

History of the Department of Physics at UWA

Issue No. 7: “Mr. D.W. Everson and the Department’s War Work”

Presented by John L. Robins

Introduction.

The first Article is a personal account by John Budge of one aspect of the work undertaken within the Department to help the nation’s war effort. This relates of course to World War 2: 1939 to 1945. In fact it constitutes a tribute to the amazing dedication, ingenuity and skill of Mr. D.W. (Don) Everson, the Department’s (and the University’s) longest serving Laboratory Manager, who started as the first Physics laboratory assistant in 1915 and served the Department and the University until his retirement in 1963, which is, virtually, for the University’s first 50 years of existence.

The second article is an extract from “Campus at Crawley”. It acknowledges the exceptionally long and outstanding service of Mr. D. W. Everson to the Physics Department and the University.

Sources.

The first article was written by John Budge who was himself one of the longest serving technicians in the University. He started as an apprentice in the Physics Department Workshop in 1947 and finally retired as a senior technician in 2004.

The second article is an extract from “Campus at Crawley” by Fred Alexander (1953), which is an historical tome of 875 pages presenting ‘A narrative and critical appreciation of the first fifty years of The University of Western Australia’. The present extract (page 754) is an acknowledgement of Mr. D. W. Everson’s outstanding contribution to the University, somewhat in the form of a valediction.

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An Unpublished Report

WARTIME ACTIVITIES WITHIN THE PHYSICS DEPARTMENT

Subtitle: Military Intelligence, the Technician, the Insurance Salesman, the Greengrocer – and Cure-em-quicks”

by

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The history of the Physics Department would not be complete without acknowledging the work done during World War II for the Australian Military in refurbishing and preparing for use, mainly in the Pacific war theatre, the thousands of binoculars "donated" by the

Australian public to help the war effort.

The details of how this all came about are a bit sketchy, but essential elements of the story go back as far as the appointment of a remarkable character, Don W. Everson later known simply as "DW", as the Department's first technician in 1915 when the University was located in Irwin Street, Perth. An extensive knowledge in all things electrical, together with his all-round manual and innovative skills, made this exceptional do-it Yorkshireman the ideal person for what was to follow.



Mr. D W Everson
(Photo probably taken in about 1963)

His first real test of optical innovation came when he was assigned the task of making the extensive mountings, and precisely aligning the special cameras, at the observation site at Wallal Downs station in our north-west to take what turned out to be a remarkable set of photographs of the 1922 solar eclipse. These observations were made to further test Einstein's theory of the bending of light rays as they passed by the Sun. This bold initiative, carried out on a shoestring budget, catapulted the Physics Department into the front line of astrophysical research, which continues today. [An account of the Wallal Expedition will be presented in a future Issue of this *History of the Physics Department*.]

Although something of a quantum leap from making up relatively simple experimental apparatus for the laboratories, DW took it all in his stride and over the following years he gradually built up the workshop facilities from its home-handyman status to match the growing sophistication of the Department.

By the start of World War II DW had acquired a superb American cabinet-maker's circular saw, a high-quality drilling machine, and a state-of-the-art precision 9 inch swing Holbrook lathe, still in use today [2000], which was to prove invaluable in the optical munitions work.

Just how the military came to involve the University in the binocular work is a little unclear. Perhaps it was the definitive example of military intelligence! Be that as it may, by the end of 1941 work was apparently well under way. Many of the [donated] binoculars were in a poor state of repair, with parts missing, chipped and misaligned lenses, and damaged focussing mechanisms, etc. With the aid of the Scientific American publication "How to make a Telescope", DW set about learning the art of lens-grinding and many tricks of the trade peculiar to optical mechanics.

The first task was to make the apparatus for testing the optical properties of the lenses, and a collimator for setting their alignment to ensure that both lens systems focussed at the same point. This was followed by making the grinding machines, one for grinding optical flats for graticules and prisms, the other for generating the concave and convex forms of the lenses. For every different radius of curvature of the lenses, cast-iron forms had to be made, along with precisely made radius gauges.

Circular blanks for the lenses were trepanned from strips of plate glass using the old technique of grinding through the glass with a cylindrical cutting tool with a number of vertical slots around the circumference for the retention of the grinding powder. The blanks were mounted onto the lens-grinder head with pitch, the same stuff that we used to scrape off the roads on hot days to plug the leaks in our tin canoes, then ground and pre-polished into their final form with the use of successively finer grits. The final polish was achieved using superfine grades of rouge, as in ladies cosmetics. Compound lens assemblies were bonded together with a material called Friars Balsam, which I always thought was a home remedy for treating the dreaded "lurgie".

Once the main technical problems were solved it wasn't long before extra staff were needed to cope with the increasing workload. DW was fortunate to obtain the services of ex-insurance executive Victor Leggatt, an outstanding member of Perth's model engineers' fraternity, and ex-greengrocer Ralph Eades, seconded from F & R Tough in Perth who were engaged in making mortar bomb and hand-grenade casings and other military hardware. [See also Presenter's Note below.]

These two gentlemen performed most of the precision machining for the reconstruction of the binoculars, for which the Holbrook lathe proved indispensable, especially the feature that allowed threadcutting to be carried out right up to a shoulder with the aid of a unique adjustable drop-out mechanism. Another young man was employed principally to check and align the optical elements in the darkroom DW had set up beneath the lecture theatre, and a young lady was engaged to do the spray-painting and to help out with the anti-fungal tropic treatment and packaging of the binoculars ready for dispatch.

The young lady in question was rather fond of the boys, and DW related how whenever he was looking for her he always checked out the darkroom first. On one occasion when refused permission by DW to have the afternoon off for a romantic rendezvous with an American sailor she accidentally on purpose spray-painted herself and was sent home to clean herself up. Needless to say she wasn't seen again till the next day.

After about the first year of operation the new process of hard-coating the lenses, called "blooming", was introduced. As it was then a top-secret process the equipment was installed in a high-security room and was operated by a specially trained Petty Officer from the Royal Australian Navy.

Notwithstanding DW's hectic schedule other diversions sometimes cropped up requiring his attention. Soon after the arrival of the Catalina flying boat squadron at Matilda Bay Professor Ross was enlisted to act as a technical adviser, which meant that problems of a practical nature were passed on to DW.

One such problem arose from the use of the Catalinas as dive-bombers (believe it or not!) to attack the Japanese freighters that were supplying their troops in the islands to the north of Australia. DW was asked to knock up some sort of instrument that would allow the pilot to set the aircraft at the optimum dive-angle for this hazardous operation. He made up a simple "angleometer" that was attached to the bulkhead near the cockpit, and was talked into going on a test flight to trial the device. So off they flew down to the Peel estate where the unlikely dive-bomber gyrated like an eagle in a thermal, ever upward to about 15,000 feet, then with little warning, the pilot threw the gangling old machine into a steep dive.

Relating the story many years later DW graphically described how his stomach turned somersaults as the aircraft shuddered and shook as it picked up speed. Absolutely petrified, he was convinced the wings would fall off and that, despite the nonchalant manner of the aircrew, which he dismissed as sheer bravado, all aboard were shortly to meet their maker. His legs turned to jelly when he suddenly noticed how quickly the earth seemed to be rushing towards them. Then he heard the call "Bombs away!" and hung on for dear life as the pilot levelled the plane out. They circled around for a while as the aircrew checked out the bomb-impact site. Much to DW's relief the angleometer was deemed a success; he would not have to go through this life-threatening experience again.

With the end of the war the binocular project was wound up, but this didn't mean that DW could put his feet up. The teaching laboratories needed major upgrading and expanding to cope with the sudden rise in student numbers, many of whom were returned service personnel. Vic Leggatt stayed on for a short time before returning to his insurance job and Ralph Eades set himself up in business supplying and servicing surveying instruments from the experience he gained on the optical munitions work, leaving DW to virtually go it alone with the help of a laboratory assistant.

In the late 1950's, on the verge of retirement, DW became heavily involved in the design of the new Physics building, which we moved into in 1962. Having served the University and his country magnificently for some 48 years, with little fanfare or fuss, DW finally retired in 1963.

Mere words seem inadequate to convey the praise that is surely his due, not only for his achievements, but for establishing the high standard of dedication and service for future generations of technicians to aspire to.

Oops! I nearly forgot the "Cure-em-Quicks". As you might imagine, what with the long stressful hours working on the binocular project, whilst at the same time managing the Department and maintaining the teaching laboratories, not to mention the fact that his wife was unfortunately a chronic asthmatic, DW's health suffered to some degree. He frequently

got the sniffles, but seemed always able to keep on keeping on by sucking on copious quantities of those little chunks of Irish seaweed extract called "Cure-em-Quicks". In view of the importance of DW's wartime work alone it seems appropriate to acknowledge this humble medication its rightful place in history.

I would like to thank Miriam Congdon and Colin Halbert of the University Archives Office for their assistance in the preparation of this article.

J R Budge
June 2000

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An Extract from
CAMPUS AT CRAWLEY

Acknowledgement of exceptionally long service of Mr. D. W. Everson

[In June 1963] the University farewelled its senior technician, who was also the member, of all its various staffs, with the longest record of continuous service. Mr D. W. Everson's 47 years in the Physics department began in 1916. He saw the department through its move from the initial cramped quarters at Irwin Street, in which he had worked for the greater part of its existence, to temporary buildings at Crawley. He was next responsible for the detailed control of technical services in the Physics section of the Physics and Chemistry block completed in 1935. Finally, in the year preceding his retirement, he supervised the transfer of the department's greatly increased equipment to the large new building opened in 1962, in the planning for which he had played an active part as far as the workshop and laboratory services were concerned.

[This] one-time laboratory assistant in Physics [became] the first of the University's technical staff to attain the status of laboratory manager. ... He commanded widespread respect among students and staff, including technicians in other departments. For years Mr Everson provided a link between the Staff Association and the Technicians' Association of which he was the first president. By the time of his retirement he had, indeed, had a remarkable span of service, having worked under all three of the professors who held the Chair of Physics during the University's [first] fifty years.

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[Presenter's Note.] As was reported elsewhere (see article in Issue 5) during the war years, there were about 25 women working in the Department in connection with the Binocular Refurbishment program. It is interesting to note that the woman in charge of this team was Greta May Pollitt, who later married Lloyd Lucas, although they had not met during the period of this war work. Dr. Lucas became a member of the University staff in 1946, serving as a lecturer in the Physics Department until 1964 and as inaugural Director of the Electron Microscopy Centre until his retirement in 1983.]