MOTORING

Safety On Two Wheels

by SURESH GUPTAN

EVEN without quoting a lot of depressing statistics on road accidents, it is obvious that a motorcycle is intrinsically more dangerous than a motorcar. The rider has only two patches of rubber in contact with the road, compared to the automobile's stable four-tyred stance. The car driver is also protected from the elements and other hazards by a cocoon of sheet metal. These two factors alone increase the danger to a motorcyclist, irrespective of his road speed or the amount of traffic that he encounters. A motorcyclist can break bones by falling off or hitting something even at 20 kmph.

In foreign countries, two-wheelers are basically purchased by younger people who have either not started earning enough to afford a car or are enamoured of the macho wind-in-the-face image and the sheer thrill of motorcycling. Elderly people who own motorcycles are usually confirmed 'bike nuts' who use it as a second leisure vehicle rather than routine transportation. School kids don't even need a licence to ride 50cc mopeds, and often they move straight onto awesome high-powered machines capable of exceeding 160 kmph (100 mph). With super-smooth roads to ride on, the real killer is speed.

It is different here. An Indian two-wheeler is usually a city commuter's vehicle purchased by forking out a year's earnings after a wait of several months. Very few buy one purely for the exhilaration of riding it. Besides, except for a small fraction of 350cc machines, the hordes of scooters and 100cc bikes cannot exceed even 100 kmph at full throttle. Our bikes are mostly driven between 30-35 kmph in city traffic—something that would be considered a strolling speed by

European standards. What causes most two-wheeler accidents on Indian roads is not speed but ignorance and carelessness.

You must have heard of schools for training car and truck drivers. Have you heard of any that teach people to ride a motorcycle? What most people do is wobble along under the guidance of a friend on the pillion seat until they learn the rudiments of keeping their balance and operating clutch, gears and throttle. A few days of riding, a sketchy knowledge of road signs and the RTO confers a licence. No son who gets his first mobike from indulgent parents, and no bank clerk who acquires a scooter for weekend airings with his nascent family is ever taught to cope with normal road hazards. The result is that only the lucky ones survive to learn from accidents.

For starters, if you are in your 40s, and thinking of buying your first two-wheeler—don't! Motorcycling needs quick reflexes and responses because of its sheer nimbleness and manoeuvrability. City traffic densities are probably thrice as much as in your college days. Buses and trains may be the best for you, for broken bones take longer to mend when they are older. If you are dead keen, better wait till you can ride behind your son or son-in-law.

If you are in your 40s, the chances are that your family may also have literally outgrown a two-wheeler's capacity. You and your wife could have grown fat. If you pile your children on, too, you could exceed the weight that your two-wheeler is designed for, its brakes will be insufficient to stop you in time and its engine too sluggish to accelerate through closing gaps in traffic. Scooters loaded with a wife plus child-in-arms and a kid each in front and on the rear carrier may look droll in a Mario cartoon but they are rolling accidents-about-to-happen.Remember, it is always the passengers who are flung off first in an accident.

Even sidecars can be dangerous. None of the Indian ones have a brake on the outrigger third wheel. You don't need a PhD in physics to learn that with the engine driving the rear of your two-wheeler, the line of thrust if offset to one side. Braking action too will be off-centre. Motorcycle/sidecar combinations will therefore always have an inherent tendency to swivel around the third wheel. This tendency will be exaggerated when your sidecar is loaded with passengers. It will also be worse if your vehicle is an underpowered little scooter. Anyone who has ridden a sidecar combo would have felt this effect as a steady pull on the handlebar. The force tends to deflect you to the right or left depending on which side your sidecar is fitted.

Under sudden acceleration, braking or changes in direction, you will have to compensate for this by constant corrective pressure on your handlebars. The resultant twitchiness in dense traffic can spell disaster for the unwary novice. The best foreign sidecars are always matched with motorbikes of sufficient power and are equipped with hydraulically operated brakes on the third wheel to act in sync with the regular brakes. So beware when someone tells you that three wheels are always safer than two . . .

Even before you sit on your bike, your dealer should recommend some items of clothing as necessities. Sadly, in India, they are interested only in selling you the bike and their bolt-on accessories. To begin with, a safety helmet is a must. True, cynics will dub it heavy, cloyingly sticky in warm weather, and clumsy and prone to be stolen when carried around—but it can save your life. Head injuries are by far the largest cause of two-wheeler fatalities. Once again, remember that your pillion rider probably needs one even more than you do. Even if city RTO regulations don't demand its use, never, never venture onto long distance highways or intercity runs without a helmet for your speeds will certainly be higher and you will need it all the more. When you buy one, make sure it has an ISI mark on it. *(See box for details.)*

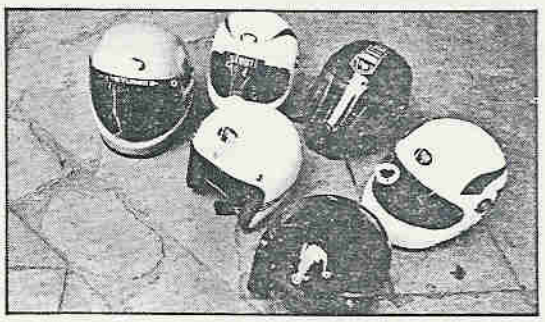
A good leather jacket—even if it sets you back about 500 rupees—is another worthwhile buy. Unlike synthetics, it 'breathes', is cooler in summer and warmer in winter, and protects you from wind and rain. More important, it can save you from painful bruises in the event of a spill. Mine has the scars to prove this. However, what is truly indispensable at all times is a pair of goggles. The more close-fitting they are around the eyes the better. Just imagine what could happen with your favourite girl hugging you at 40 kmph in three-lane traffic if you are suddenly blinded by a puff of dust. Living dangerously is one thing, but stupidity is quite another . . .

Your choice of motorcycle or scooter may depend on its cost, performance or looks, or a combination of all three, but the essentials of its safety are the brakes and lighting system. It will pay to check out their specifications before making a choice. A road that you travelled over in the afternoon may be dug up by nightfall and a strong headlight beam and brakes

may make the vital difference. Ride without your headlamp or with defective or poorly adjusted brakes only if your LIC policy is fully paid up! And here's another tip: when you buy a two-wheeler make sure it has enough power to go faster than the normal traffic you ride through. Underpowered machines are dangerously sluggish during overtaking. They are also 'moving roadblocks and a menace for other road users and therefore accident prone.

If you decide to spend Rs 15,000 on a new motorcycle, don't try and save a few hundred bucks on the crash guard, sari guard and twin rear-view mirrors. They have their uses. A crash guard can protect your feet, prevent burns from a hot exhaust if you tip over and save damage to gear levers, foot etc. Twin rear-view mirrors too may seem a luxury until you have witnessed riders being knocked over on intersections by following vehicles whose drivers have either ignored or

Helmets and Heads



YOUR new bike is purring smoothly under you, the sun is shining and the wind caresses at 55 kmph. Pure bliss! Then it happens. Something runs across the road 30 feet ahead. It could be a cat, a dog, or something higher up the evolutionary scale. The car in front of you slams on its brakes. Tyres squeal and your reflexes trigger an instant response. But it is all too late.

Your wheels lock, the bike skids and the front wheel slams the left fender of the decelerating car. Instantly, you are catapulted over the handlebars. A rush of air and milliseconds later, panic freezes the view for eternity as the stone curb rushes up at your head at 45 feet per second. "No, this can't be happening to me," telegraphs the mind.

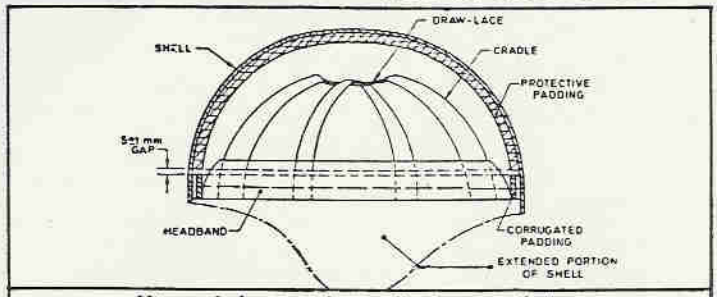
But you will never know what happens next. The skull impacts and slows from 50 kmph to 0 at once. Bone cracks and the soft brain floating in its cushioning envelope of cerebrospinal fluid spatters itself into messy ruin against the skull wall under its own momentum. This is not a scenario from a horror film. It could happen to you, for one out of four motorcycle crash victims dies this way.

While no helmet made can ever guarantee your safety, a good one will give you a sporting chance of surviving a head injury. Statistically, this is the single biggest cause of two-wheeler fatalities. The principle behind helmet protection is the provision of a crushable padding (usually expanded polystyrene otherwise known as thermocole) within a strong light shell. This reduces the rate of deceleration of the soft brain tissue and absorbs energy when the head hits an immovable object at speed.

But the real trouble is that no user can test the efficacy of his helmet. Indian Standard IS 4151:1982 lays down good specifications but I found that none of the popular models seem to comply with them. This includes the very few that claim the ISI mark. Further, the standards themselves are not foolproof. While specifying the strengths of materials used for the shell, IS 4151 fails to distinguish between fibreglass and thermoplastics that include ABS, poly-propylene and polycarbonate. Foreign standards insist on indelible labels for such plastic helmets cautioning against deterioration from solvents present in the decorative paints applied over it. Polycarbonate helmets are also reported to be damaged by *petrol*.

Also, ISI 4151 only covers open-face helmets. There are no controls over the other types. So the chances are that the ones with fancy jaw guards, flamboyant visors and all the closed designs are unsafe.

The most commonly stated reason for avoidance of helmets by two-wheeler riders is their stuffiness in hot weather. The V-type helmet (see illustration) detailed in the Indian Standards is specifically designed to eliminate this problem. I own one of these given to me by my brother in the army. Tragically, none of the shops in Bombay stock this variety. The adjustable draw-lace and anti-concussion tapes are meant to ensure a cooling air gap between the wearer's head and the shell. I know from experience that they work.



V-type helmet with cradle for ventilation.

What major helmet manufacturers inflict upon us is the NV type where the padding touches the head all over. These are just plain lousy. Polyurethane covered with synthetic fabric feels extremely uncomfortable, sticky and irritating against the scalp and forehead.

So if you are shopping for a helmet, memorize these points:

1) Insist on the ISI mark for your helmet. It is still your best bet. Apart from adequate shock absorption, penetration resistance, and strength of retention straps, it guarantees the user proper peripheral vision (105 degrees either side, 30 degrees up and 45 degrees down) plus a sound transmission loss limited below 3 db over the frequency range of 250 to 2000 Hz.

2) If the ISI label looks a cheap stuck-on thing, be suspicious. Insist on further proof from manufacturer's literature. If the salesman raises his voice, remind yourself that it will be your head beneath that helmet and not his.

3) Buy only fibreglass helmets. Avoid all the thermoplastic ones.

4) Buy only open helmets. Try and turn down all bolt-on goodies no matter how cute they look. And don't remove or alter any of your helmet's components.

5) If you can get hold of a V-type helmet don't buy anything else unless you like it hot.

6) I know that few people will heed this point and even the ISI is mum on it, but it is said that the average life of a well-used helmet (even the fibreglass ones) is two years if maximum protection is to be ensured. Ultraviolet and infra red radiation in common sunlight is held detrimental. If a helmet bears the ISI mark, it is mandatory for its maker to label it with its date of manufacture as well.

Anyway, if your helmet has suffered one good knock, don't take chances. Discard it and get a new one.

7) Finally, remember this: if your helmet is to do its job, it must fit your head closely. The draw-lace must be pulled tight and chin strap kept under tension at all times when riding your bike or scooter. A loose helmet is no helmet. ■