

TALKING of HELICOPTERS

Outspoken Views at Helicopter Association Dinner—and more about the Piasecki Lecture

AS already reported, Mr. Frank N. Piasecki read a paper on *Military Aspects of the Transport Helicopter* before the Helicopter Association in London on August 31st. We gave a summary of the lecture last week (page 337), and below is a report on the Association's annual dinner, held at Londonderry House following Mr. Piasecki's address at the Institution of Civil Engineers. Also given below, after the report of the dinner speeches, are notes on the discussion which followed the lecture.

Proposing "The Guests," the president, Mr. J. G. Weir, said that this fifth annual dinner might rank more as a centenary if one judged by the progress which had been made with helicopters since the Association became a corporate body. He welcomed Lord Douglas, the guest of honour, who had done a great deal to help the Association, and Mr. Piasecki and other distinguished members of the American Helicopter Society who were present. Mr. Weir (who has been president for the past two-and-a-half years and is to hand over to Mr. Eric Mensforth) said that he foresaw a period of great expansion and activity during his successor's period of office.

Replying, Lord Douglas (who is chairman of B.E.A.), delighted his audience by departing from any prepared oration and frankly speaking his mind. Development of helicopters was not quick enough, he said. Three-seat accommodation was hopeless as a commercial proposition. He had heard glowing accounts of future methods of linking our closely situated large cities. We needed helicopters very badly: we needed counterparts of Green Line buses, but were told that we could only have them in due course. There was tremendous scope, but there must be quicker development. From the user's point of view, Lord Douglas said, a big, economic helicopter was wanted.

Mr. S. Scott-Hall (Ministry of Supply), toasting "The Association," said that Mr. Piasecki's lecture had once more thrown down America's tremendous challenge in helicopter development. For many years this country had lacked a society where people could get together and discuss helicopters, but from September, 1945, the Association had been formed and had done its job well. Praising the work of Mr. Weir (who had originally brought Señor Cierva to this country) and other officials of the Association, Mr. Scott-Hall said it was also fitting to remember the work of Alan Marsh, who had given his life for all that the occasion stood for. The speaker went on to say that we must have more helicopters, and, as a small country, should pool ideas and do away with selfish competition. The Government would help, and was at present doing its best to foster collaboration.

In his reply to Mr. Scott-Hall's speech, Mr. Peter Masfield (chief executive, B.E.A.) thought it "appropriate for two B.E.A. representatives to do a pincer movement on the Director of Technical Development (Air) of the Ministry of Supply." He paid a tribute to the members of the B.E.A. Experimental Helicopter Unit, and hoped that very soon the "Experimental" would be taken out. He wished the Unit was three times as big, and that its aircraft were ten times the size and had twice the speed. To run services with three-passenger helicopters was like trying to run an

airline with Austers. The Bristol 173 would give Mr. N. E. Rowe and B.E.A. something to work with (in fact, he said, the Bristol 173 will really give Nero something to fiddle with). B.E.A. hoped to pull the 173 out to its elastic limit, and perhaps persuade Bristol to put wings on it. He mentioned that the Piasecki H-16 was now being built to carry 40 passengers. Perhaps now was the time to raise B.E.A.'s sights and ask for even more than 40. He hoped that the ultimate replacement for the Elizabethan, which was to be put into service this week, would be a helicopter. Records showed that all aircraft to be replaced so far had been followed by something larger, so that should give an aim for helicopter development. He visualized roof-to-roof service from the Champs Élysées to Victoria Station. The money for helicopter services must come from big city centres. Employing a telling phrase that he has used before, Mr. Masfield added that for the next few years "it will help if we can ride home on the back of the military camel." Finally, he said that Mr. Piasecki had done a great service in outlining what could be done with rotating-wing aircraft; the fighting Services in this country had, he thought, been slow in this respect. He hoped that there would not be "too much security," for the helicopter needed putting over. He appealed to Mr. Scott-Hall and his aptly named Ministry to "think big."

THE LECTURE DISCUSSED

After the reading of Mr. Piasecki's paper most of the discussion had centred on his choice of the twin-rotor configuration. Replying to these expressions of opinion, the lecturer said he was convinced that for machines of over 6,000 lb a.u.w. this was the most desirable layout; one of its advantages (of particular importance for military application) was the greater c.g. range it made possible. In comparative tests for the U.S. Navy, between single- and double-rotor systems, the latter had proved conclusively superior. For carrying heavy items, such as jeeps and howitzers on a sling, the pendulum effect was less critical and had to a certain extent been overcome by using the two-point suspension rig. The Piasecki 40-seater, the XH-16, was "well on the way," but it was not possible to give any details.

Mr. Piasecki went on to suggest that the number of rotor blades employed should be kept to an absolute minimum; turbine-power associated with tip-jets would reduce the number, and this, he thought, was "the coming form" of propulsion.

Questioned as to the practicability of the inflatable-bag type of undercarriage for emergency use on water, the lecturer said that about 500ft of height was needed in which to inflate the rubber pontoons sufficiently with CO₂ bottles. On the general subject of emergency landings, and in particular on those resulting from enemy action, he pointed out that in Korea, so far, no helicopter had yet been downed by gunfire damage to its rotors. On test, one twin-rotor machine had actually made a landing from 200ft after a rotor blade had come adrift completely. There had been many instances, he said, in which blades had been holed but this had made relatively little difference to performance.

On the general outlook for helicopters, Mr. Piasecki thought that machines of 250,000lb a.u.w. were not impossible. For such aircraft he envisaged a shaft-drive system to four or more rotors.

THE BATTLE OF BRITAIN FLY-PAST

THE 280 aircraft which, as reported in *Flight* of August 24th, are taking part in this year's Battle of Britain fly-past next Saturday, September 15th, will rendezvous over Southend before making the final approach to Whitehall. As in the past, they will be led by a single Battle of Britain Hurricane, which is due to pass over the Air Ministry at 11 a.m. The approach to Central London from Southend will be via Stanford-le-Hope, Rainham Marshes, Royal Albert Dock and West India Dock, and the 11 formations will be constituted as follow:—

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| (1) 1 Hurricane, 3 Sunderlands | (7) 48 Meteors |
| (2) 30 Lincolns | (8) 48 Meteors |
| (3) 3 Lancasters, 6 Lincolns | (9) 24 Meteors |
| (4) 30 Washingtons | (10) 16 U.S.A.F. F-84s |
| (5) 8 Sea Hornets | (11) 16 U.S.A.F. F-86s |
| (6) 48 Vampires | |

On their way to the rendezvous at Southend the 11 formations will pass separately over the provincial towns shown in the following list; in each case the number in parenthesis indicates the formation as given above.

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| (1) Calshot, Dover, Ramsgate
(Sunderlands only) | (6) Brighton, Rye, Canterbury |
| (2) Orfordness | (7) Orfordness |
| (3) Portsmouth, Deal | (8) Hastings, Canterbury |
| (4) Lowestoft, Orfordness | (9) Ipswich, Clacton |
| (5) Worthing, Folkestone, Ramsgate | (10) Manston |
| | (11) Felixstowe |

After the fly-past, the formations will disperse over West London and selected aircraft will then pass over the following towns: High Wycombe, Bicester, Leamington (30 Lincolns), Reading and Swindon (3 Lancasters, 6 Lincolns), Aylesbury and Northampton (30 Washingtons); Working and Littlehampton (8 Sea Hornets); Wokingham and Weybridge (Vampire formations), Watford (Meteor formations).

The Meteors and Vampires will represent Fighter Command; Lincolns and Washingtons, Bomber Command; the Sunderlands, Coastal Command; three Lancasters and six Lincolns, Flying Training Command; and the eight Sea Hornets, Naval Aviation.

As usual, the aircraft will fly at between 1,500 and 2,000 ft, with the formations finally closing to one-minute intervals.