

Correspondence

Industrial Training Act/Civil Air Transport Training Board

THE Society of Licensed Aircraft Engineers and Technologists were, of course, interested to read the letter in the July issue from Messrs. J. M. Rainbow and G. D. Peacock, on the above subject, in which particular attention was drawn to the need for a complete appraisal of the present-day trade structure and its applicability to present-day requirements, and also to cover future developments.

This letter also said "This analysis should be carried out by a team of experts who are not biased and are not actively employed by the company whose work is being examined" and "the present non-related certificates and diplomas should be replaced by a national standard recognised by the Air Registration Board".

In the September issue there are letters from Mr. R. A. Fry and Mr. John H. Cox, on this same subject of Civil Air Transport Training and proper qualifications. Reference is made in both letters to the Associate Membership Examinations of the SLAET.

Here is a ready-made "national standard recognised by the Air Registration Board", and the Society's Central Examining Authority (Chairman, Air Commodore Sir Vernon Brown) have since 1956 kept these examinations in touch with the rapid development in the aviation industry, and are now exploiting the Syllabus more fully to provide for the higher academic levels currently in demand.

Perhaps it may be a little immodest to make a further claim, but why not make use of the facilities of the SLAET to provide "the team of experts who are not biased . . ."

In July 1964, the SLAET advised the Ministry of Labour of its interest in the implications of the Industrial Training Act; it is now waiting to play its part.

H. W. PAYNE, *Associate,*

Secretary General, The Society of Licensed Aircraft Engineers and Technologists.
13th September 1966.

THE letter by Messrs Rainbow and Peacock in the July 1966 issue, entitled "The Industrial Training Act", is permeated by an assumption that the Training Board will have "a strong Corporation and Trade Union flavour" and that this will lead inevitably to an unwieldy training machine teaching an inappropriate and out-of-date syllabus. Based on these assumptions, the letter then proceeds to argue for independent analysis of the training need and a type of training that will lead to a more efficient air transport system in the future. No evidence is offered for either assumption, indeed the operative words in paragraph 3 are "We assume, and are informed" (without mentioning by whom).

In fact, the Board's composition allows for a maximum employers' representation of 38%.

The employees' interests would be served by Trade Union officials, who are more progressive than perhaps the writers realise, and who will doubtless do something to ensure that the training facilities provided for and standards achieved by their members are kept in line with, or perhaps in advance of, the actual requirements for the job they have to do.

The third constituent of the Board, the educationalists, are perhaps the key to the situation, because their terms of reference include not only the impartial responsibility of relating training to real needs, but also the guidance to training establishments as to how this should be achieved, and why.

From the point of view of constitution, therefore, there is some reason to think that a fair cross-section of interests has been provided. One has to recognise, however, that apart from the basic training of an apprentice, follow-up training will be needed at frequent intervals during his career due to the breadth of technical knowledge now involved in aircraft maintenance and the pace at which it is developing. This introduces an element not referred to

in the letter—the progressive retraining of Aircraft Engineers and Technicians with which the Board will be intimately concerned, and which accounts for an equal, if not greater, proportion of total engineering training costs. It is wrong to assume that the Board's activity will follow the same time-scale as the ETB, which so far has devoted its major effort to apprentice training. With relatively small numbers to deal with, the Board for Civil Air Transport may be able to consider the Technician, Supervisory and even Management training levels within a relatively short time.

The basic criticisms of inertia stemming from Corporation "domination" are not well informed. John Cox's excellent letter on "Airline Engineering Apprentice Training" in the September issue does much to dispel this illusion, and furthermore his reference to City and Guilds Courses 171 and 175 provides an opportunity to comment that the appeal for a broader based training for apprentices, made in the letter under review, is already coming into being. Parts I of 171 and 175 are on the way out, and 371 is emerging as a development from these well-tried courses. Its significant features are a strong "operational flavour" while still retaining sufficient attention to basic engineering practice to satisfy the needs of first year apprenticeship, and a coalescence of mechanical and electrical technology and practice in a form which modern aircraft demand. The Syllabus Sub-Committee did have Corporation representatives. And the Advisory Committee, which ratified it, included the Colleges in its formation.

The Airways Corporations have certainly had a say in developments so far. But it is doubtful whether this has had any influence inimical to the production of a Syllabus realistically related to the needs of modern aircraft maintenance. In BEA the post of Engineering Training Manager has been held in turn for a limited period by Senior Managers, who bring to the job an intimate knowledge of the operating needs of Airline maintenance. The present system is largely the creation of two men who are now in charge of BEA's overhaul workshops and aircraft servicing and maintenance respectively. In these present posts, they are incessantly demanding the services of the graduates from the system they helped to create.

It is all very well to say, as Messrs Rainbow and Peacock do, that modern maintenance is by replacement. This is certainly a potted description of a pattern which keeps aircraft in the air, but it begs the whole question of the organisation which is needed to support the technique economically. No airline which does not control its own overhaul and repair circuits will achieve the economy, safety and reliability needed in a large-scale operation. It is our experience and that of all major operators that extensive "repair by rework" is a vital part of such an undertaking. The effective management of the resulting complex requires a steady supply of recruits in appropriate numbers at graduate, technician and trade levels. This is what the Corporations have been developing, the first priority having been given to the technicians, who are now supplemented by the first group of graduates to complete their course.

In planning ahead, it is necessary to think big enough, and this demands development of the whole range of technical and management skills needed to run the transport system of the future, which will be huge by present standards. If it is also to be efficient it must be manned by engineers with the necessary breadth of education and experience to understand the fundamentals of the machines and the system they are controlling and operating.

So perhaps the setting up of yet another forum is not the best move after all. There is enough responsible activity going on to ensure that the Board itself will respond to the real needs of the industry and act in its best interests. Per-

haps the area which could be examined is the traditional trade structure, which in some respects ill-fits the needs of modern aeroplanes. Inertial guidance is all very well for some purposes but should not be adopted as a system for navigating the industry on its future path. In this respect the writers of the original letter have many allies.

K. G. WILKINSON, *Fellow*
Chief Engineer, and C. VAN DER MEULEN
Engineering Training Manager, British European Airways
 26th September 1966

I HAVE read with interest Mr. Fry's letter in the September issue, and I am very glad to see you publishing various views on this terribly vital subject.

I hope that much more thought will be given before the Board is set up, because the fundamental purpose of the letter by Mr. Rainbow and me was to draw attention to the need so to balance the constitution of the Board that it would have the flexibility to arrive at the right decisions.

Mr. Fry's letter is of value, but on two points we disagree:—

(1) We are not certain that the extension of special training colleges in association with a flying school and an avionics school is entirely the best solution. Much of the equipment available at these schools is already obsolete, and we feel that a scheme using the actual facilities of an operating company can be of far more value.

(2) While we agree that the SLAET does have a qualification system, in our opinion it does not fill the bill in establishing an agreed and approved standard.

There is, however, perhaps a case for taking all the existing standards and examining them carefully to see whether some aspects can be found, which will embrace or extend the SLAET qualification system.

26th September 1966

G. D. PEACOCK

A Question of Accurate History

I READ the contribution from Lt.-Col. L. F. R. Fell in the June 1966 issue of the JOURNAL with interest and I found that the penultimate paragraph requires amplification to make it a basis for accurate history.

First, I think it is quite incorrect to write that Richard Fairey persuaded Sir Hugh Trenchard to introduce from the USA the Curtiss D12 engine. Fairey introduced this engine into Britain and had the Fairey Fox designed for it. It was the then outstanding performance of the Fox two-seat day bomber (faster than any contemporary RAF fighter) which caused Trenchard to order 28 to equip one squadron (No. 12) with reserves. I was then sole test pilot to the Fairey Aviation Co Ltd, and I first flew the Fox on 3rd January 1925. Trenchard, accompanied by his staff (Sir Geoffrey Salmond, AMSR; AVM T. I. Webb-Bowen; and others) saw my demonstration of the Fox at Northolt on 28th July 1925 and immediately he placed an order verbally with Fairey for "one squadron of these aircraft".

I believe Col. Fell's wording is merely accidental in tending to give the impression it does; but it was the fact of Trenchard's ordering of the Fox aircraft which introduced the Curtiss D12 into the RAF; the engine, as such, was not introduced by Trenchard; had it been so, it does not follow that the Fox would have been ordered, for other firms would have been invited also to tender to meet a specification for an aircraft powered by the D12. But there was no other such aircraft in Britain, because the Fox was a private venture conceived by Fairey after he had secured the British rights for the Curtiss engine.

Secondly, can Col. Fell give us the dates when he asked Napier and Rolls-Royce to build engines to compete with the Curtiss D12? Was it before or after the appearance

of the Fox that this was done? It is quite impossible to reconstruct the history of this affair correctly unless these dates are known. The RR F prototype engine referred to by Col. Fell was first flown, by me, in a Fox aircraft on 29th August 1927, 25 months after Trenchard ordered the Curtiss-Fox and 32 months after the Fox first flew with the Curtiss motor. Therefore, I have little doubt that the moves to produce a rival British engine referred to by Col. Fell were made *after* Fairey brought the Curtiss engine to Britain, and perhaps after the Fox flew; I think the latter. Will Col. Fell kindly supply the dates?

5th July 1966.

NORMAN MACMILLAN,
Associate Fellow.

I DO NOT think there is any difference of opinion between Wing Cdr. Macmillan and me about the facts which led up to the purchase of a squadron of Fairey Fox aircraft fitted with Curtiss D12 engines. This was a decision made by Sir Hugh Trenchard himself after the occasion mentioned as having taken place on 28th July 1925.

With regard to the second paragraph the Fox was built around the D12 and there was then no British engine that could take its place. We ought to have had a low drag liquid-cooled engine but none was available. At the Air Ministry we were well aware of the requirements and fully understood the pioneer efforts which Fairey was making to meet them. It was well before July 1925 that we tried, but without success, to persuade Napier to produce a twelve-cylinder Vee Lion.

It was, however, *after* the demonstration in July 1925 and Sir Hugh Trenchard's subsequent decision to purchase a squadron of D12 Fox aircraft, that I approached Royce with my request that Rolls-Royce should build an engine, as a private venture, which would rival the D12. This must have been so because the D12 engines from the USA had already begun to be available in England, as the property of the Air Ministry, and therefore I was able to send a D12 to Derby for examination by Rolls-Royce engineers for them to see the kind of engine the Air Ministry required before the design of the Rolls-Royce engine was begun. (This is referred to on p 159 of the Centenary JOURNAL.)

There is no doubt in my mind that it was the advent of the Curtiss D12 into Britain which provided the incentive to produce the Rolls-Royce Kestrel.

4th July 1966.

RUDSTON FELL, *Fellow.*

THE Curtiss engine sent to Rolls-Royce by Colonel Fell must have been supplied to the Air Ministry by the Fairey Aviation Co Ltd, who held sole UK rights for them.

The approach to Rolls-Royce was made not less than 18 months after C. R. Fairey brought his first Curtiss engine to England. It was made not less than 7 months after the Fox first flew, because that was the lapse of time before Sir Hugh Trenchard saw it and ordered it. It is therefore unlikely that Napier was approached until well into 1925.

It appears that no one at the Air Ministry and certainly no one in industry made a move towards low frontal area liquid-cooled engines until after confrontation by the Curtiss D12 in Fairey's hands and fitted in the Fairey Fox private venture day bomber. C. R. Fairey had intended to manufacture the Curtiss D12 engines, but he received no support for this from the Air Ministry and could only import American-made engines.

When the Rolls-Royce Kestrel engine reached initial production, 4½ years *after* Fairey brought his first Curtiss D12 to England, Fairey's hope of entering aero engine manufacture having first been quashed by lack of support, his imports of US-made Curtiss engines had also ceased.

23rd July 1966.

NORMAN MACMILLAN.