THE INDUSTRY

Pointer to Progress

CONFIDENCE in the ability of the Avro Canada organization to continue its successful development and production of aircraft and gas turbines is indicated by the news that the parent Hawker Siddeley Group is making a further investment of $3,000,000 in the company, bringing its total investment in shares to $10,000,000.

In making the announcement, Crawford Gordon, Jr., president and general manager of Avro Canada, said the additional subscription was also "a forward move in the growth of Avro Canada as a commercial company now doing important defence work for the Government in producing CF-100 fighters and Orenda engines as well as other assignments." He pointed out that while the company is managing certain projects for the Federal Government under the rearmament programme, it remains essentially a private concern engaged in development, research and production.

Dunlop Senior Appointments

IT is announced that Mr. D. B. Collett, vice-president and general manager of the Dunlop organization in Toronto, is shortly returning to England to join the Dunlop main board as an executive director. He will work in close association with Mr. A. Healey, executive director in charge of all production, including technical development, research and labour policy.

Mr. Collett, who is 44, is the seventh son of the late Sir Charles Collett, Bt., Lord Mayor of London in 1933-4. He joined the company in 1926.

Mr. J. P. Anderson, C.B.E., Dunlop's chief purchasing agent, succeeds Mr. Collett in Toronto, and will in turn be succeeded by Mr. L. J. W. Bailey, general manager of Dunlop Plantations, Ltd.

A New Nimonic

ALTHOUGH the part played by metallurgists in developing new-established materials for gas turbines is generally appreciated, the necessity for unceasing development of improved alloys may be less obvious. Nothing in aeronautics is ever quite static, and the demands of gas turbines for operation at increasing temperatures implies the constant provision of ever-better materials.

To meet this demand the Mond Nickel company have continued to develop their ubiquitous Nimonic alloys, and the newest which may be mentioned, Nimonic 95, is likely to permit significant increases in the output of gas-turbine power-plants, by raising the maximum permissible temperatures and operating stresses.

An alloy with a high creep-resistance at elevated temperatures is necessarily difficult to hot-work. One of the major problems in the development of Nimonic 95 was the maintenance of reasonable forging characteristics; but this has been successfully achieved, and the alloy can be machined and hot-rolled without trouble. The improved mechanical properties have been obtained by increasing the percentages of the hardening elements and, since this does not usually produce an increase in the melting-point of the alloy, the objective was to be expected a reduction in the temperature-interval within which hot-working may be performed.

The "production" side of the Nimonic alloys is the prerogative of Henry Wiggin and Co., Ltd., who have managed to perfect a technique for fabricating the new alloy by maintaining careful control of the ingredients and by carrying out melting and casting within strictly defined limits, as well as by making parallel improvements in hot-working technique.

Since the alloy is a fairly new development, extended tests over long periods have not yet been made; but the short-time results, which are of primary importance in aircraft engines, indicate that Nimonic 95 will show significantly better properties than any of its predecessors. The following table gives a selection of summarized results over a 100-hour test period:

<table>
<thead>
<tr>
<th>Temp. (deg C)</th>
<th>Stress to Rupture in 100 hr (tons/sq in)</th>
<th>Approx. Min. Creep Rate for 100 hr (per cent/ hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>750</td>
<td>22</td>
<td>0.002/0.005</td>
</tr>
<tr>
<td>815</td>
<td>14</td>
<td>0.005</td>
</tr>
<tr>
<td>900</td>
<td>6.5</td>
<td>0.005/0.01</td>
</tr>
<tr>
<td>925</td>
<td>5.5</td>
<td>0.005</td>
</tr>
</tbody>
</table>

Long-term testing is in hand to extend the knowledge of the creep-resistance of the alloy and to determine other properties. In the meantime, Nimonic 95 is being produced by Henry Wiggin and Co., Ltd., and is being used in experimental quantities by engine manufacturers.

THE HON. GEORGE R. WARD, Under-Secretary of State for Air, recently visited the Sperry Gyroscope Company's works at Brentford, Middlesex, where he saw various flight instruments being assembled and tested. He is seen here (left) with Capt. A. V. S. Yates, director of engineering, and (right) W/C. J. C. Bell, sales manager. Later, Mr. Ward—who served as a pilot in the R.A.F., attaining the rank of group captain—flew in the company's demonstration Anson, and gained personal experience of the Zero Reader flight-director.

R.F.D. Results

AT the annual general meeting of the R.F.D. Co., Ltd., due to be held in London today, August 15th, the chairman's address will report further improvements in the company's aviation division, especially in the fields of air/sea rescue equipment and A.A. gunnery training apparatus. Contracts are being fulfilled for the British Government and those of 15 other nations, as well as for numerous air-construction teams.

In order to meet the wishes of the Canadian authorities, a manufacturing, maintenance and repair unit has been established in the Dominion and, under the title of R.F.D. (Canada) Ltd., is already operating.

Instrumental Achievement

AT the annual general meeting of Kelvin and Hughes, Ltd., held in London last week, the chairman (Mr. Ralph Gordon-Smith) referred to the progress made by the company's aviation division, mentioning the provision of flight and navigation instruments provided for the Comet—in particular, the periscopic sextant and high-accuracy turn-and-slip indicator, and the Kelvin and Hughes turn-and-slip indicator had been adopted by the R.A.F. and R.C.A.F., the order in the latter case being obtained against severe American competition.

Europe's Largest Refinery

WITH an increase of more than 50 per cent on its present crude-oil processing capacity of 31 million tons per annum, the Pernis (Rotterdam) refinery will have a "throughput" of 9 million tons a year by the beginning of 1954. It will thus become by far the largest refinery in Europe, including the U.K.

The additional capacity is to come from a new 31 million tons a-year distillation unit on which preliminary construction work has started. This project, estimated to cost £3,000,000, will mark a further phase of the post-war construction programme of the Pernis refinery, which has already cost over £20 million. The plant is one of the Royal Dutch/Shell Group refineries which are strategically located to supply the Western European market in the most economical way.

Anti-dust Respirator

THE finishing of steel castings often results in the dispersal of large quantities of finely divided silica, thus exposing the operator to the danger of silicosis. To combat these offensive particles the Committee on Industrial Health of the British Steel Founders' Association requested Siebe, Gorman and Co., Ltd., of Tolworth, Surrey, to design an efficient respirator which could be worn comfortably for long periods.

The resulting product, known as the "Microfilter," consists of a moulded plastic facepiece and filter-holder to which is attached a sponge-rubber face pad, available in two sizes. The filter itself is a disc of Merino wool impregnated with resin, held between muslin diaphragms and perforated metal plates; rubber non-return valves are used at inlet and outlet. The assembly is held in position over the mouth and nose by a simple elastic harness.