

## Appendix B

### NEW MATERIALS

The 1990s will witness an ever-increasing use of new materials in the production of airframe structures, as composite materials, tailor-made for particular parts of the aircraft, are developed. Up until now, the weight of an aircraft has been made of aluminium alloys (75 per cent), steel (10 per cent), titanium (10 per cent) and composite materials (5 per cent). An example of the increase of composites as a share of the total weight of the

aircraft is the Airbus family. Composites comprise 4.5 per cent in the Airbus A300, 8 per cent in the Airbus A310 and, in the latest model, the A320, 18 per cent. Composites based on polymers offer the most potential (low density, high strength and stiffness). Composites will rival the new metal technologies, which have produced advanced light alloys such as aluminium/lithium.<sup>106</sup>

#### Trends in aircraft composition and shell structure A340 type aircraft

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	Aluminium		Composites	Steel/Titanium	Other
	Traditional	Lithium			
Before introduction of aluminium/lithium alloys	50%	nil	15%	20%	15%
After introduction of aluminium/lithium alloys	30%	20%	15%	20%	15%

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Source: *Europe in 1994*, BIPE from Aérospatiale.