

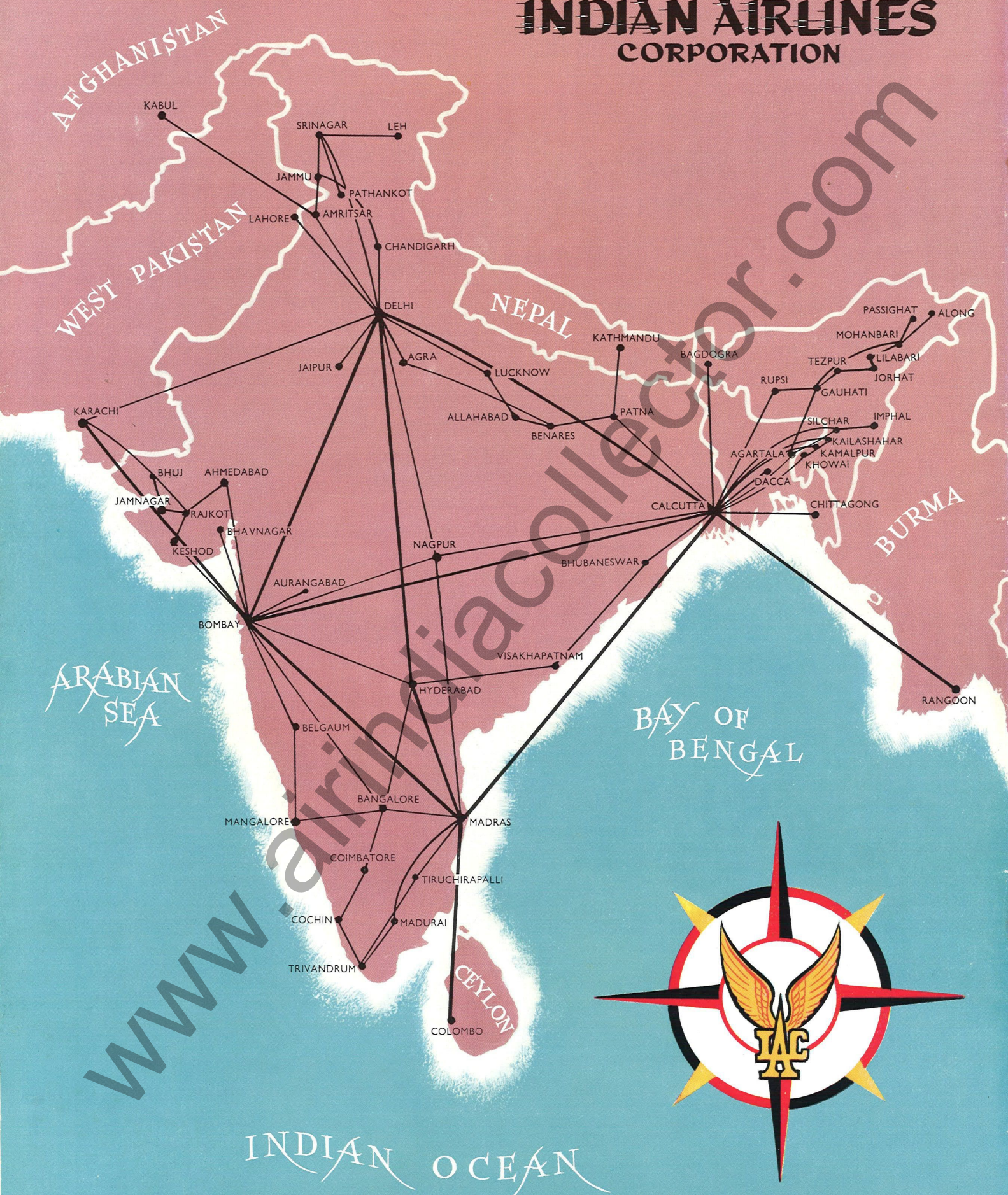


AIR WORLD

VOLUME 11 NUMBER 4



INDIAN AIRLINES CORPORATION





(Above) The 1959 Piper Apache.

(Cover) Indian Airlines' stewardess.
(Colour transparency by John Stroud.)



AIR WORLD

Edited by Leonard Bridgman

VOLUME 11 NUMBER 4 JANUARY/FEBRUARY 1959

Material contained in this issue may be reproduced in whole or in part, except where a copyright source is indicated, provided that acknowledgment is made to the "Esso Air World."

CONTENTS

<i>Indian Airlines.</i> By John Stroud	...	...	...	...	86
<i>Design Considerations of the DC-8 Fuel System</i> By M. A. O'Connor and W. B. King, Douglas Aircraft Company, Inc.	...	...	...	...	91
<i>"Goldminers' Airline"</i> The Story of the Wenela Air Services	...	...	...	...	100
<i>Building a Turbi.</i> By John A. Musto	...	...	...	...	104
<i>The Dalto Simulator</i>	...	...	...	...	107
<i>Bogotá International Airport</i>	...	...	...	...	108
<i>Canada's Golden Anniversary of Flight</i>	...	...	...	...	111

Printed in England by Samson Clark & Co. Ltd.



AIR WORLD

is published for private circulation
in the interests of
Esso Aviation Marketing Affiliates
for the

Esso Export Corporation,
60 West 49th Street,
New York 20, N.Y.



◀ Prime Minister Pandit Nehru bringing Indian Airlines Corporation into being in Delhi on August 1, 1953. He is seen pressing the button which unfurled the new corporation's flag.

IN October last, senior executives of eighty-six of the World's airlines gathered in New Delhi to attend the 14th Annual General Meeting of the International Air Transport Association, the first meeting of its kind to be held not only in India but in any country in Asia. This important gathering enabled Indian Airlines Corporation, one of IATA's younger members, to establish closer contact with other airline operators, and at the same time provided an opportunity for visiting international airline executives to obtain some idea of the problems and the achievements of one of the World's largest nationalised internal airlines.

The growth of Indian Airlines is synonymous with the development schemes of the Government of India and all its plans for expansion are geared to the country's

INDIAN AIRLINES

By John Stroud

needs as laid down in the series of Five-Year Plans now being implemented. In the formulation of its plans to provide India with the air service it needs, Indian Airlines Corporation has maintained two important aims in view: to build up a route structure best calculated to serve commerce, industry and tourism, and to provide the best possible service in terms of speed, comfort and convenience.

As recently as October 15, 1958, Indian Airlines introduced the latest revision of its route pattern which not only included a number of new services but also the readjustment of timings of existing services to eliminate as much as possible waiting time for onward connections.

The introduction of this latest route pattern marks the achievement of yet another objective of nationalisation. Behind this achievement lies the story of events which led

to nationalisation and the concerted effort put forward over the five years since I.A.C. came into being.

Civil air transport in India dates back to October, 1932, when Mr. J. R. D. Tata, who is, to-day, Chairman of Air India International, a Director of Indian Airlines Corporation and President for 1958-59 of the International Air Transport Association, piloted a D.H. Puss Moth from Karachi to Bombay to inaugurate the first Indian commercial air service — to provide an air mail connection with the Imperial Airways trunk route to the United Kingdom. From that pioneering venture grew the Tata Airline which, in 1946, became Air-India, the domestic operator whose offshoot Air-India International is to-day a major World airline of high repute.

Tata's original route was extended south from Bombay to Madras and, later, to Colombo. In 1933 a second

One of the fleet of ten ▶ Vickers Viscounts of Indian Airlines. The name of the Corporation is displayed in Hindi on the starboard side of the fuselage and appears in English on the port side.





◀ The nightly scene at Nagpur, the interchange point for overnight mail to and from Bombay, Delhi, Calcutta and Madras. For this service Nagpur is provided with Calvert line and bar high-intensity approach lighting.

operator, Indian National Airways, started a service between Calcutta and Rangoon and in the following year began operating between Karachi and Lahore. The young Indian air transport industry was soon to be given a chance to expand under the stimulus provided by the introduction of the Empire Air Mail Scheme, under which all first-class mail was carried by air without surcharge.

With the outbreak of war in 1939 the situation altered drastically. In spite of many difficulties, both concerns continued operations, but now with the emphasis on national service. To assist them to support the war effort, their fleets were strengthened with lease-lend equipment, with the result that by the end of the war the air services in India were being operated with advanced types of aircraft and linked up most of the important administrative centres.

The availability of surplus transport aircraft after the war provided opportunities for the exploitation of new routes and a number of new companies came into being. Though some of these companies did useful pioneering work in developing traffic there was a considerable amount of wasteful competition and an almost complete lack of co-ordination in route planning. The resources of many of the companies were inadequate, and it became progressively clear that the industry's operations would not only require to be subsidised in an ever-increasing measure, but that few if any of the individual operators would be able to raise sufficient capital to finance urgent prospective development.

In the end the whole internal air transport system became so unsatisfactory that the Government of India set up a committee under the chairmanship of a Bombay High Court judge, to examine and report on the situation. The committee found that the only solution

to the problem was a reduction in the number of operators but it expressed an opinion that nationalisation was not advisable. Attempts to bring about amalgamations of groups of airlines, however, met with so much opposition that the Government had little choice but to take extreme measures, and in 1952 it decided that all Indian air services, both domestic and international, should be nationalised.

The Air Corporations Act, 1953, was passed by Parliament and received Presidential assent on May 28, 1953. On June 15, 1953, two airline corporations came into formal existence and both started operations under their new status on August 1 of that year. These two corporations were Air-India International, with responsibility for the operation of all Indian long-distance overseas routes; and the Indian Airlines Corporation, which was to maintain all-Indian domestic services together with certain short-stage routes to neighbouring countries.

This momentous change in the pattern of Indian air transport brought many problems, but of the two corporations, Air-India International had the easier task. Already in existence since 1948, A.I.I. had been owned 51 per cent. by Air-India, Ltd., which operated a domestic route system, and 49 per cent. by the Government. When it became a State corporation its route pattern and its fleet remained unchanged and, generally speaking, its management and staff also remained unaltered.



Preparing a Viscount for departure on the ▶ Palam Airport, Delhi.

To create airmindedness among the rising generation, Indian Airlines organises special visits and flights for students and school-children. The group shown has just completed a local demonstration flight in a DC-3.

Passengers boarding a night airmail DC-4 at Nagpur.



The formation of the Indian Airlines Corporation by the taking over and merging of the eight existing private companies: Air-India, Ltd.; Airways (India), Ltd.; Air Services of India, Ltd.; Bharat Airways, Ltd.; Deccan Airways, Ltd.; Himalayan Aviation, Ltd.; Indian National Airways, Ltd. and Kalinga Airlines — brought in its wake a long series of administrative and operational problems. Consequently, in its first year the energies of the new corporation were devoted to working out suitable administrative processes as well as operational plans. Further, payment of compensation to the former airlines was the subject of protracted negotiations.

The corporation had earlier appointed a number of committees to study in detail the problems concerning integration and rationalisation of the airlines. The route pattern inherited from the former operators had become outmoded and required considerable revision. A re-organisation of operational and engineering bases, necessary in any case, became all the more urgent with the transfer of Air-India's workshops at Bombay to Air-India International.

On the operational side, while the amount of flying grew there were serious depletions in the cadre of trained pilots, largely because of the demand for their services in the sister corporation which was in a similar phase of expansion. This resulted in a shortage of captains which had to be made good speedily. Training had been considerably neglected in the past as the equipment needed for it was expensive and the private operators had not been able to afford much non-revenue flying.

In the engineering branch the problem of reorganisation was even more difficult and complicated. The main workshops taken over by I.A.C. were situated in Delhi, Calcutta, Bombay and Hyderabad. With the transfer of the Bombay shops to A.I.I. the workload had to be re-distributed and new workshop capacity built and skilled labour trained for the purpose at Delhi and Hyderabad.

On the traffic side, booking offices had to be amalgamated and premises renovated. The whole system of booking agents had to be revised and new inter-line agreements with foreign operators negotiated. All these measures, however, hinged upon early financial integration as a first step, without which administrative re-organisation could not keep pace. New methods of book-keeping and record maintenance were the first to be rationalised and introduced, after which uniform and detailed procedures for audit, costing and statistics were evolved, and it was only at this stage that the management could deal with the problems bearing on the economy of administration.

In the meantime, the air services had to go on running. On its formation I.A.C. inherited a fleet of 74 DC-3's, three DC-4's and 12 Vickers Vikings, plus ten small single- and twin-engined aircraft of various types, and a route system which, at the outset, was carried on by a Lines system within the corporation. Line No. 1 was the old Airways (India) system; No. 2 Bharat Airways; No. 3 Himalayan and Kalinga; No. 4 Indian National; No. 5 Deccan; No. 6 Air-India; and No. 7 Air Services of India. A few route changes were made to eliminate duplication, while Bharat's route to Singapore was transferred to Air-India International. The miscellaneous collection of small aircraft was disposed of, and an order was placed for a fleet of eight D.H. Herons.

In the second year, following nationalisation, plans for

consolidation began to take shape. The Lines system of administration was reorganised and replaced by an integrated pattern with unified control administered from new airline headquarters in New Delhi. The entire operational field was divided into three Areas, each under an area manager, and with their new bases at Calcutta, Delhi and Bombay. The route pattern was revised and the standards of service were also improved and rationalised, and by the end of the year one of the main objectives of nationalisation — to provide the air traveller with a uniform standard of service — had been achieved.

In 1954-55, its first full financial year, I.A.C. carried 477,583 passengers. This compares with the 287,122 passengers carried between August, 1953, and March, 1954. Other events of the year were the opening of a number of new routes and the taking over of the operations of Air Nepal.

The first outward evidence of the Corporation's already considered plans to modernise its fleet was the announcement in July, 1955, of the placing of an order for five Vickers Viscount 768 turboprop airliners. Also in 1955, I.A.C. put into service eight D.H. Herons and three additional DC-4's, and introduced an intensive system of training to improve the standards of pilots and air crews. As a result of these measures the aircraft annual utilisation rate went up from 1,378 hours in 1954-55 to 1,405 in 1955-56.

As the Corporation entered its fourth year it emerged from a stage of consolidation to one of expansion. To supplement its fleet a repeat order for five Viscount 768's was placed in September, 1956. The decision to introduce Viscounts on all its trunk routes necessitated the setting-up of a comprehensive training programme for both operational and engineering staffs. Arrangements were made with the manufacturers in the United Kingdom as well as with other Viscount operators in Europe for training pilots, engineers and ground staff. Forty-one persons from a number of representative categories besides 30 pilots were selected for training abroad. Simultaneously, arrangements were made for the setting up of a Viscount maintenance dock in Delhi, while a scheme was drawn up whereby those trained abroad would conduct further training classes in Delhi.

August 15, 1957, was a significant date in the history

of the Corporation for it was on that day that the first I. A. C. Viscount was formally accepted by Smt. Vijayalakshmi Pandit, the Indian High Commissioner in London. The aircraft was ferried to India and after a series of proving flights was put into service on the Delhi-Calcutta-Rangoon route on October 10. This marked the entry of I.A.C. into the Gas-turbine Age. Subsequently, Viscounts were introduced on the Delhi-Bombay, Bombay-Karachi, Bombay-Madras-Colombo, Bombay-Calcutta, Delhi-Madras and Madras-Calcutta routes.

It is significant that in 1956-57 the Corporation set up new records of business. The number of passengers carried rose to 571,106, as compared with 500,363 for the previous year. Increased earnings, mainly due to the Night Mail services, registered a record 130.0 lakhs of rupees.

The Night Mail service, apart from its primary function, also attracts considerable passenger traffic because it offers the dual advantages of reduced fares and more stable air for comfortable travel. DC-3's were originally used, but in November, 1955, I.A.C. put DC-4's on the service, while in 1958 Viscounts began to replace the DC-4's.

Every night the year round aircraft leave Bombay,



▲ Cargo is regularly carried to almost every part of India by Indian Airlines. Items vary from flowers, foodstuffs and vaccines to machinery and livestock.



◀ A typical scene in Assam where Indian Airlines handles a very heavy freight traffic.



◀ One of Indian Airlines' Night Airmail DC-4's undergoing a routine check.

Delhi, Calcutta and Madras, each carrying the late postings of mail from those cities. All four aircraft are scheduled to meet at Nagpur, the approximate geographical centre of India, between 2 and 2.30 a.m., where the mail loads are transferred to the appropriate aircraft which then return to their starting points with their fresh loads of mail for delivery in the four major cities by first post the following morning. The whole operation is completed between 6 and 7 a.m. so that mails for up country points can be forwarded by local air services for delivery later in the same day.

In the first six months of 1958 the Night Air Mail Services carried 2,146,314 pounds of mail, 1,552,686 pounds of cargo and 38,741 passengers. This represented a nightly average of 11,858 pounds of mail, 8,711 pounds of cargo and 214 passengers.

The Nagpur handling of the night mail service is a model of efficiency and is reminiscent of a military operation. The four aircraft are on the ground for a total of only 1½ hours, during which time the mail bags are unloaded, sorted for destination and reloaded, and all the aircraft are refueled.

In 1957-58 I.A.C. was able to record figures that showed that in five years its traffic and its total revenue had been more than doubled. The number of passengers carried was 599,573, while the total revenue earned amounted to 926 lakhs of rupees.

The delivery of all ten Viscounts was completed in June, 1958. Since the introduction of the Viscount on I.A.C. routes in October, 1957, the latest figures available at the time of writing show that these turboprop-powered aircraft have operated at an average revenue load factor of 67 per cent. In ten months they carried nearly 134,000 passengers and earned over 263 lakhs of rupees (approximately £2 million).

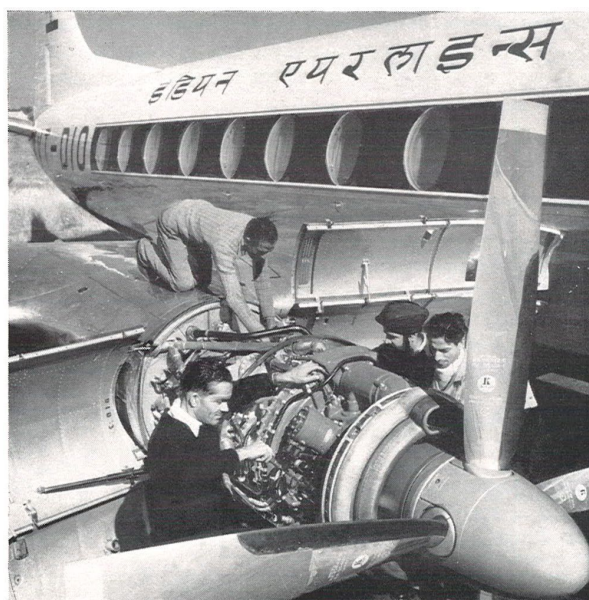
The increased traffic generated by Viscounts is such that, to meet public demand, the extension of the Viscount sectors is now an urgent problem. Additional frequencies on some routes is also under consideration.

In addition to its normal operations I.A.C. plays an important part in providing essential communications between Calcutta and Assam which, because of its geographical isolation, is almost completely dependent

factor in the economic life of the people.

The formidable task of merging eight different airlines into a single entity is now nearly complete. In five short years an integrated route pattern has been established, a sound administrative framework has been built up, procedural rules have been regularised, fares rationalised, flight amenities improved and modern aircraft introduced into service. And it is a matter of gratification that the entire personnel of the Corporation, from the highest to the lowest, is Indian, and that already I.A.C. has been able to render technical assistance to neighbouring countries.

To-day, with an unduplicated route mileage of 25,000, a fleet of 100 aircraft and a total staff of about 9,500, Indian Airlines Corporation can take its place as one of the largest domestic airlines in the World.



▲ Dart engine inspection on an Indian Airlines' Viscount. By mid-1958 Viscounts were operating to an annual utilisation figure of 2,600 hours, which will rise to 3,000 when the latest Viscount route pattern is fully implemented.