# The Viscount and You

INDIAN AIRLINES CORPORATION

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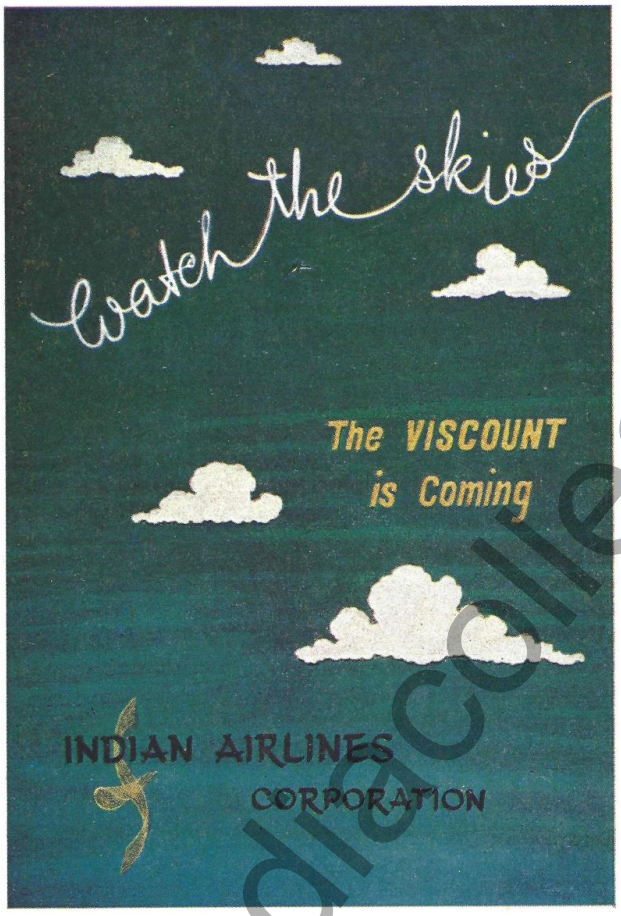



The Viscount campaign of the Indian Airlines Corporation opens with this poster. It is in the way of a "teaser" designed to arouse curiosity. People will ask what is the Viscount ? To answer their questions this handbook has been prepared. It provides the basic information about the IAC Viscount which brings the jet age to India.

# Why

The order on behalf of the Indian Airlines Corporation for the first five Viscounts is signed by the Chairman, Mr. Shankar Prasada. Left: Mr. W.A. Hemmant, Chairman of Vickers India, representing the manufacturers Vickers-Armstrongs, Ltd.; right: Mr. Brij Narain, then Financial Comptroller of I.A.C.

ALMOST from the day that the private companies operating the domestic services in India were amalgamated to form the Indian Airlines Corporation it was realised that modernization and fleet replacement would be necessary to operate the services efficiently and economically. As soon as the more urgent tasks of integrating the lines and consolidating I.A.C. as a single airline operating all domestic services in the country had been tackled, the question of fleet replacement was taken up.

Considering the problems, it was not an easy task for the Board of Directors to select the right type of aircraft that was needed for the first major fleet replacement. First, it had to be borne in mind that I.A.C. operates only medium and short-haul services. Secondly, economy of operation and fuel consumption had to be considered. Thirdly, there was the question of the comparative cost of the aircraft and spares and maintenance; related to these was the problem of exchange, a long range one, if not immediate. And above all, in a country which is not still very air-minded, an airline has to think always in terms of an aircraft which can stimulate the imagination of the people and possess outstanding passenger appeal.

A number of medium-range aircraft which could be delivered within the dates

# the Viscount

specified were examined. I.A.C. engineers and operations staff checked their performances in detail; Traffic looked into their records to see if they would suit I.A.C. services; Finance analysed costs—initial purchase prices, operational and maintenance costs. After collecting the reports from every department and studying expert advice tendered by those who had experience in operating medium-range aircraft, the field was reduced to two: One a conventional piston-driven two-engined aircraft and the other a four-engined jet-powered, propeller driven aircraft. Their performance figures were much the same. The main factors which counted in selecting finally the Vickers' Viscount were: (1) It had four propeller turbine engines, which represent greater safety and reliability. The Viscount can fly on any two of its four engines and the risks due to engine failure at take-off are reduced to a minimum. (2) It operates on kerosene available in the country—which meant considerable saving in foreign exchange. Kerosene, being a low-volatility fuel, is also considered safer than high octane aviation petrol. (3) Payment was to be made in sterling which is a currency more easily available to India than dollars. (4) Being on the threshold of the jet age, it was wise to introduce a "turbo-prop", as the jet-powered, propeller-driven engines of the Viscount are popularly called. It would appeal to the imagination of the people to know that I.A.C. was not too tardy in bringing the jet age to India. (5) With two such illustrious names in the field of aircraft industry as Vickers-Armstrongs, who manufacture the plane, and Rolls-Royce, who make the Dart engines, there would be a feeling of greater reliability. (6) The superior passenger appeal of the Viscount—thanks to the propeller turbine combination which is largely responsible for the smooth flying characteristics and remarkable lack of noise and vibration, resulting in less fatigue to passengers and crew and increased life of aircraft structure. (7) The record of the Viscount as a medium-range airliner which has proved its merit all over the world. Particularly convincing is the success with American domestic airlines which have bought it in large numbers.

The performance of the Viscount speaks for itself. Its unrivalled record no doubt is a tribute to its trouble-free operation, its low break-even load factor, its high utilisation and, of course, its passenger appeal. Full use is being made of the chance offered by the Viscount to make Indian Airlines a successful and popular utility concern.

A medium range low wing monoplane powered by four Rolls-Royce Dart engines, the Viscount is manufactured in Weybridge, Surrey, England by the aircraft division of Vickers-Armstrongs, Limited. Aerodynamically its airframe is much cleaner than most current designs largely because the frontal area presented by the Dart engine is much smaller.

The Viscount 768 ordered by I.A.C. has a fuselage length of 81 feet 2 inches, wing span of nearly 94 feet and a height of 26 feet 9 inches.

The cabin has accommodation for 44 passengers and two hostesses. The forward baggage compartment is separated from the main cabin by two toilet compartments. The buffet is directly across the aisle from the rear cabin door.

An all metal stressed skin construction of aluminium alloy is employed throughout in the building of the principal airframe components ; all surfaces are metal covered.

The landing gear is a fully retractable tricycle type, incorporating six wheels. There are two wheels on each main gear and two on the steerable nose wheel. All gears are fully enclosed in the retracted position. Hydraulic power is used for gear retraction, nose wheel steering and break operation.

The Dart engines are equipped with full feathering, non-reversing four blade Rotal propellers. The propeller blades and spinners incorporate electrical deicing heater elements.

The flight compartment consists of crew accommodation for the captain and first officer and a folding "jump seat" for a third crew member.

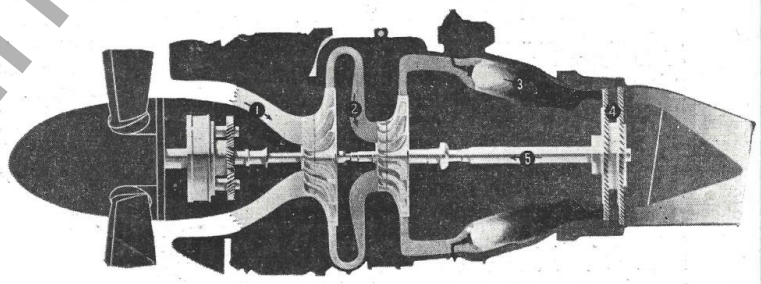

# the I.A.C Viscount

# Viscount brings jet age to India

PISTON engines which largely power the airliners operating domestic and international routes have played a great innings. Their rapid development has popularised flying as a safe, convenient and speedy mode of travel. Their role in establishing civil aviation can never be minimised. Yet, getting bigger and better for the last 20 years, they are as powerful and perfect today as they are ever likely to be. In other words, they have reached the zenith of their development and now cannot improve very greatly their speed, range, payload or passenger appeal. The future belongs to the jet-powered aircraft. For international airlines operating long stages the time for the switchover is not far distant, but for medium range operation the pure jet has not reached that stage of development when one has to start thinking in terms of an imminent change. For domestic airlines the current answer is the "turbo-prop".

A pure jet engine is strictly a gas-turbine engine producing a jet of hot gas, which moves the aircraft forward by reaction. A turbo-prop is similarly a gas turbine engine which uses the hot gas, not primarily to produce a jet at the back, but to drive a propeller at the front.

Briefly, the working system is this : Air is drawn in at the front of the engine, compressed by two spinning fans, and passed into combustion chambers set round the engine. Here the air is heated by mixing it with kerosene and burning it. Under heating it expands and is discharged out of the chambers with tremendous force on to the turbine, which is a large wheel




Operating Cycle : (1) Air is drawn into the engine through an annular air intake. (2) Air is directed to a two-stage centrifugal compressor. (3) This compressed air is then forced to seven straight-flow combustion chambers where it is mixed with low volatile kerosene and ignited. (4) The tremendous energy created drives a two-stage axial-flow turbine. (5) The turbine power is transmitted by a shaft to drive the engine compressor and then through a high ratio reduction gear to drive the propeller.

The salient features of the Viscount are explained to a group of newspapermen visiting the IAC workshops in Delhi.

with blades set round its rim. The air passing through the blades spins the wheel like a wind mill. The wheel turns a shaft running through the centre of the engine to the front where, through a reduction gear, it drives the propeller. On the way, the shaft also spins the compressor "fans" which both suck the air in and compress it.

The engine thus achieves a complete cycle of operation, giving the ideal of rotary motion and continuous combustion. There are no moving pistons or intermittent explosions here, to shake and roar. Only the smooth hum of the spinning turbine, with a slight rush from the exhaust gases which produce a small but useful amount of jet thrust after they have passed the turbine, to augment the power of the propeller. In the case of the Dart this small jet adds the equivalent of 180 h.p. to the 1,600 h.p. developed to drive the propeller.

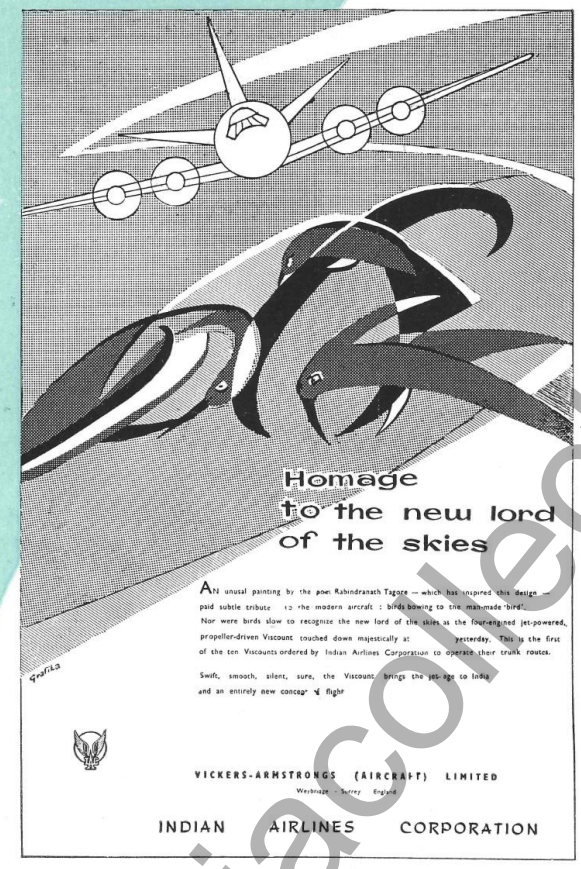
The advantages of the gas turbine over the piston engine, then, can be listed as follows : high power for low weight and cheaper fuel, low maintenance cost, long life, and that almost complete absence of vibration and noise to which Viscount passengers of thirty airlines throughout the world have become accustomed.

The point of adding a propeller—which is still the most efficient form of moving an aircraft—and making the gas-turbine the "turbo-prop", is to achieve greater efficiency, with savings in fuel and cost, while retaining all the key advantages of the gas turbine itself. This efficiency is best obtained on medium-haul routes which are too costly to fly with a pure jet aircraft, with its need to climb to a great height and stay there for long distances to be economical.

To the Rolls-Royce Dart turbo-prop engines—the first ever to power a civil aircraft—goes the larger credit of the Viscount's success, its profit and popularity. And it is in further development of the Dart that the Viscount finds its progress and improvement.

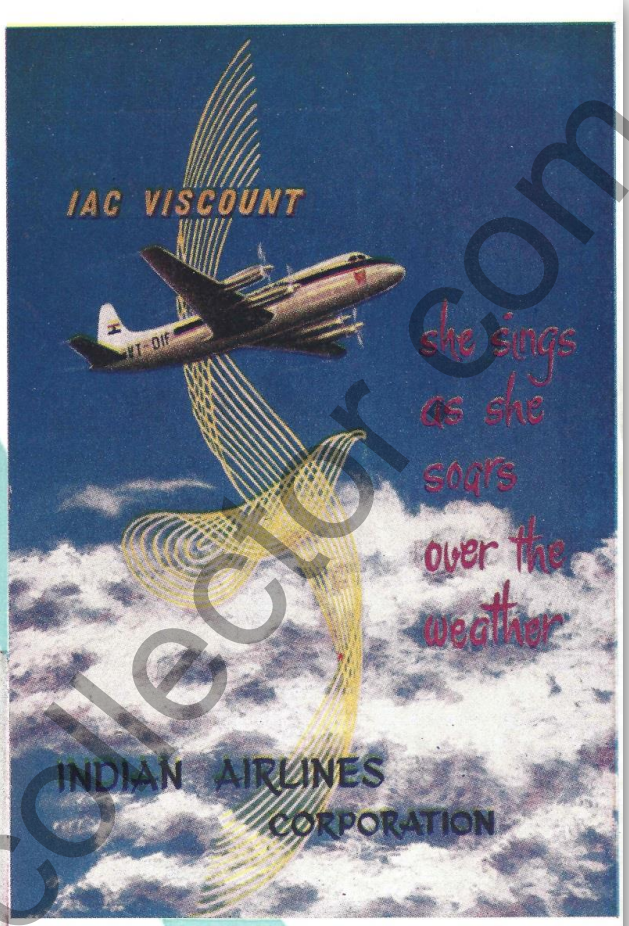
Efficiency, power, fuel consumption and overhaul life can all be expected to improve continuously for a long time to come, bringing lower costs and more profit to the Viscount operator. By its record, the Dart is emphasising ever more strongly the part the turbo-prop is certain to play in the future of civil aviation.

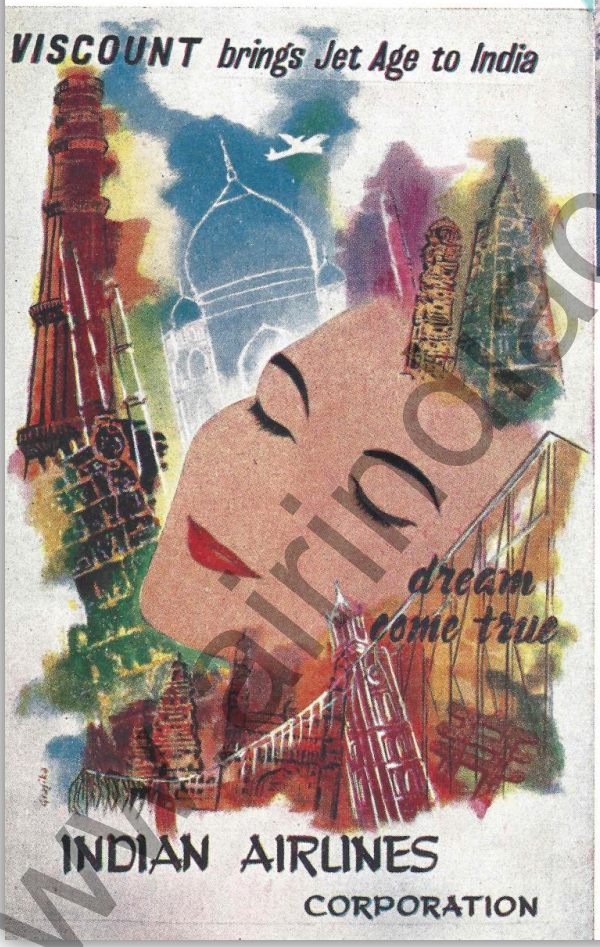
# advertising publicity and sales promotion



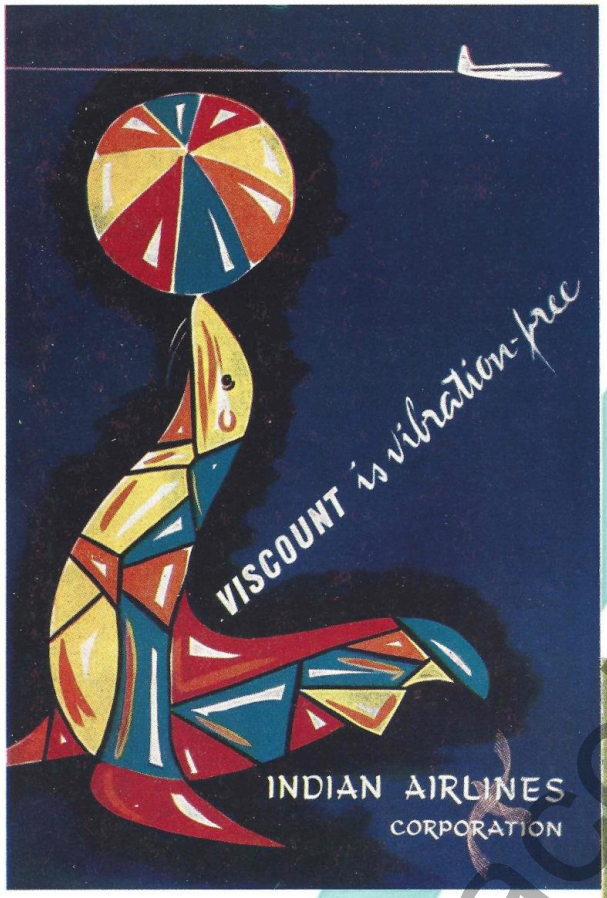

The Minister for Civil Aviation, Professor Humayun Kabir, is shown Viscount posters at IAC Headquarters.

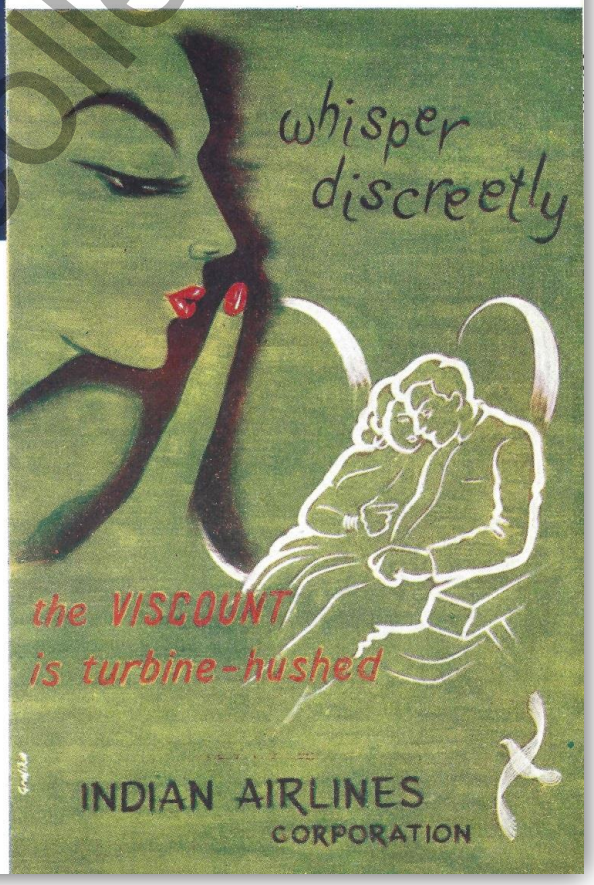
IN a country of vast distances where industrial and commercial centres are scattered as much as a thousand to fifteen hundred miles apart, there is an enormous number of potential air-travellers. The businessman, the executive, the tourist, the man on a short holiday—all appreciate the value of saving time. Yet only a small percentage of them travel by air. The introduction of the Viscount should induce many people to change their travel habits.



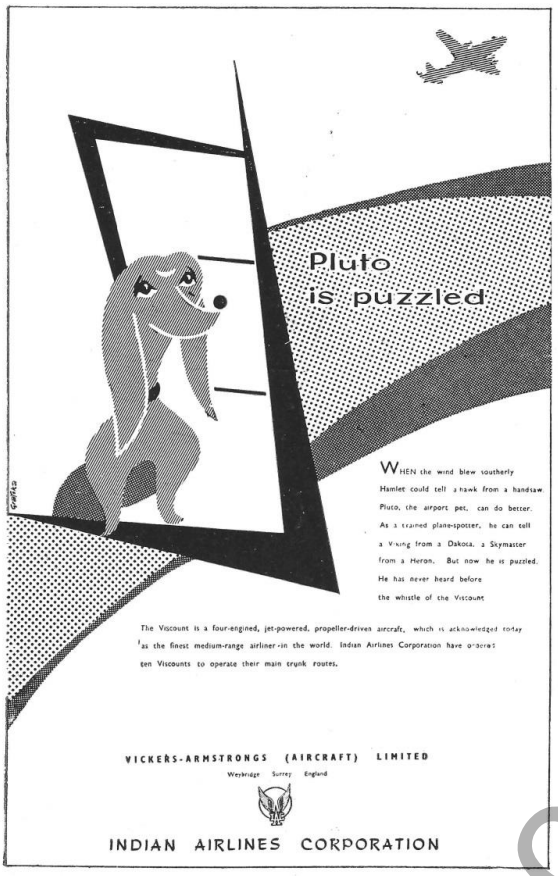




Viscount




# Posters




Whether through direct mail, visual, publicity, Press advertising or editorial publicity through Press releases and articles and photographs in newspapers and magazines, our Viscount publicity in the first year necessarily has been carefully phased, and at the same time an attempt has been made to achieve cumulative effect by reiteration with variations through different media.

Hitched to the key theme of "the Viscount brings the jet age to India", our entire publicity campaign is being phased to meet the needs of distinct periods. All along we are keeping two angles in view : first it is the I.A.C. Viscount we are publicising and, secondly, that with all its advantages and passenger appeal, the most significant fact about the Viscount is that it brings the jet age to India.

Besides this basic handbook on the Viscount entitled "The Viscount and You" we are producing four folders beginning with the attractive introductory folder now being distributed.

To reinforce the effect of the folders and the brochure and at the same time to focus attention on our visual publicity and our Press advertising, we are distributing a series of six blotters, one every month, on the same theme as our posters.

For route publicity we have produced this year a number of folders and a map brochure which have been widely distributed. We also have a brochure on the hill stations of India giving descriptive data and details of air connections. A similar brochure on the outposts of the I.A.C., three of which—Rangoon, Colombo and Karachi—will be served by the Viscounts, is being planned.

We have prepared for release according to an appropriate schedule eight posters, boldly and distinctively designed to tie-up with our direct mail and Press advertising. For window display we are having show-cards and cut-outs emphasising the passenger appeal of the Viscount.

Press advertising will start with a "teaser" campaign to work up interest in the new aircraft. Our main Viscount campaign opens with a "splash" on the day the first service is inaugurated. Coupled with appropriate route publicity, the series on passenger appeal will continue till all our Viscounts are in operation.

The angles of presentation and techniques are being varied in the different series of advertisements. A fine plane with a fine record, the Viscount does not require any stunts to put it across, but different approaches are required for the different phases of publicity. For example, the "teaser" campaign—without being frivolous—is enlivened with a light touch ; the passenger appeal series is treated in an intimate personalised manner ; the announcement advertisements are being given dramatic appeal.

# why is the Viscount such a success

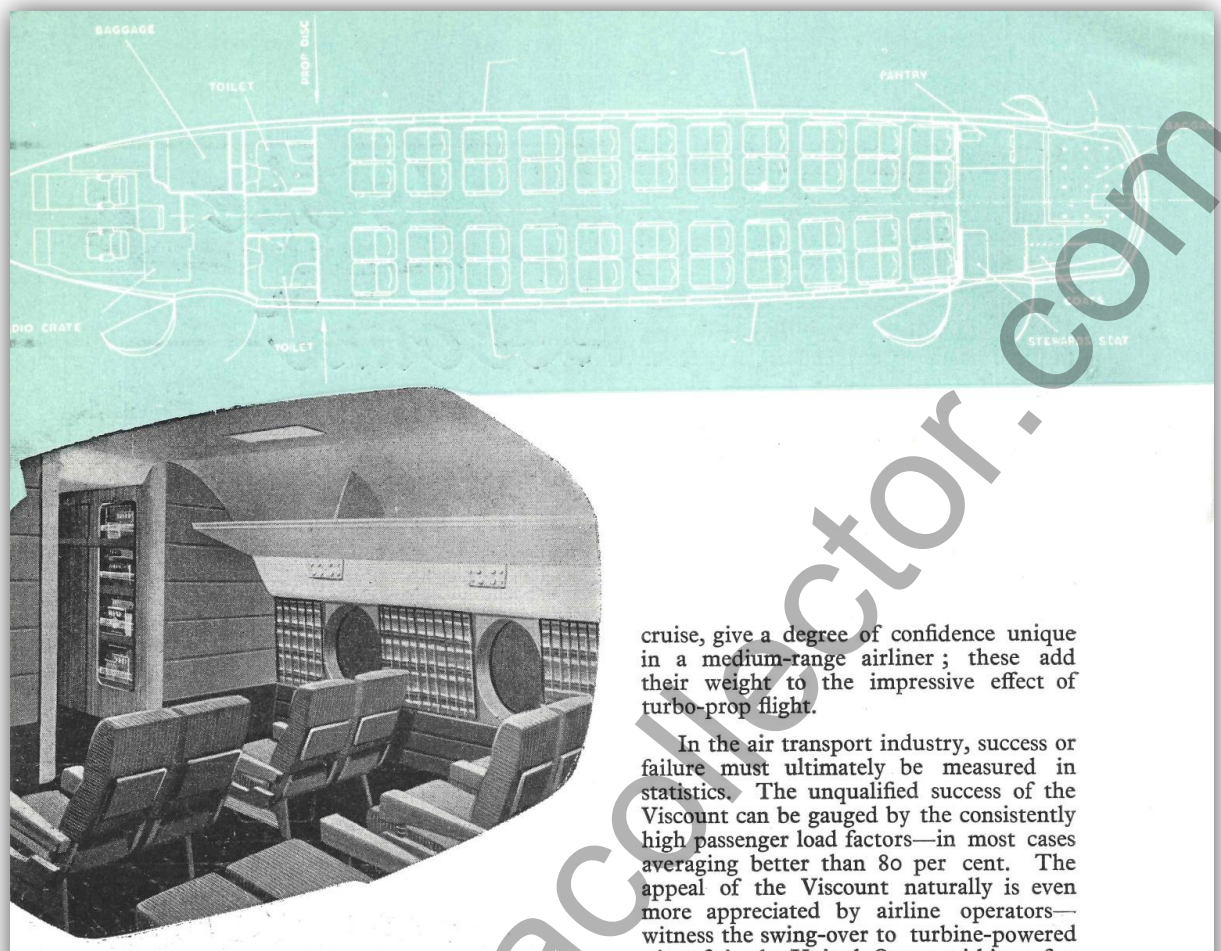
THE Viscount comes to India with over half a million hours in passenger service. The world's first turbo-prop airliner, it first went into service in 1950 and since then 400 Viscounts have been delivered to thirty airlines. It has been the experience of all of them that when Viscounts are introduced traffic automatically increases. They certainly seem to have made a tremendous impression on the air travelling public in both Europe and America.

What is this "passenger appeal"—the reason behind the swing-over of traffic in favour of a Viscount service? It is not enough to say that it is the novelty factor of the introduction of turbo-prop transport. This is no novelty, but an important new—almost a revolutionary—step, bringing great benefits in comfort, safety and efficiency to air transport.

Undoubtedly one of the chief benefits is speed. A cruising speed of 325 m.p.h. makes the Viscount the fastest airliner in its class, and gives it just that edge over other medium-range airliners that operators welcome and passengers appreciate.

But speed is not the only traffic-winning virtue. Probably the most important feature from this point of view is the remarkable lack of noise and vibration in the Viscount, stemming from the smooth-as-silk rotary action of the Rolls-Royce Dart turbo-prop engines. Without question these have taken the rattle and bump out of flying. You can balance a coin on edge throughout the flight, you can talk in whispers—above all you can relax, sleep if you want to, and emerge as fresh at the end of the flight as you were at the beginning.

Added to this, and closely related to it is the fact that the Viscount is fully pressurised to cruise at heights of over 25,000 feet, well above any of the weather which usually contributes so much to a bumpy ride. A rapid rate of climb enables it even on the shortest routes to get quickly out of the clouds and into the clear space above. It then cruises for most of the flight at a height which, happily, is best suited both to the economical operation of the turbo-prop engines and to the smooth air comfort of the passengers.




Large reclining cushioned seats, two abreast on either side of a wide aisle, provide comfortable accommodation for 44 passengers.

This "built-in" passenger appeal of the Viscount is heightened by other points making no less a contribution to the greater enjoyment of air travel. The large oval windows, larger than on any other airliner, which give a panoramic view equally available to the passenger in the inner and outer seat ; the four engines which, developing enough power for a three-engined climb and a two-engined cruise, give a degree of confidence unique in a medium-range airliner ; these add their weight to the impressive effect of turbo-prop flight.

In the air transport industry, success or failure must ultimately be measured in statistics. The unqualified success of the Viscount can be gauged by the consistently high passenger load factors—in most cases averaging better than 80 per cent. The appeal of the Viscount naturally is even more appreciated by airline operators—witness the swing-over to turbine-powered aircraft in the United States within a few months of the Viscount's introduction there.

## SWIFT

Climbing swiftly to its cruising height over the weather, maintaining a high cruising speed and descending to its destination airport quickly, the Viscount is the fastest medium haul airliner in operation today.

## SMOOTH

The Viscount is one of the very few aircraft in operation that is almost entirely vibration free.

All medium-haul airliners in service today have reciprocating engines—engines with pistons that move up and down. Such movement causes vibration. The

four propeller-turbine engines on the Viscount are rotary action with a minimum of moving parts which results in a smooth steady flow of power.

The Viscount flies so smoothly that a coin will stand on edge in flight. Indian Airlines passengers will experience soft, gentle flight for the first time. It is truly a new concept in flight.

**SILENT**

The Viscount has the quietest cabin of any commercial aircraft in operation today. Passengers will recognize immediately the fact that the noise of previous flight has been turbine-hushed. A Viscount flight is a refreshing experience, thanks to its quiet elegance.

**SURE**

The Viscount, powered by four Rolls-Royce engines, was developed after years of research and experimentation—it comes to I.A.C. with over 750,000 hours of safe, dependable passenger service.

**PRESSURISATION**

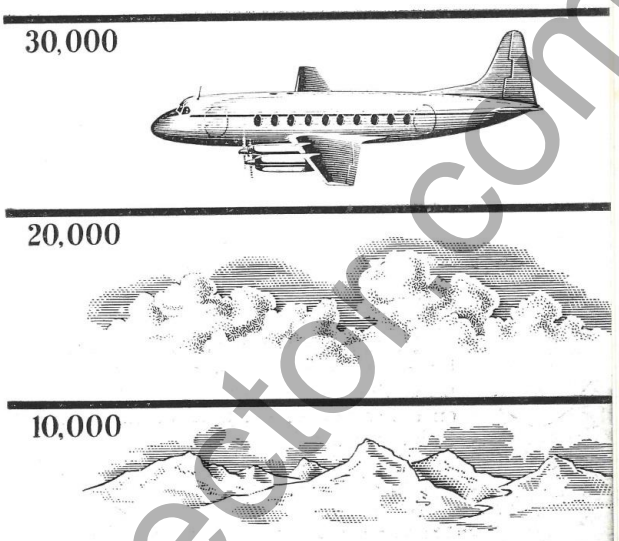
By pressurisation the density of the air in the cabin is kept nearly the same as the air pressure on the ground. In the Viscount ground air pressure conditions can be maintained up to 15,000. Beyond that the change is gradual and at 20,000 feet the cabin pressure would compare with the air pressure at 3,000 feet. By comparison, the cabin pressure of the DC-7 at 25,000 feet is approximately 7,500 feet.

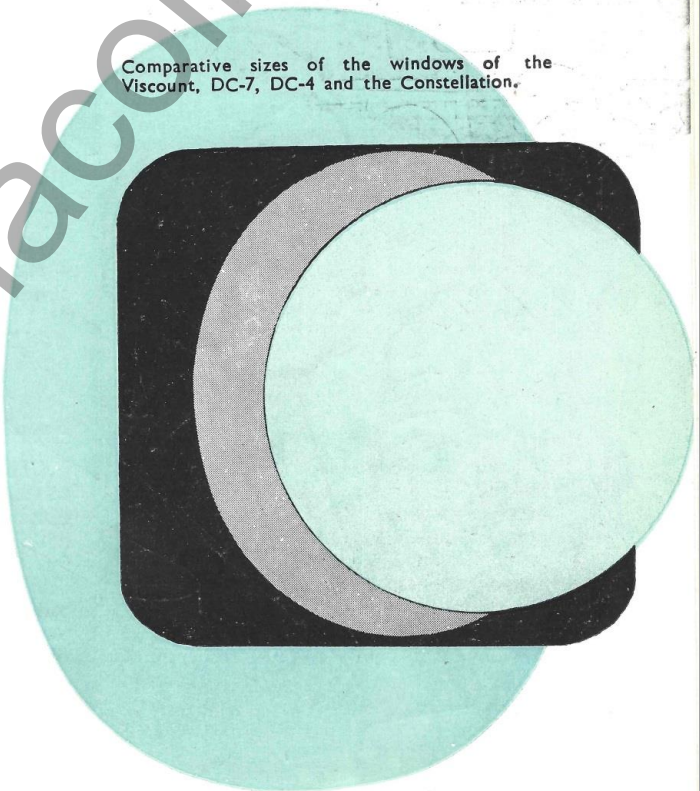
**TEMPERATURE**

The Viscount cabin temperature control is operated in conjunction with cabin pressurisation. Thermostatic controls maintain constant temperatures in the cabin whether it is—50°C or +50°C on the outside.

**SOUND-PROOFING**

Although the Viscount is inherently much quieter than any aircraft in passenger



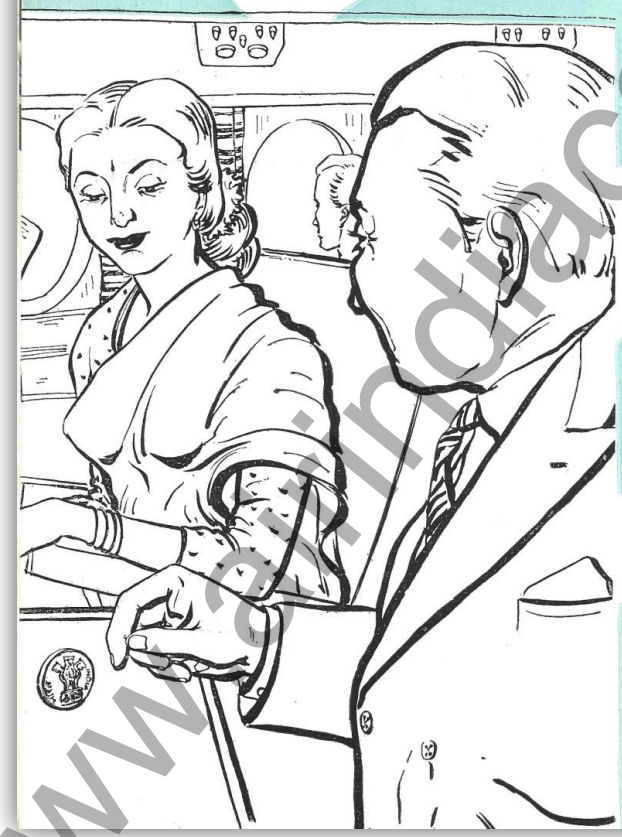
Comparative sizes of the windows of the Viscount, DC-7, DC-4 and the Constellation.

service, Vickers-Armstrongs have gone many steps forward to ensure the ultimate in quiet travel. Fibreglass completely blankets the fuselage from the nose to the rear pressure bulkhead. The cabin has been made so quiet that it was necessary to install silencers in the cabin super-charger ducting and discharge valves. Air circulating through the cabin made a noise which Vickers-Armstrongs felt might be objectionable to passengers.

## CABIN INTERIOR

In the passenger cabin, there are 44 large roomy seats with comfortable arm rests. The seating is arranged two abreast on either side of the aisle which is a full 20 inches wide.

The Viscount is entirely free from vibration : a coin can be made to stand on its edge.



The interior has been designed to meet the special needs of a tropical country in accordance with IAC specifications. The cabin floor is fitted with luxurious carpeting, the cabin walls being covered by soft shades of vynide whilst the ceiling is in silver grey. The seats are upholstered in a dignified modern "tapestry" with contrasting curtains in a very attractive design for the spacious oval windows found only in the Viscount.

The passengers have at their finger tips an ash tray, individual light switches, fresh air louvres and hostess call buttons. IAC passengers will enjoy the restful colour combinations which add a final touch to the quiet elegance of the Viscount ride.

## VISCOUNT WINDOWS

The IAC Viscount affords unprecedented visibility. Through large unique oval windows, 26 inches high and 19 inches wide, the passenger view takes on a new scope and dimension. It is larger than any window on any commercial aircraft in use. For the first time, the passengers in the aisle seats have a panoramic view of the ground from any altitude.

## SEAT TRAY

On the back of each seat you will find a personal table that quickly and easily slides into level position—a table to rest your book or beverage, to hold your food tray for a more enjoyable meal, a luxury touch found only in the Viscount.

## BUFFET

The compact, efficient buffet makes the serving of in-flight meals an easy task. Passengers may enjoy full course dinners, hot from the oven, in dining room comfort while flying five miles high at more than five miles a minute. When not in use, the buffet is hidden from sight by panels.

# the Viscount and you

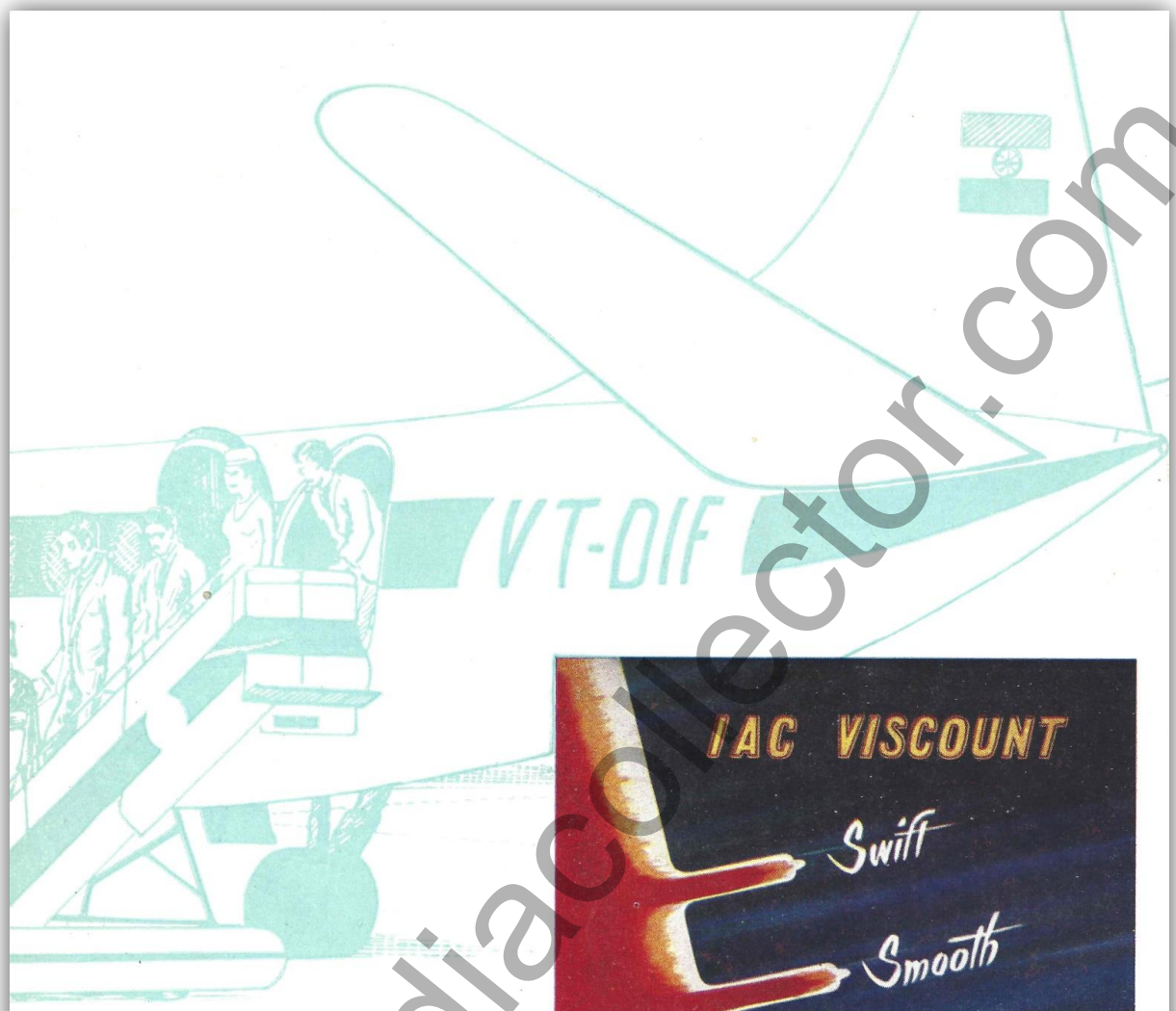
THE PILOT'S main task is, of course, to fly the Viscount smoothly to ensure passengers a comfortable ride. He also promotes public relations by discussing with passengers the features of the Viscount and keeping them posted with flight information.

THE HOSTESS—as the person who is mostly in contact with passengers in flight—has the key job of making every one feel at home by listening to their requests, looking after their comfort and serving the sort of meals they like.

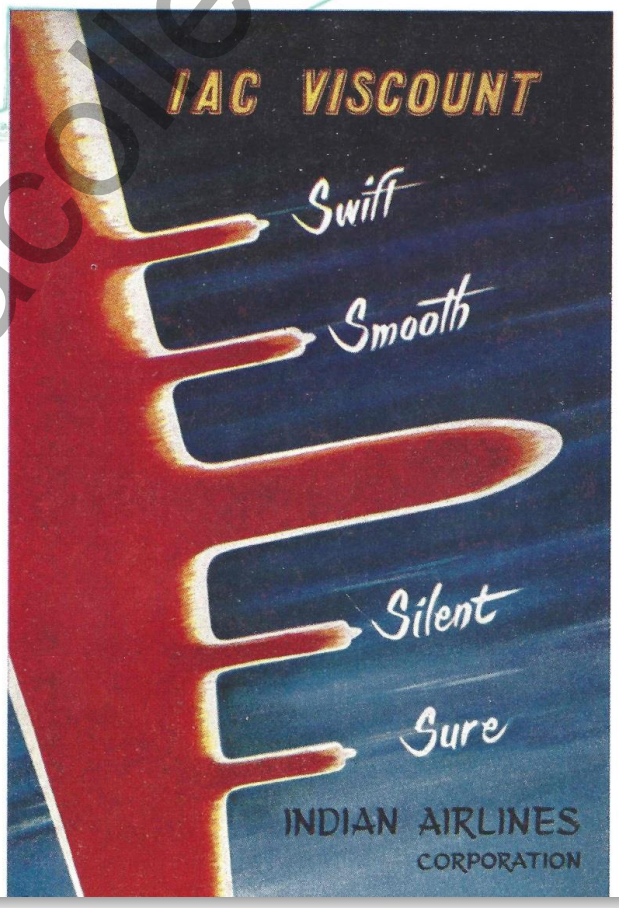
THE ENGINEER'S duty is to keep the Viscount in perfect trim. Even the world's finest airliner needs constant care, checking and re-checking of every moving part and the airframe.

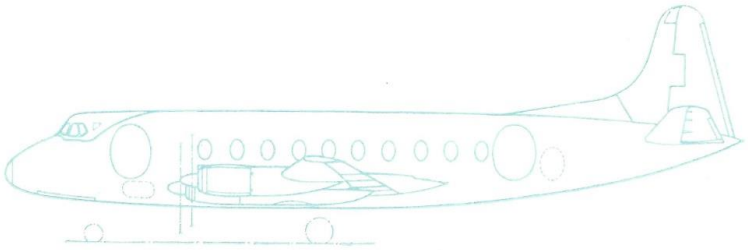
THE PASSENGER RELATIONS OFFICER is new to the Indian Airlines Corporation, but he has been put on the job particularly to popularise the Viscount and has been briefed how to deal with the difficulties of air travellers at the airport.

THE RESERVATION OFFICER is the one who first comes in contact with prospective passengers. On the courtesy he extends and the information he readily supplies depends a great deal of our primary sales promotion.




AND YOU THE PASSENGER—to you falls the not unpleasant task of passing on the word. If you have enjoyed your Viscount flight—as you are sure to do—relating your account of this new winged experience, which is something beyond getting from one point to the other in the shortest possible time, should be great fun and at the same time should encourage your friends to gain the same pleasurable experience.

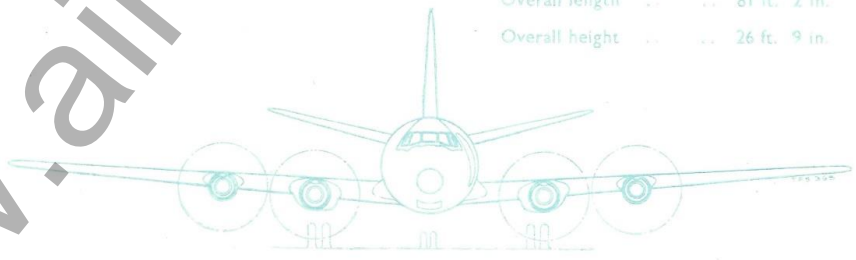




## VICKERS VISCOUNT

700D SERIES
(Four Rolls-Royce Dart 510 propeller turbine engines)

| | | |
|---|---|---|
| Wing Span | .. .. | 94 ft. |
| Overall length | .. .. | 81 ft. 2 in. |
| Overall height | .. .. | 26 ft. 9 in. |



# the Viscount way...

*In those spacious days when a journey to the next town was in the nature of a minor expedition—with baggage trains, attendants and tearful farewells—the palki, the horse and the camel provided convenient modes of travel, the elephant a more stately one. Today when time is the prime consideration, the plane is the thing.*

*The modern way to travel is by air and the most modern airliner is the Viscount. In keeping with the times, Indian Airlines have ordered ten of these fast turbo-props to operate their main trunk routes.*

*Swift, smooth, silent, sure, the Viscount brings the jet age to India and an entirely new concept of flight.*

**INDIAN AIRLINES**
**CORPORATION**