



## Airsickness among Indian Airlines Passengers

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Airsickness, a well-known malady in aviation circles which cuts short the career of many trainee aviators does pose a problem in 16% of airline passengers.

No definite correlation was found between prior ingestion of food and airsickness. In flight preoccupation decreases airsickness, and current disease enhance it.

The incidence of airsickness was more in female passengers supporting the saying that women get airsick more frequently. Our seasoned passengers have less airsickness, than the infrequent travellers—acclimatization plays a role here. The most common in flight factor which triggered off airsickness is the sudden change in direction and altitude of the aircraft, i.e. turbulent weather.

With further advancement in aviation technology and introduction of more sophisticated and bigger aircraft which will be able to withstand the turbulent weather, it is hoped that the incidence of airsickness in civil passengers will be minimal.

### Introduction

The history of motion sickness in man goes as far back as the writers of Greek Mythology, who were familiar with sea sickness, and it seems likely that men were suffering from seasickness well before they could make written records of it. The ancient Greek connection is brought out by the fact that the word nausea is derived from the Greek word *Naus* which means a ship—the same word which gave the adjective nautical. Scattered throughout history are famous men who have suffered from motion sickness, probably the first recorded sufferer was Julius Caesar and then other like Admiral Nelson and Charles Darwin. To stress the point of motion sickness one can only add that Lawrence of Arabia is reported as having suffered from this complaint whilst riding a camel and so has one of our passengers, who not only had air sickness but has also had similar problem during camel ride.

## Aims & Objectives

A very high incidence of air sickness occurs amongst Air Force trainees. Littauer (1943) reported that during a five hour flight in powered aircraft and gliders 80% of troops become sick.

In some cases almost 70% of airborne infantry personnel were airsick to the extent of temporary disablement on landing. Most of the published data deal with Airsickness in general as a military problem but this is not to be construed to mean that a similar problem does not exist in civil aviation. The difficulty here is that there are practically no published studies of this question in literature. To draw conclusion from studies conducted in Defence Services is quite misleading for the civil problem of airsickness, because of the different types of aircraft and different types of flying involved in these two situations.

This study was carried out with the intention of assessing the extent of air sickness in Indian Airlines passengers and the causal factors; measures if any that could be adopted to mitigate this malady.

At the very outset, I would like to mention that this is a pioneer study conducted at Delhi on a sample of passengers travelling by our jet aircraft; the Boeing with a passenger capacity of 126 and the Airbus with a capacity of 273.

## Material & Method

The data for the study were collected from amongst 4000 random passengers who travelled with Indian Airlines on various sectors during a given period of time through a passenger survey carried out by distributing a questionnaire. A trial run was carried out and the questionnaire modified with a view to obtain maximum passenger response. The passenger survey card was distributed inflight by our cabin crew to the passengers on board and collected back before the termination of flight. In this study passengers who had any one or a combination of the following were taken to be airsick :

Frequent Swallowing

Increased salivation

Abdominal discomfort

Headache & Malaise

Cold Sweating

Belching

Flatulence

Retching

Nausea

Vomiting

The questionnaire were analysed on the real time computer of Indian Airlines.

## Observations & Discussion

The overall incidence of airsickness in this survey was 16.9%. The occurrence of different symptoms is given in the following tables. The commonest being headache, followed by frequent swallowing, drowsiness etc.

Actual vomiting occurred in only 0.5% of the passengers. Most of mild and moderate cases do not vomit and this is not necessary to establish a diagnosis of airsickness.

Table 1  
Showing occurrence of different  
Symptoms

Retching	:	0.3%	(1.7)
Vomiting	:	0.5%	(3.0)
Headache & Malaise	:	5.1%	(30.0)
Abdominal discomfort	:	2.7%	(16)
Flatulence	:	0.7%	(4.4)
Belching	:	0.8%	(4.7)
Frequent Swallowing	:	3.1%	(18.3)
Increased salivation	:	0.8%	(4.7)
Cold Sweating	:	2.5%	(14.7)
Nausea	:	2.3%	(13.6)
Drowsiness	:	2.8%	(16.6)
Dizziness	:	1.2%	(7.1)

**Table II**  
Showing the break up of passengers according to their sex and smoking habit and the occurrence of airsickness in each group.

a) In different Sex	Percentage of passengers in each group	b) According to smoking habit	Occurrence of airsickness
Male	66.5%		15.0%
Female	16.9		24.3
Smoker	22%		14.5
Non-Smoker	78%		17.6

From the data, maximum of our passengers men (66.5%) and incidence of airsickness is 15% as compared to that of 24.3% in women and this is statistically highly significant. (Chi<sup>2</sup> test of association at 0.05 & 0.01 probably significant).

Non-smokers constitute 78% of the passengers under study, 17% of them had airsickness, while only 14.5% of smokers were airsick.

It will be noted here that the incidence of airsickness decreased with increasing age. (Table III)

Personal opinion as to the factors which triggered his/her illness indicated that 7.6% were airsick at the time of take off, 7.9% at the time of landing, 14.7% were airsick with sudden descent, 14% at

**Table III**  
Showing passengers of different age groups and airsickness in each

	19 yrs	20-29 yrs	30-39 yrs	40-49 yrs	50 yrs & above
Percentage in each group	2.7%	13.2%	21.6%	22.8%	23.9%
Percentage having air sickness	33.3%	22.7%	19.4%	14.9%	10.5%

to bumps in flight, and 4.8% were airsick due to various odours in the aircraft.

**Table IV**  
Showing correlation of Airsickness with intake of food & Alcohol

	% in each group	% in whom airsickness occurred
Nothing to eat	32.1	19.0
Prior Ingestion of food and alcohol	65.3	16.4

No significant correlation could be established between prior ingestion of meal and airsickness

which is contrary to the common belief that food and alcohol markedly enhance airsickness. (Table IV)

Only 6.7% of the passengers also had a family history of airsickness.

Airsickness once established can be very unpleasant especially to the infrequent traveller.

In general sufferers become acclimatised with more frequent travelling and the severity of the condition decreases.

Most of the seasoned passengers have less sickness as is evident from the data. (Table V)

A significant correlation between concurrent disease, and air sickness could be established.

7.6% were having a concurrent disease

Table V  
Showing correlation with frequency of Air  
Travel & Airsickness

	Once a week	Once a month	Once in six months
% travelling in each group	15.7%	35.3%	36.5%
Airsickness % in each group	14	17.5	17.8

hypertension, heart disease, diabetes mellitus. Of these only 32.8% were air sick, while the incidence of airsickness was 15.6% in those who did not declare any concurrent disease/illness.

1.5% of our passengers took medicines for airsickness and of these 53.3% were still airsick—this a highly significant correlation which may be due to inadequate dosage or due to hasty ingestion of medicine and less time for onset of its action.

9.6% of our passengers had taken medicines for some other disease and in them the incidence was 29.2%. Chi<sup>2</sup> Highly significant <0.0001).

Anxiety and fear have been reported to be major contributory factors in air sickness occurring amongst the air force recruits during training. Only 8.3% of our passengers were anxious or afraid of travelling by air, shows the confidence-passengers have in Indian Airlines.

Table VI  
Showing correlation with inflight Pre-  
occupational airsickness

	Preoccupied	Not occupied
% in each group	64	36
% having airsickness	14.1	20.3

There was a marked difference in the occurrence of airsickness among passengers who were actively engaged in some attention demanding task, or were not pre-occupied during the flight, the incidence rising from 14.1% to 20.3%. It is probable that no one with a normal vestibular apparatus is completely

immune to airsickness for this can be produced in most people if the casual accelerations are of sufficient intensity and duration. However, there are marked differences in individual susceptibility.

Individuals who are susceptible to one type of motion sickness are also susceptible to other types of motion sickness. Among our passengers 26.4% of airsick also had sickness, while travelling by other modes of transport namely ship, train, car and bus.

Incapacitation immediately after air travel is important to our passengers and its operational significance is well known in defence circles. We carry a very large number of passengers. Our passengers do comparatively well and after landing only 14.8% were incapacitated for varying duration of time, the maximum i.e. 11.5% were incapacitated for upto 2 hours.

#### Acknowledgement

I am indebted to my colleagues from various departments especially the Medical Department and to the passengers who have helped me in compilation of this work.

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