

## THE INDUSTRY . . .

(continued)

*Napier prize-giving:  
Trade apprentice  
Peter Barnes receives  
his indentures from  
Mr. W. E. Lewis,  
works manager.*

training was 391. The number was smaller than last year but this was part of a deliberate policy to obtain the optimum number of 378, which would fulfil all the company's needs in the future.

The guest speaker, Mr. H. M. Mathews, Director of Engineering for the English Electric Co., Ltd., said in his speech that if he had one word of advice it was that much benefit could often be derived from a brief deviation from a man's chosen career.

The principal awards of the evening were the company's trophy and prizes, which were presented by Napier's managing director, Mr. H. Sammons.

### A Film About Hydulignum

A DOCUMENTARY film entitled *The Hydulignum Story* was attended by more than 80 guests during its première at the British Council Film Theatre in London on December 3.

As is well known in the aircraft industry, Hydulignum, which is made by Horden-Richmond, Ltd., is a laminated and densified wood manufactured by interleaving synthetic resin glue film between veneers of beech or birch, and then compressing these under great heat and pressure. The result is an extremely strong material, one-sixth the weight of steel and half the weight of aluminium, and capable of being machined with ordinary wood-working tools. *The Hydulignum Story* describes the manufacturing processes and illustrates some of the principal applications, among which are press tools and jigs, spinning chucks, propeller blades, and helicopter rotor blades.

The film opens with shots of Spitfires in flight—their aircrew

blades and those of many other World War 2 aeroplanes were the origin of Hydulignum.

Manufacturing processes are then described, beginning with the selection of veneers. These are passed through kilns to obtain uniform and correct moisture content, trimmed to size, and assembled into packs. Sheets of resin glue are then interleaved and the combined pack mechanically loaded into multi-daylight hydraulic presses and subjected to pressures of over 1 ton/sq in and temperatures up to 145 deg C. After cooling, samples from each batch are tested, trimmed, and either stored or passed to the machine shop for manufacture into components.

Some applications of Hydulignum are then illustrated, beginning with press tools. A deep draw tool is shown being profiled, followed by the pressings made from it.

Examples shown of Hydulignum tools used in the aircraft industry include rubber press tools, drill and router templates, stretch-press tools and assembly jigs, as used in the manufacture of the Britannia, Viscount, Comet 4, and Sea Vixen aircraft.

The first application of the material to blades to be shown is the 40 fan blades for the new transonic wind tunnel of the Aircraft Research Association. Each blade, with its steel retention plates, weighs over 200 lb.

The remainder of the film covers the production of helicopter rotor blades and the manufacturing techniques and tests required to meet A.R.B. requirements, and a summary of the servicing facilities offered by the manufacturers to helicopter operators.

### Thrust Cradle Test

SOME figures have been given by Heenan and Froude, Ltd., of Worcester, for the test performance of a large turbojet engine thrust cradle they have designed and manufactured for a Government department.

The requirement was for measurement of very large thrusts with the highest possible degree of accuracy, and the method adopted was to mount the movable portion of the cradle on three self-aligning oil-floated bearings.

After the underlying bedplate had been set down it was found that this had a slope of 1:24,000—which, though fractional, proved sufficient to cause the moving part of the thrust cradle (weighing seven tons) to move from top to bottom of the slope in a few seconds. And as further evidence of the freedom of this method of suspension, it was discovered that a weight of 8 oz suspended from a piece of thin string over a pulley proved ample to move the cradle from one end of its travel to the other.

## IN BRIEF

Wayne Tank and Pump Co., Ltd., are now installed in their new premises at Western Road, Bracknell, Berks, to which address all communications should be sent.

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Mr. Charles Bayley, A.M.I.S.E., has joined the technical sales staff of the Solderless Connectors Division of Hellermann, Ltd., Crawley, Sussex.

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A booklet illustrating current products is being distributed by the R.F.D. Co., Ltd., Godalming, makers of inflatable rafts and other life-saving equipment. The company also makes target gliders and other training equipment.

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Among products covered by pamphlets issued by Armstrong Patents Co., Ltd., Beverley, Yorks, are the "Heli-Coil" insert-thread repairing kit, the Universal Stillage, and a simple hydraulic remote-control system for a wide variety of industrial applications.

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Well known as specialists in the overhaul of aircraft engines of up to 450 h.p., Hants and Sussex Aviation, Ltd., of Portsmouth Airport, have been granted United Kingdom distribution rights of the series of engines manufactured by the Continental Motors

Manager of the Aerad division of International Aeradio, Ltd., since its formation in 1948, Capt. E. Brook Williams has retired on reaching the age of 60. He remains available to I.A.L. as a consultant. His association with aviation began in 1937, when he joined British Airways as navigation instructor. On the formation of B.O.A.C. in 1940 he was appointed superintendent of navigation. He transferred from B.O.A.C. to International Aeradio in 1948 and was largely responsible for the success of the "Aerad Flight Guide."



A new aircraft tap by Baynes Aircraft Interiors, Ltd., of Langley Aerodrome, Slough, Bucks. The handle is spring-loaded to close automatically, and is operated by a quarter-turn in an anti-clockwise direction. Flow is 9 pints at 4ft head, 11 pints at 6ft head, or 13½ pints at 8ft head. The tap is made from brass alloy, chromium-plated, and weighs 15¼ oz. Height less the threaded portion is 2.6in, and maximum width just over 4in.



Corporation. This, they state, should enable them to provide for users of these well known American units a service comparable with that which they have offered operators of British engines for many years past. The service includes an exchange scheme.

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A new catalogue giving details of their entire range of aircraft pneumatic components has been introduced by the Hymatic Engineering Co., Ltd. Information comprises an outline drawing of each item, details of its use and performance, an explanation of its functioning, and a brief specification.

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The Hylite range of titanium alloys manufactured by William Jessop and Sons, Ltd., has now been extended to include Hylite 15, a commercially pure titanium supplied to D.T.D. Specifications 5003 and 5023; and Hylite 45, containing 6 per cent aluminium and 4 per cent vanadium. This latter is a high-strength alloy which responds to heat treatment.

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Principal guest at the third annual dinner dance of Folland Aircraft, Ltd., supplies department, held recently at Southampton, was Mr. Godfrey Evans, Kent and England wicket-keeper. Also present were the company's three test pilots and Mr. W. E. W. Petter, C.B.E., F.R.Ae.S., managing director and chief engineer, who thanked the suppliers, many of whom were present, for the help they had given in the production of the Gnat.