



BIOGRAPHY OF LOUIS A. CHALLIS

For many people Acoustics is a black art, for some who ignored it, it has proven to be costly error of judgement whilst for some it has proven to be a new exciting science. One of those in the later category is Louis Challis whose profession also became his hobby.

Louis graduated from Sydney University in Electrical Engineering and after graduation looked for an unusual and exciting job. He found it in underwater acoustics at the Royal Australian Naval Experimental Laboratories. They taught him many things there and most of the ideas and concepts have stood him in good stead.

Since those early days of acoustics Louis has proven himself to be something of an innovator with a number of patents and a few Engineering awards to his credit. One of the latest awards was for an unusual and very effective Steam Purge Silencer that he designed for New Zealand Electricity at Huntly Power Station.

Following his setting up a consulting practice in 1965 he took up a research brief for D.C.E. Vokes for whom he developed a range of air conditioning and industrial silencers.

To make his consulting work more effective he commissioned Vokes Acoustics Laboratory at Rockdale where the measurements were always performed in the early hours of the morning when the planes weren't flying. Louis realised that this was 'strictly for the birds' and decided to build his own laboratory complete with a gigantic reverberation chamber correctly sized for measurements at 63Hz where other laboratories (including that of Vokes) were just too small.

The release of the British Standard BS4718 provided the last little bit of impetus that he needed - and in 1972 he built the first laboratory outside the U.K. designed from the ground up to perform combined Airflow and acoustics measurements to meet the requirements of that standard.

This development was not in vain and he received three large overseas commissions from the U.S.A. to research and design silencing system for Gas Turbine Stations in New Zealand and the Far East. These stations were so successful that he gained the New Zealand Electricity and the the New Zealand Ministry of Works as on-going clients.

Since then the laboratory capabilities have been even better developed with computer controlled instrumentation and NATA registration for air flow, and all of the other acoustical measurements for which it is used. (See photo).

In 1981 Louis was selected as the Acoustical consultant for New Parliament House Canberra, an exciting brief which will most probably keep him busy for the next 5 years. As Louis puts it he will now be designing the acoustics for a circus, a stadium and a theatre where the noise of air conditioning is banned, but swearing and the other four letter words must be "clearly heard and recorded".

* THIS DOCUMENT PRODUCED CIRCA 1982, BUT CONTENTS ARE STILL RELEVANT

Has designed and commissioned a unique acoustics laboratory. This laboratory was the first laboratory to achieve the accreditation of the National Association of Testing Authorities for calibration of Sound Level Meters, Microphones and is currently the only laboratory registered for the N.A.T.A. assessment of tape recorders, level recorders and associated acoustical equipment.

Is a member of the noise advisory committee of N.A.T.A. Has acted in the role of Primary Acoustical Assessor for the Technical Laboratory Registration Board of New Zealand (an organisation similar to N.A.T.A.) since 1976 and has carried out assessments of all the New Zealand acoustical laboratories registered to this time.

Mr. Challis has undertaken major environmental and community noise control projects in all States of Australia, New Zealand, Papua New Guinea, the Far East and U.S.A.

He is retained as principal external acoustical consultant by the New Zealand Electricity Department, New Zealand Ministry of Works, The N.S.W. Electricity Commission and the Papua New Guinea Department of Works and Supply, the Commonwealth Department of Transport & Construction and The Parliament House Construction Authority.

Mr. Challis has presented invited papers on Acoustics and Vibration at International Symposiums in the U.S.A., N.Z. and Australia.

Has undertaken major studies on the development of new criteria for the assessment of community noise placing major emphasis on statistical analysis and realistic criteria and goals for the protection of environmental amenity.

Has undertaken in excess of 50 major studies of noise from entertainment premises including hotels, discoteques, clubs and outdoor concert venues.

Has represented many Councils in the Local Government Appeals Tribunal, the Equity Court and both the N.S.W. and Queensland Licencing Courts in matters relating to noise in Licenced premises.

Represented the Council of the City of Sydney in the Equity Court Hearing of the appeal relating to the "Simon and Garfunkel" concert. The court accepted the criteria nominated by Mr. Challis in handing down its judgement.

NOTEWORTHY ACHIEVEMENTS

1. The first person to apply for NATA registration in Vibration Measurements, and subsequently for Building Acoustics Measurements. Constructed the first reverberation chamber with associated ultra-quiet airflow system in Australia, for dynamic measurements of attenuation performance of silencers and air handling system components.
2. Has successfully designed the acoustics for some of the most prestigious and complex projects in Australia and New Zealand, which include :
 - (a) New Parliament House Canberra, (for which Louis received two engineering awards, one for the computer controlled acoustical scale modelling procedure, and one for the innovative design of plaster waffle infill panels), which saved well in excess of a million dollars in the construction costs of the building.
 - (b) The detailed conceptual and acoustical design for two extremely successful Gas Turbine Power Stations in New Zealand. The first a 100MW station at Otahuhu in the heart of Auckland, and the second a 240MW station at Stratford. Louis has also acoustically designed a Geo-Thermal Station at Ohaki, and an extremely successful high voltage DC Sub-Station at Hayward, near Wellington.
 - (c) The detailed acoustical and related aerodynamic design for an engine test cell at Fishermens Bend used for testing the F404 engines in our new FA/18 fighters. (The public is unaware of its operation)
 - (d) Detailed conceptual and conceptual design for the new Radio Australia Studio Complex at Burwood East, Melbourne. The design utilised a modular concept to simplify construction and reduce costs. All the studios and control rooms met their demanding specification requirements. The studios were constructed within the original budget and on time.
 - (e) The detailed conceptual and acoustical design for the RAAF's new Engine and Aircraft Run-Up Facilities at the RAAF Tindal Air Force Base. The facility is the first of its type in the world where noise levels have been reduced to less than 138dB(A), under the tail section of an FA/18 with full afterburner.
 - (f) The environmental assessment and acoustical design of the new Sydney Harbour Tunnel.
 - (g) The environmental assessment and acoustical design for the new Northern Rail Line in Perth which opened last year.
 - (h) The acoustical environmental assessment and subsequent design for the new Opera House Car Park.
 - (i) The acoustical assessment and design of the Woollahra Cutting Section of the Eastern Suburbs Railway, (and the one section of the line which has never evoked a single complaint to the State Rail Authority)
3. Appointed to RAAF special reserve with the rank of Wing Commander.