

INSTITUTE OF ENGINEERS SYDNEY DIVISION

INTERVIEWEE : RICHARD R ASH

TAPE 37 A

SIDE 1

11 Enjoys the title "Engineer" rather than Mr because has been concerned about the decline of the position of engineering in the community. Bring status and attention to the calling - widely used in Europe to recognise the members of the engineering profession.

27 Born Orange in NSW March 1917

29 Left Newcastle when he was an infant.

33 1919 moved to North Sydney (Mount St).

34 Bought land at Bellevue Hill and built a house.

35 Went to school at Woolahara Public School.

40 Enjoyed school - positive impression of learning to read phonetically, in 4th class in primary school they had a woodworking class - did advanced woodwork (small pieces of furniture).

51 Second in the year of qualifying.

53 Mr Baldwin master in 6th class - stern disciplinarian.

60 Ms McLoughlin in 1st class that taught him to read.

63 Most influence from mother, who would sharpen up on arithmetic

67 Father handy with his hands.

69 Aunt lent books to him - anotted version of the works of Shakespeare.

73 Didn't have any ideas about becoming an engineer. Own personal desire entered into the technical side - five years of discriptive geometry and technical drawing and woodworking. Keen on drafting and illustrative work.

85 Left school sought work in that field - architecture , advertising - wanted to draw.

89 First job with a real estate agent collecting rents - got him to draw up house plans for speculative building.

91 Got work with the Water Board - 1936 - Professional Officer on the general scale - undertaking a course at the Technical College. Enrolled in the engineering diploma course.

MR. BALDWIN, MS MCLAUGHLIN|PF1.

99 Local Government engineering course - a diploma course - five years, later converted to the Civil Engineering Diploma.

103 Dr Murphy - lecturer in Chemical Engineering. Foxhall (?) lecturer in Surveying, Mr Laws (?) lecturer in Construction Engineering, Prof Munro lectured in water supply and sewerage.

116 Mr Waterhouse - lectured in geology - very gifted. Take them out on assignments on the weekends.

125 Did surveying around the College grounds

130 First work at the Water Board - property section and sewerage investigation workshop under Mr McGiven.

137 Equipped very quickly to do elementary surveys around the city (preliminary training given by Mr Wells). Lot of building work going on in Sydney areas (post depression) as far as Glebe - go out and survey the required collection for the building.

147 David Jones building in Castlereigh Street being connected to the building in Elizabeth Street by a tunnel - had to determine where the connection would be joined to the Sydney sewerage work.

156 Sewers coming out in Blackwattle Bay, Bennalong Point that were pouring raw sewerage in to the harbour. These had to be cut off and the sewerage diverted into the Bondi outpour system.

163 Go to various councils and pick up all the latest subdivision plans, maps etc.

169 The Lands Department produced their plans on lithographic stones.

171 Done by deaf mutes to a large extent - gifted draftsmen - worked on lithographic stones and plotted the maps in reverse by hand onto the stones, those were used to put into the printing machines.

185 After doing the surveys in the city - plot the sewerage line to be constructed - plans that would follow on.

194 Underground surveying in the large sewers - Tank Stream - referring back to the very old plans - coloured with beautiful water colours.

204 Under Mr Mort - rationalising of storm water flows, gauging stations.

214 Always a man up on top with a watchful eye to ensure that people don't go down in dangerous situations.

223 Half way through Diploma Course - doing a lot of survey work, and no engineering of a structural nature - resigned from the board, joined consulting engineers Norman Craigy - specialising in country towns water supply and sewerage.

DR. MURPHY, MR. LAWS, PROF. MUNRO, MR. WATERHOUSE, MR. MCGIVEN, MR. WELLS, MR. MORT. | PF1.

239 Work included water filtration plant at Luthan, Adelong, Gosford sewerage and treatment works.

245 Doing small amount of the structural design.

253 Out of depression a lot of money was allocated to development projects - water and sewerage. People encouraged to go into private practice to cope with the load.

256 Norman Craigy was a Chemical Engineer - process engineer - came from the works department - set up a one man show.

265 Contract work - taking overall contract - design and construction.

271 Appointed Resident Engineer.

273 All design had to be approved by the department - Angelo Lewis.

283 There were a number of consultants around - Blair and Stuckey; Norman Craigy, Haskins and Davey - churned out designs for sewerage and water supplies all over the State.

297 Luthan water treatment works - part of the design work there.

302 involved quite a lot on site.

311 Sewerage treatment works at Luthan were to secondary standard.

323 Some of it made available to the public to use at fertiliser for the garden.

337 The liquid part was going in to the broadwater - estuary and water ways (at Gosford) - not very large scale - all accepted as a good system, appropriate at the time.

353 Singleton sewerage.

356 Stayed with Norman Craigy for 18 months - switched to the Irrigation Commission.

364 Joined the Water Conservation and Irrigation Commission in the drawing office.

373 Brewster was the chief engineer - ruled the place with a rod line - his word was law.

381 Principal Designing Engineer - Mr GM Richey - knowledgeable in structures.

391 Engineering Draftsman - in connection with Burrunjuck Dam designs for the materials handling plan for the construction work.

NORMAN CRAIGY, ANGELO LEWIS, BLAIR & STUCKEY, HASKINS & DAVY,
BREWSTER, GM RICHEY|PF1.

134 Told couldn't leave because was in a reserved occupation (all the irrigation was being pushed ahead very quickly to grow food for the war effort - to send to allies.

144 Had to find another reserved occupation - found work with Electric Light and Power Supply company which owned and operated the Balmain power station. Run by Mr HG Condry.

150 Building the new power station.

154 Worked in their drawing office - Jan 1942 - stayed only 6 months.

159 Kestrel in charge of the drawing office.

164 Condry was a very approachable man - go into the city with him - black limosine driven car - told him he wanted to join the army, helped him to do this.

173 Designed one or two substations.

181 July 1942 released to join the army - received a commission as a Professional Engineer.

186 Joined as a sapper to get experience in the ranks - drafted to Cowra - transition camp.

194 Cowra to Kapooka which was the engineer training depot at Wagga - rapidly promoted, sent to the officer training school - enrolled in the course there - came out a lieutenant.

206 First posting Kapooka - to learn about being an officer - basic training , parade work, map reading, bridge building.

218 Posted to New Guinea in Port Moresby - office of command in the engineers office.

233 In this office for 3/4 months - posted to a field company - went by Liberty ship around to Finchhaven - company was seconded to the 9th division (back from the Middle East), works company in support of the division - involved with real military engineering.

249 Minor harbour works, landing jetties, road works , unloading of the ammunition, building stores for ammunition, building the temporary storage works to set up base, set up a small hospital.

271 There for 18 months - final work was setting up a stores base - refrigeration - became a base for moving on.

282 Got dengue fever - taken to a field ambulance - canvas marquee tent - with field stretchers between packing cases, 20-25 patients.

328 Americans terrified of being bombed.

H.G. CONDY, KESTREL. | PF1.

335 Came back to Sydney for re-equipping. In Sydney for quite a time, did a refresher course at the School of Military Engineering.

353 There until 1945 - moved to Brisbane, en route to Borneo, in support of the 9th Division.

398 Built a wharf to receive liberty ships - worked around the clock on a number of developmental projects - completed on programme time.

TAPE 38 A

SIDE 3

11 The Japanese attacked the wharf area, on the night shift - heard rifle shots - managed to intercept them before they got on the wharf - switched off the flood lights- the fighting was within fifty yards - pitch black, gunfire, screams. Took cover.

30 Had earth moving equipment - the tide was rising rapidly - tried to save the equipment - got the necessary people out to wade out to the water and secure them before they got damaged. Kept the equipment viable.

41 The Japanese were annihilated.

46 Donald Friend - artist- depicted the battle.

51 Had Japanese prisoners of war, operated a quarry.

55 Discharged in January 1946, applied to the Irrigation Commission - taken back onto the staff.

60 Back in the design branch. Worked there for 10 years. took up the work at Burrenjack - finished work on materials handling. Transferred on to aspects of the construction work.

65 Engaged on the design of the spillways - some aspects of the design of the buttresses.

73 Mass concrete buttresses - dowels were used as support off the main wall.

77 Gap between the buttresses and the main dam was grouted in when there was a stress situation at the downstream end of the dam. Made one integral structure.

84 Burrenjack dam is a leaky dam - when it was grouted there was a membrane cut down through the main wall, cement grouting of the old drainage holes that were defunct.

92 Leaks through the joints, and through the base of the dam where it joined onto the foundation.

DONALD FRIEND|PF1.

98 The principle of uplift was determined and known about in about 1890 by a German Engineer. Bradfield and Darley who were involved in the design of Burrenjack dam were well aware of uplift - they considered that provided drains were provided under the dams, and a substantial cutoff was provided between the dam and the foundation that this uplift affect would be taken care of.

112 Highly responsible and professional engineers - the uplift was taken account of in the judgment of the designers would be handled.

120 Calculated as a gravity dam - the principle of the uplift load was not accounted for.

125 Calculated as a gravity dam when in fact it was arched.

140 The arching gave the dam an extra bonus of strength - that was used as an aid. This counted for the lack of uplift.

150 Some of the provision took in the way of providing drainage relief was nullified by the fact that the concrete became calcified, the drains became blocked - the provision for uplift gradually became ineffective.

160 Work done by the Commission was to counter the uplift with grouting the foundation.

163 Involved particularly in finishing off the materials handling plant, with the spillway malls. Helping with the analysis to determine the right stress levels to say when we could grout up the buttresses. Some ancilliary work for a new access onto the bridge.

175 Needle weirs in connection with the new spillways.

177 Involved with work for the other dams that came along - closure gates (Burrendong dam), the control gate on the spillway for Keepit dam, tunnelling and grouting of a tunnel for a diversion at Glengorn.

185 Never involved in the embankment - the earth and rock in fill for the dams.

194 All based on statistics available of floods that had occurred up to that time.

196 A lot of gauging done - provided the statistical work to determine what kinds of flows occurred relative to what kinds of rain was falling, could correlate flows in the river and rainfall in one catchment with what was being gauged in another catchment nearby with similar characteristics.

210 During construction built diversion works to be careful of flood.

215 Water over the works - part constructed and coming over the top.

BRADFIELD & DARLEY, |PF1.

226 Occurred over rock and fill dams - Googong (for Canberra's water supply) - overtopped during construction. Were ready for it - put in mesh protection which was very succesful.

243 Period at the Irrigation Commission brought in legislation for help with farm water supply dams - few came to the office to be designed. Small and interesting projects - look spillway and by wash provsions on the basis of an empirical formula.

256 Changes in the design criteria - there was a lot more attention being giving to flood flow estimation for spillway designs, post tensioning and applied extensively to hold down dams.

270 Burrenjuck further improved with more spillway provision and post tensioning cables drilled throiugh the dam and anchored in the foundation. Applied in dam design.

281 Much more earth and rock fill construction - the concrete dam are proving expensive , there are a lot of new techniques used - provision of drainage, membranes on the upstream face.

297 Aid to the design of dams has been the finite element studies - come about due to the availabilty of computers - dividing the structure up into finite elements and being able to study the behaviour of these all in one go, which was impossible by hand methods.

311 Left the Irrigation Commission and went into private practice for four years - general practitioner.

322 Lot of road design - encouraged into this by a contractor (Len Decker - operated in central construction company - doing a lot of bridge and road for council).

340 Introduced to the ...shire/....shire ??? - first job was a job to design a storm water drainage for the town of?.

354 Curve and gutter and underground drains to pick it up - started from scratch. with the help of a few standards from the main roads department - turned out a credible design - under government subsidy.

373 Carried out some road work design - had theoretical knowledge, introduced to the standards - helped greatly - did a lot of work for theshire?

TAPE 38B
SIDE 4

15 Design work for rural roads and small bridges.

18 Introduced to Forbes Municipal Council - did a storm water collector drain for the town of Forbes. Involved a lot of hydraulics and assesment of flow.

| PF1.

23 Involved in structural work in Sydney - became associated with an architect called John Raynes at Epping building blocks of flat.

26 Churches and church halls - became known within the consulting engineering fraternity - created goodwill, picked up by Sandy Britten who worked for consultants McMillan and Britten and was asked to help him out with the design of civil works for the drive in theater in Fairfield. This involved in the drainage work and geometry of the stands for the motorcars.

43 Fairfield, Matraville drive in theatre.

45 Architect named Bolot - got the Gosford drive-in - was engaged as Civil Engineer.

53 Deacon tender for bridge design over Ethel Street at the Spit - asked to prepare alternative design - accepted by the DMR and built.

65 Engaged by constructor to build a lot of farm dams around the country - small and interesting.

70 Contract for Rydal dam part of the Public Works Department - homogenous dam - built satisfactorily for the Public Works Department.

77 Met a few people in the Public Works Department - engaged by another contractor Kyme Brothers who had a contract with the Commonwealth Government for the building of Grafton airfield - engaged as Consultant Engineer.

96 Engaged to prepare a design for dispensing with the tram tracks on Harbour Bridge - to provide a road way on the Cahill Expressway - for McDonald construction. Prepared design, which didn't succeed.

112 Had to expand the practice - take on staff, enough money etc. - Kyme brothers went bankrupt - didn't get the necessary funds, couldn't carry on with a one man business - tossed it in and got a job.

126 Job at public works department - water supply - applied and got it.

129 Upgrading of Lithgow arms factory and sewerage treatment works for the Commonwealth Government - run out of energy - had to stop and take stock and find a different way of earning a living.

140 Job at Public Works Department in the engineering design branch - water supply section.

151 Appointed to undertake designs for the water supply - given a promotion and moved on.

156 Married in 1947, two daughters.

JOHN RAYNES, SANDY BRITTEN, MCMILLAN & BRITTEN, BOLOR, KYME BROS. | PF1.

160 Based in Sydney - archaic in their methods. I could see a few ways that they could improve things managerially - made some suggestions (method of designs being done - and going through on a line production - designs were done on cartridge paper - only one person could see them at a time - suggested printing so that all reviewers could see them simultaneously).

187 Moved to the local government section.

196 Engaged PA management consultants to devise a system of planning and control of designs going through the place - seconded to them , provided data on internal going on.

209 Involved in a couple of dams.

	Richard R. Ash. MLOH 182/1-96 Interviewed by Richard Raxworthy	Interview, 15.7.92
	Tape 39, Side A.	
006	Introduction	
007	Small group of members of Institution volunteered to be school counsellors. He worked as counsellor 10 years. Career nights. This became more complicated, videos etc. He dropped out.	
023	Became Institution's alternate representative on Council of Professions(?) Contributed section on Engineering to brochure.	
033	Always interested in Public Relations	
052	(?) division decided time to bring out new Career's brochure. Chairman, Eugene Smith, worked with him in its production, "A Career in Engineering". 2 issues.	Eugene Smith.
091	1979 Institution's Jubilee. Invited 1978 to join Diamond Jubilee Celebration Committee as PR person. Worked with Arthur Boyd.	Arthur Boyd.
135	On committee that launched the Newsletter, "Engineer Sydney", monthly. On first Engineering Excellence committee, Eugene Smith, first chairman. 1986-7 elected member Sydney Division committee. Worked to nominate David Pilgrim, editor for "Rainfall and Run-off", for national award. Granted as Science not Engineering award.	Eugene Smith. David Pilgrim.
206	Comments on engineering profession to-day.	
256	Honorary life member of Australian water and waste water association. 1946 organised technical sessions for an International water pollution research conference in Sydney. Member of Australian national committee on large dams. Royal United Service Institution of N.S.W. councillor.	
303	End of interview.	
308	No introduction. Straight into speaking of Arthur Boyd from Institution of Australian Engineering Oral History. Postscript on Arthur Boyd's tape.	
312	Sydney division c.1966-88 recommended to the Institution the fellowship for 3 women. The first 3 women, Cindy Hall, professor of mechanical engineering, Institute of Technology, the Shire engineer at Rylestone, Rhonda Maciber, then president of the Sydney Water Board. Meredith Rogers, first woman elected as councillor, 1986,	Cindy Hall. Rhonda Miciber. Shire engineer at Rylestone, name not known.

	in Sydney division.	
336	Interviewer names first woman engineer in Water Board whom he intends to interview.	
343	Why women were invited to become fellows of the Institute.	
371	End of Tape 39 .Side A.	