jebáček	0	0	14	
		A4	Aerodynamic research of the potential aircraft with fixed wing	Holl	0	16.5	4	
		A5	Acoustic load in aviation traffic	Šloufová	0	10	4	
		A6	Prediction of inner environment in aeroplane cabin	Jícha	0	0	5	
			Modern technologies for aviation applications	Bělský	0	8	11.25	
	В	B1	Fibre-metallic laminates and low-cost composite technologies	Klement	0	0	7.5	
		B2	Progressive technologies of structural jointing	Bělský	0	5	0	
		В3	Impact of environment on the life-cycle of materials and surface finish	Valeš	0	3	3.75	
Γ	C		Propulsion systems	Hanus	22	25	0	
		C1	Numerical modelling of the flow in rotating devices	Hečl	0	5	0	
		C2	Increase of effectiveness and safety of the fan drive	Hanus	22	0	0	
		C3	Advanced aerodynamic methods in propeller design	Dostál	0	10	0	
		C4	Advanced diagnostic methods	Lamka	0	10	0	



i	id]	Personnel			
			unit coordinator /	Person-years			
WP	Task	Task name	task head personnel/years	CTU	ATRI	BUT	
	Structure design, strength and durability		Juračka	34	12	34.25	
	D1	Research in means of improving passive safety of aircrew and passengers	Šplíchal	0	0	7.5	
	D2	Reliability of aeroplane equipment and systems	Merkl	0	7	2	
D	D3	Aeroelasticity	Slavík	12	0	5.5	
	D4	Strength of composite structures	Theiner	22	5	5	
	D5	Structural optimisation	Píštěk	0	0	6.5	
	D6 Fatigue and durability of composite structures		Juračka	0	0	7.75	
		Space research	Fedossov	0	17.5	1	
E	E1	Research for the design and tests of space devices	Fedossov	0	17.5	1	
	E2	Universal on-board computer for the use in aerospace and aviation technologies	Pobořil	0	0	0	
F	F1	Economic and legislative aspects and applications of research results	Paiger	0	2	1	
Employ	Employees without specialization		7.5	5	18.5		
TOTAL				65.5	99.5	84.5	



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INSTITUTE OF AEROSPACE ENGINEERING

Role of Aircraft Industry

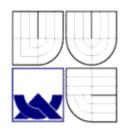
- 1. request definition at application research = real project
- 2. use of research results in practice
- 3. education of research employee at ARC (postgraduate study)
- 4. using laboratories and sw equipment to train industrial employees
- 5. data support for marketing analysis

Today projects

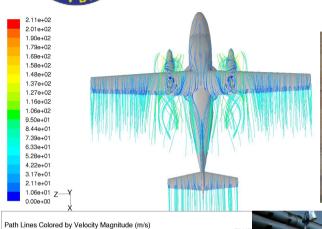
- 1. VUT 100innovation,
- 2. EV-55 new commuter aircraft,
- 3. G304 S new composites sailplane,
- 4. TST -14 new composite UL sailplane.

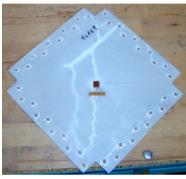






Role of Aircraft Industry

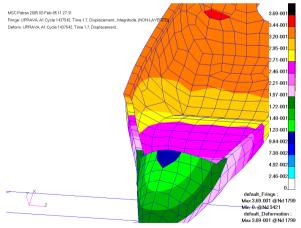












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