

The Institution of Engineers, Australia  
Sydney Engineering Heritage Committee

Oral History Program

INTERVIEW TAPE LOG

**Interviewee:** Thomas Grandin CHAPMAN      **Tape Numbers:** IEA SYD PT 6, PT 7.

**Interviewer:** Paul TINSLAY      **Number of Tapes:** Two (2)

**Place of Interview:** Crow's Nest, NSW

**Date of Interview:** 10 March 1998

**Restrictions on Use:** None

**Log prepared using (make and model of machine):**

Optimus Vox Voice Activated Cassette Recorder, Model No. DTR-107

| Tape: IEA SYD: PT6, Side A |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                         |
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| Time/<br>Counter           | Subject                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Proper Names &<br>Keywords                                                                                                                                                                                                              |
| 0-60                       | Born in Shanghai, father an Educational missionary. Childhood in Jersey, then China. Had many illnesses so returned to England. Father Maths & Science teacher, wrote a maths textbook in Chinese; influenced his interest in Civil Engineering. Boyhood in Jersey.                                                                                                                                                                                                                                                                                                                                                       | Shanghai<br>Educational Missionary<br>Wanchow (?)<br>Jersey<br>Tientsin (?)<br>North China<br>Chinese arithmetic textbook<br>Civil Engineer                                                                                             |
| 61-144                     | Teenage years through German Occupation of Jersey, how family survived. Description of island. Attended the only Public School in Jersey, taught by good teachers, many other students evacuated, taught by elderly teachers. Entered Leeds University in October 1945. Talks about time at university, difficulty in understanding students' accents, lodgings, the cold winter of 1947, rationing. A big advantage in having two groups of students: those like him straight from high school, and a group of strongly motivated exservicemen.                                                                          | Irrigation Engineer<br>German Occupation<br>Jersey<br>Victoria College<br>Evacuation<br>Tertiary education<br>Leeds University<br>University life<br>Rationing<br>Student groups<br>Exservicemen                                        |
| 145-222                    | Inspired by Head of Department, Professor Evans; always interested in hydraulics and water; Initially interested in State Rivers & Water Supply Commission in Victoria; this fell through; later Commonwealth Department of Works & Housing began recruiting engineers in England. Interviewed in London by Mr Haslam, accepted and sailed for Australia end of 1948 on the 'Mooltan' (?). 1949 a turbulent year in Australian politics; assigned to Head Office of Works & Housing in Aerodrome and Roads (preferred hydraulics), testing soils and concrete. Became specialist in bituminous materials. People in Works | Professor Evans<br>Pre-stressed concrete<br>pioneer<br>Hydraulics<br>John Mathieson, Professor of<br>Engineering, Melbourne<br>University<br>State Rivers & Water Supply<br>Commission<br>Commonwealth Department<br>of Works & Housing |

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|                       | & Housing formed nucleus of Snowy River Scheme. Many new airports being built, new techniques designed to suit dry Australian soil conditions.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Mr Haslam<br>Ship 'Mooltan' (?)<br>Australian politics<br>Aerodromes and roads<br>Soils, concrete<br>Bituminous materials<br>Snowy River Scheme<br>Rowntree<br>Mr Waite (?)<br>Airports<br>Mr Coghlan (?)<br>New techniques                                                                   |
| 223-344               | Essendon Airport, Parafield Airport; took part in site investigation West Beach Airport; use of Porter Super Compactor from USA; described test strips which provided basis for design of airports on areas with very low CBR (California Bearing Ratio) ratios; country airstrips surfaces gravel, city airstrips sand seal. Did design and construction for first bituminous surface for east-west runway, Sydney airport. Discusses construction process involving changing the course of Cook's River. Runway surface, Department of Main Road's involvement.                                                                                                                                                 | Essendon Airport<br>Parafield Airport<br>West Beach Airport<br>Compactor from USA<br>Compaction Tests, CBR<br>Airports<br>Airstrips<br>Sydney airport<br>Cooks River<br>Department of Main Roads                                                                                              |
| 345-522               | Marriage and children, set up home in Sydney. Trip back to Jersey. Qualifications not recognized in UK. Entry into academia - lectureship in Hydraulics at Southampton University; enjoyable time, designed and set up Hydraulics Laboratory, gives description; talks about his lack of experience in teaching and getting used to lecturing and public speaking; faculty details, students; civil engineering department staff; workload. Discusses his change from soils to hydraulics; hydraulics of groundwater flow for PhD. Referred to work on Kingsford Smith Airport, use of wellpoints and drainage for excavation - resulted in first published paper. Preferred research to teaching. Completed PhD. | Dee Why<br>Jersey<br>IEAust<br>Colonies - Africa<br>Academia<br>Hydraulics<br>Southampton University<br>Imperial College<br>Hydraulics Research Institute<br>at Wallingford<br>Groundwater flow<br>PhD<br>Kingsford Smith Airport<br>Wellpoints                                               |
| 523-620               | Decided to return to Australia. Hydrologist, Division of Land Research and Regional Survey; different culture. Moved to headquarters in Canberra; aerial reconnaissance surveys, fieldwork in remote areas; survey of groundwater and surface water resources.                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Division of Soil Mechanics<br>CSIRO<br>Melbourne<br>Australian Scientific Liaison<br>Officer in London<br>Abner Chavitski (?)<br>Division of Land Research &<br>Regional Survey<br>Mr Christian<br>Scientists<br>Canberra<br>Papua New Guinea<br>Northern Australia<br>Wiluna, West Australia |
| End Side A, Tape PT 6 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                               |



| Tape: IEA SYD: PT 6, Side B |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                          |
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| Time/<br>Counter            | Subject                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Proper Names &<br>Keywords                                                                                                                                                                                                                                                                                                                                                                               |
| 0-077                       | Discusses groundwater project at Weipa. Prepared groundwater resource plan and did testing which showed sufficient underground water, making the proposed building of a dam unnecessary. Wrote a paper on it. Talks about interest in residence time of groundwater systems, these were new concepts. Little surface water run-off due to rapid soil infiltration.                                                                                                                                        | Weipa<br>Comalco<br>Water source<br>Wenlock River, near Weipa<br>Mr Christian<br>Alan Stewart<br>Groundwater Pumping Test<br>Pumping and observation bores<br>Underground water<br>Residence time<br>Great Artesian basin<br>Excess water from pump bore<br>Pumping rate<br>Infiltration rate of of soil<br>Bauxite<br>Sand aquifer                                                                      |
| 078-167                     | Good experience during this time; among other projects, set up network of gauging stations in Alice Springs area, defeated by problems of instrumentation. Took part in working groups on water balances and hydrological maps in UNESCO project – International Hydrological Decade 1965 to 1975 - prompted by American and Russian scientists to estimate water balance of world; involvement broadened outlook of Australian water resource authorities, stimulated Australian aid to other countries. | Weipa<br>Wiluna<br>Hunter Valley<br>Alice Springs<br>Instrumentation<br>UNESCO<br>International Hydrological Decade<br>Australian Water Resources Council<br>Water balance computations<br>Hydrological maps<br>Division of National Mapping<br>Water Resource outlook                                                                                                                                   |
| 168-245                     | 1971 CSIRO work not stimulating enough, preferred research to managerial role; became Professor of Engineering at Duntroon; field trip with students to Wewak, soil testing etc. Course emphasis on ground aspects of civil engineering rather than military; more time spent on soil mechanics etc, rather than structures. Developed laboratories at Duntroon – unsuitable premises.                                                                                                                    | CSIRO<br>Natural Resources Group<br>Managerial role<br>Duntroon<br>Faculty of Military Studies<br>Chair of Engineering<br>University of New South Wales<br>Professor of Engineering<br>Major General Pearson<br>Papua New Guinea<br>Wewak<br>No military aspects<br>Hercules<br>Course work<br>Soil Mechanics<br>Military applications<br>Hydraulics<br>Laboratories<br>Australian Defence Force Academy |

| Time/<br>Counter | Subject                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Proper Names &<br>Keywords                                                                                                                                                                                                                                                     |
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| 246-438          | Moved to main campus at Kensington in 1981 as Chair in Water Engineering. Students and staff far less motivated than those at Duntroon, variety of abilities and interests; military versus civilian students. Outlines duties as Head of School and other interests. Retirement; research interests discussed.<br>Consultancy work while at University of NSW; major changes in faculty and School of Engineering; discusses competition for students between Sydney University and University of NSW; lack of students doing PhD's. | Professor Valentine<br>Department of Water Engineering<br>Difference in faculties<br>Head of School<br>Retirement<br>Groundwater hydraulics<br>Modelling rainfall runoff relations<br>Sydney University<br>International students<br>Monash University<br>PhD's in Engineering |
| 439-566          | Discusses university fees, prefers HECS scheme to full fee payment.<br>Retirement in 1987; visited Sweden, worked with UNESCO working group on textbook on comparative hydrology to rectify mistakes made on water resource projects which were inappropriate to their situation.<br>Returned to Australia, answered advertisement for Engineer Class 2 at the Alligator River in the Northern Territory.                                                                                                                             | University fees<br>HECS Scheme<br>Retirement<br>Sweden<br>UNESCO<br>Textbook on Comparative Hydrology<br>Stockholm<br>Alligator River<br>N.T. Department of Mines<br>Jabiru<br>Darwin<br>Groundwater data                                                                      |
| 567-602          | Remarriage and move to Sydney in 1988, wife first female lecturer in civil engineering in Australia. Currently involved in research based at University of New South Wales; describes functions of Emeritus Professor.                                                                                                                                                                                                                                                                                                                | Remarriage<br>Penny Fitzgerald<br>Sydney<br>University of New South Wales<br>Emeritus Professor                                                                                                                                                                                |
|                  | <b>End Side B, Tape PT 6</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                |

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|                              | <b>Tape: IEA SYD: PT 7, Side A</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 0-84                         | <p>Discussion about research into groundwater systems and uses; relates a serious groundwater pollution problem in Canberra. Talks about future plans – will continue to do research, currently involved in analysis of stream flow hydrographs and base flow.</p> <p>Discusses changes in hydraulics particularly instrumentation; use of satellite and air photo data. Talks about importance of data recording and use of spatial data and its effects on hydrology, nature of soils, geometry of catchments; advances in computer technology have made a huge difference in this area.</p> | <p>Groundwater systems<br/>Australia<br/>United States of America<br/>Shallow groundwater<br/>Canberra<br/>Lonsdale Street<br/>Pollution problem<br/>Lake Burley Griffin<br/>Stream flow hydrographs<br/>Base flow<br/>Hydraulics<br/>Instrumentation<br/>Satellite<br/>Air photo<br/>Co-operative Research<br/>Centre for Catchment<br/>Hydrology, Melbourne<br/>Data recording<br/>Spatial data<br/>Stream gauging station<br/>Rainfall station<br/>Digital elevation models</p> |
| <b>End Side A, Tape PT 7</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |