

The Institution of Engineers, Australia: Sydney Division
Engineering Heritage Committee
ORAL HISTORY PROGRAM

INTERVIEWEE: Arthur Ernest Bishop.

TAPE NUMBERS:

IEA SYD RR 118 - 119A

INTERVIEWER: Richard Raxworthy

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NUMBER OF TAPES: 2

RESTRICTION ON USE: None

LOG PREPARATION: Log prepared using a NEC RM 2670E tape recorder.**INTERVIEW TAPE LOG**Tape: Arthur Bishop ~~✱~~ IEA SYD RR 118 Side A

TAPE COUNTER	SUBJECT	NAMES & KEYWORDS
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0 - 20	Leader and identification	
20	Born Roseville, NSW, 1917	Roseville, NSW
30	School Roseville, North Sydney Boys' High	North Sydney Boys' High
35	Apprenticeship - Automotive Component Parts	E. G. Bishop (cousin)
60	Sydney Technical College Diploma Mech. Eng.	Sydney Technical College
65	C.C. Engineering	C.C.Engineering, Glebe
70	Standard Telephones & Cables - Radio equipment	STC,
120	National Motor Spring Annexe, Botany Beaufort Bomber landing gear redesign	National Motor Spring Co. Dept. of Aircraft Production Annexe
180	Beaufort tail wheel shimmy damper design	Beaufort Bomber
205	Appointed Chief Engineer, Lincoln tail wheel redesign -	Lincoln Bomber
250	UK trip - AV Roe interest	UK - AV Roe
255	USA - Damper demonstration on A26 Bomber	USA Wright Field A26 Bomber
260	Founded machine tool business in Sydney with two partners in 1945 - Precision machinery	LBL Products, Sydney
275	Licenced shimmy damper to Houdaille- Hershey	Houdaille-Hershey, USA
	Patented automotive use of variable ratio gearing	Variable Ratio Steering Gear
290	Worked in USA - demonstrating to Ford & GM	Ford & GM USA
330	Licenced Bendix - Detroit	Bendix -Detroit USA
335	Founded A.E. Bishop & Associates in Detroit 1957	A.E. Bishop, Detroit
370	Licenced steering gear to Jaguar through Adwest	Jaguar Adwest, UK
385	Bendix Research in Detroit	Bendix Research - Detroit
400	GM Australia agreed to accept the steering gear if he could find a manufacturer - Bendix in Sydney agreed to manufacture under licence	GM Australia Bendix Australia
420	End Side A	

	Tape: Arthur Bishop 4. IEA SYD RR 118 Side A B	
0 - 40	Leader and identification	
40	GM & Ford Australia adopted variable steering gear in their large cars first - then overseas	GM & Ford Australia
90	Licensed new variable rack and pinion steering to ZF in Germany	Variable Ratio Rack and Pinion Gear
100	Demonstrated new rack and pinion gear to USA but unsuccessfully although they bought manufacturing machinery	USA
140	Marketing to Japanese, Koreans and Russians	Japan Korea Russia
160	Ford now using variable ratio rack and pinion -	Ford USA
170	Bishop now manufacturing in USA	A.E. Bishop & Assocs. USA
180	Principle of variable ratio rack and pinion steering in the size of the teeth	Variable Ratio Rack and Pinion
185	Three projects - Steering Gear -	
	Rotary Valve Engine	Rotary Valve Engine
	Automated People Mover	Automated People Mover - APM
	New fields easier to get patents in	
220	Automated People Mover - small vehicles at relatively high speeds - all stations off line - 9 or 10 people at 55 kph on steel wheels and rails.	
250	APM - Turning radius 8 metres - above roads	
270	Rotary Valve Engines - racing field first	Rotary Valve Engine
280	Advantage over Sarich Engine	
310	Still developing precision forging machines for the steering gear	Precision Forging Machines
335	Patent Lawyer in house - Find the niche to develop and patent is the secret	Patents
360	Provide licences with machinery and plans to manufacture, but still can make economically in Australia more accurately than the Germans.	Licences
390	APM - Prototype at Chullora in 1997	APM Prototype at Chullora
395	Computer technology in design development	
410	Automotive field still developing	
420	Ford licence in valve technology at high volumes	Ford USA
430	End Tape 118 Side B	
	Tape: Arthur Bishop 4. IEA SYD RR 119 Side A	
0 - 20	Leader and identification	
20	Automatic People Mover - Small vehicles at spacing of 12 - 15,000 passengers per hour at a spacing of about 3 seconds - 9 passenger no standing - quick stop - seat belts - .8g emergency stop as in buses - steel grip wheels on steel rails - Ability to take vehicles off line at stations - flexible rails to bank them during switching - No stopping on through lines - station loops - key - an efficient off-line station. Single column T section overhead 750 mm gauge rail running alongside roads.	Automatic People Mover
135	Electric traction with a third rail - \$5 million / km without stations - \$80,000. per auto type vehicle	

	Tape: Arthur Bishop 118 . IEA SYD RR 119 Side A (Continued)	
165	Using independent cylindrical rubber sheathed wheels without solid axles, instead of the usual conical wheels.	APM (continued)
180	Rails attached to sleepers through flexible mounts, about six sleepers at one metre intervals are mounted on linkages that move without superelevation.	
200	Full size loop track at RSA NSW at Chullora	Chullora
220	Order of Australia 1984	AM
240	Half of patents for special machines	
255	Won all patent challenges but one which could not be built anyway	
270	Awards -	
285	Engineering Excellence Awards	Engineering Excellence Awards
295	Qantas Award - mechanical valve making machine - 57 events in 5 seconds	Qantas Award
310	Key people	Dr. John Baxter
		Klaus Rezke
	Marketing	Laurie Bishop
320	Planning to institute an award for patents	
330	Power steering now harder to innovate in	
360	APM - a coming thing - a new field	
370	Exclusive Licensing on new patents	
380	Innovation - patents - Australians with the best	
390	Mistake - accentuated safety - not good marketing	
410	End Tape 119A - End interview	