

THEY had taken the most sophisticated technology the world has ever known and made a hairy stick out of it.

Hubert Hohn, American computer artist

THREE things come to mind after you finish gazing at *State of the Art* (Art on an Apple), the computer-painting exhibition at the National Gallery of Modern Art (NGMA) in New Delhi: that this is probably not painting, in the strictest sense of the term, although it would be too precipitate to make up your mind about exactly what it is; that the nine participant-artists, brushmeisters each one, treated an Apple Macintosh computer as nothing more than a glorified high-tech, super-fast, remote-controlled horsehair brush, with no attempt to give computer art an identity distinct from conventional painting; and that Apple has been given on a platter enormous, often uncritically unctuous, free media publicity worth crores in a very, very short time.

And this, in its continuing global marketing war with the only other comparable computer giant, IBM, is very astute one-upmanship indeed. What with the recent, pre-budget relaxation of Customs duties on electronic items, watch Apple (its image hard-sold by honest-to-God artists who are regarded as national treasures, some of them), romp through the vast Indian computer market a few months hence.

This exhibition—"mixed-media", the organisers insist, and not "computer art"—has been blitzkrieging the print media for the past two years. Not all the artists approached by Brahma, a Bombay-based computer company behind it all, agreed to temporarily efface the hardened creative iconoclasm that has been their making as leading artists, and become guinea pigs for a 'man-machine creative interface idea' that is by

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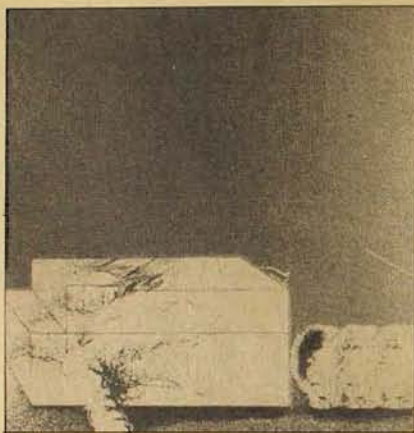
now establishmentarian in the West but still has the power of novelty to raise a storm in India.

Of the nine who did agree—M.F. Husain, S.H. Raza, Akbar Padamsee, Prabhakar Barwe, Laxman Shrestha, Manjit Bawa, Mani Parekh, Navjot Altaf and Atul Dodiya—only Husain jumped into the deep end in full regalia, and surfaced with works in a different, nearly unrecognisable style, a fruit punch laced with acid—squiggly, unsure lines like the foot-prints of an exhausted, blind mouse, gory blotches of colour (as if the Apple had decided to buck the rein and go evil on him), each one of his canvasses mystifying in content.

As for the rest, most of the nine started out wary and ended with grudging admiration for the automated beast. The unsureness is evident on some canvasses: Bawa finally used a brush on the canvasses (*Goddess and the Lion*, *Goddess and the Tiger*, *Eternal Musician*) to smoothen out the kinks of random pixillation; Atul Dodiya

# Nine artists and a nimble mouse

When leading artists and a computer link up, what they create can involuntarily shake the very foundation of the act called 'painting'. Kajal Basu returns completely bemused from a computer/painting exhibition in Delhi.



(Right) Atul Dodiya's 'Interior with a Lamp': a technology that has a million possibilities; (below) M.F. Husain's 'The Artist and the Model': between small screen and keyboard



(From top left) Navjot Altaf's 'A Stilled Life': hesitation; Laxman Shrestha's 'Abstract VII': another experience; Manjit Bawa's 'Goddess and the Lion': innovative colours

use the computer cautiously, then they could harness its potentialities and permutations to their advantage without jeopardising their creative freedom.

Adequate words of warning, but Barwe shoots himself in the leg by going on to say that the "purpose of the computer is not to provide the process but the possibilities. To me, the final result is always more important than the process." The end, in short, justifies the means: you can use a mouse to draw an apple, or you can use a brush, the end product will be equally valuable.

In the life of the quotidian, however, the quality of a real apple depends on the soil, the climate, the fertilisers used; the process dictates how juicy the red lump will be. If the end product is his only concern, why on earth should Barwe ask for "caution" while exploring the computer's "countless possibilities"?

You think of Red and Black is born.

M.F. Husain

If Husain was not being as sincere as he can possibly get after reducing painting to a stand-up act and get paid lakhs for it, the above statement

creative artistes, he would have hated a tool with a wilful mind of its own. What Brahma handed him and the others was simulated painting instruments like brushes, pens, charcoal, crayons, a palette of a million colours (more than all the artists put together would dab on canvas in their lifetimes), and a variety of special effects like enlargements, reductions, distortion, rotation, vignettes, diffusion, duplication, blur, and blend.

Then they were given a digital scanner which introduced on to the canvas photographs (used maximally by Atul Dodiya), sketches, text (S.H. Raza) and objects (Prabhakar Barwe's safety pin). In fact, most of the artists started by scanning photographs or sketches and proceeded to work on them using the simulated painting tools; the images, therefore, are not so much subjectively drawn as 'drawn over'.

The works, finalised on the screen, were then transferred on to 'flax' canvas (canvas with woven hay in it) through a huge roller sprayed by colours controlled by computer-controlled ink-jet sprays—the colours a combination of red, blue, yellow and black—attached to an electronic 'arm'. The process of transferring from disc to canvas took up to 24 hours.

The 29 canvasses are behemoths, their sheer size pounds you into meek submission. Ideally, they should be seen from no less than 20 feet, a distance that hides the blemishes that elbow you in the eye when you walk up close.

The ink-spray jet is not a machine invested with the finesse of a brush. It has the dexterity of a juggernaut. At close look, the edges of formations are blunt, bleeding into each other, colours run. There is no way you could make a miniature with the computer. There is little point having "the finest 'flax' canvas and acrylic inks (having fastness measuring 7 on the International Wool Standard)" if the product itself is a splotch.

Using computers is not a short cut to art. Instead,

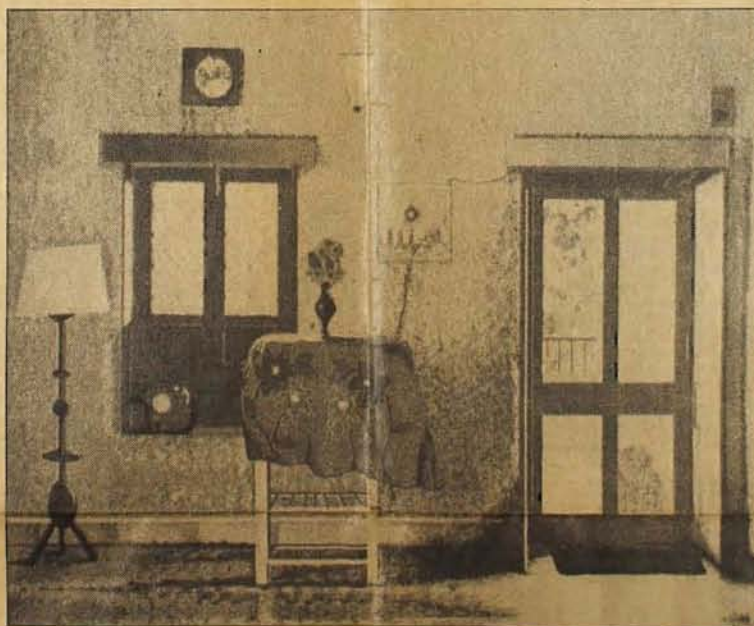
It is evident that the nine have together fallen into an old, inviting trap: like that which 19th century photographers tumbled into with cameras—imitating paintings.

It offers more choices, more deliberations. In fact, once I became comfortable with the computer, I knew I could create better work with the help of this technology than on my own.

Manjit Bawa

Also, "this technology" could make for a generation of lazy artists. When you paint a work of art, you paint to go beyond the limitations of the raw material. The argument here is that if you still wish to "paint", a computer will introduce you to possibilities beyond those afforded by brushes, palette and paint.

"What you do with a computer," said an artist, "is not paint; you make images. Just because you use acrylic and canvas, the act of producing a two dimensional work is not painting. The moment you use a mechanical simulator between yourself and the canvas, you go beyond the def-





the kinks of random pixillation: Atul Dodiya (*Interior with a Lamp, Landscape with a Cow, Girl in the Balcony*) decided that the computer "should go with my own slow, deliberate artistic vision/process". Laxman Shrestha (*Abstract IX, Abstract VII, Abstract XIII*) is "still trying to find a way to make computers do what I need".

What is also evident is that the nine have together fallen into an old, inviting trap, one that 19th century photographers had tumbled into with the camera: that of imitating paintings, with a device that had no business behaving like a carbon copier.

Photographers went out of their way to imitate the look and content of paintings, discovering various ploys to create *doppelgängers*—many became masters at etching fake brushstrokes on the negatives with knives and razors, and with chemicals. The promises that virtuosity in the darkroom held were that of recognition as a true artist.

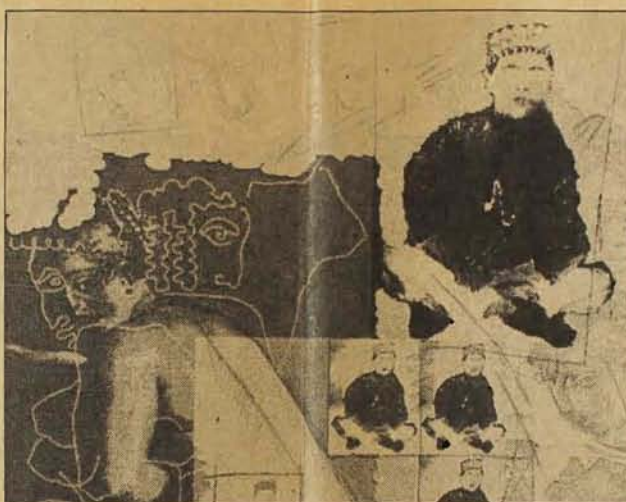
Artists are, by definition, jumpy neo-Luddites, and fiercely loyal to their techniques, however labour-intensive they may be (in fact, one of the most enduring myths of aesthetics is that the more labour and time a work of art takes, the more value it invests itself with). Artists are the last to learn new technologies and adapt them to their work.

In this sense, how would Piet Mondrian have responded to the geometrical adroitness of a

terms of colours, textures and image manipulation. This is why I decided not to use colours and restricted myself to two-dimensional and graphic possibilities.

"In India, this is perhaps the first time that artists are using computers in the creative process and though it opens up many avenues, we must see it in the context of our needs and experiences. On has to keep in mind the pros and cons of this new tool. I feel that if artists don't go overboard—and it is very easy to do so—and

**Artists are, by definition, neo-Luddites, fiercely loyal to their labour-intensive techniques. They are the last to learn new technologies and adapt them to their work.**



would be worth at least a laugh. But the one thing different about the man is that he was one of the three to continue to use the "electronic creature to explore the dynamics of visual wisdom"—the other two being S.H. Raza and Manu Parekh—after the 30-month training-waltz with the Apple stipulated by the company. At least they experimented into 1991 before giving up and returning to the trusty hand-held palette.

Fortunately for Husain, the Apple Macintosh didn't paint black when he asked for red. Like all

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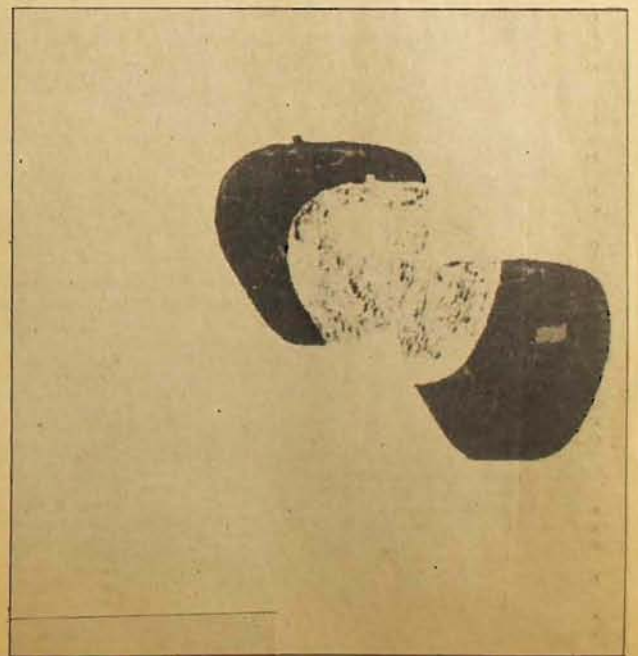
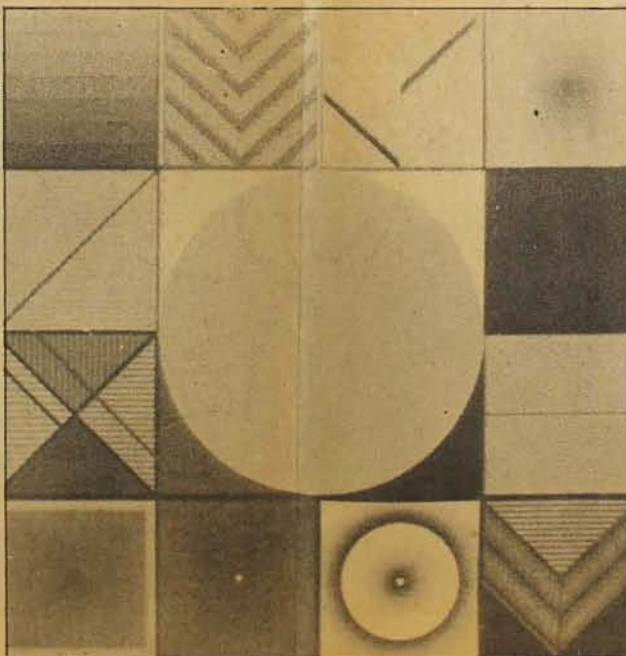
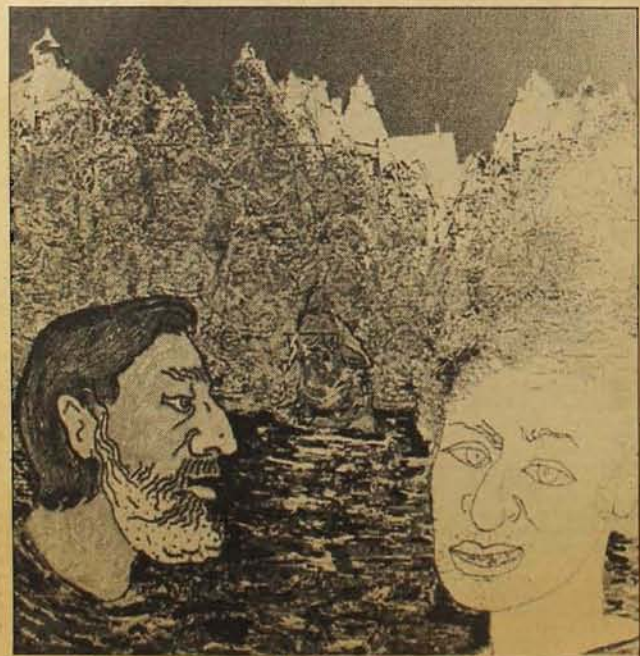
you're sent into the canvas, you go beyond the definition into another creative paradigm.

"In the same manner, you're not playing a violin just because you use your synthesizer to scrape away like a violin. You're still using a synthesizer."

This is where definitions have to be reworked. A computer is domestic help in the residence of the artist's mind. He can use it 1) as an electronic "scrapbook" to store images and pictures that he can readily access for reference or for use; 2) as a link with another computer to access or exchange graphic images; 3) as an archive of art, since it is now possible to get complete libraries of works of all important artists digitised and stored in computer disks; 4) as a visualising tool to try out different ideas before actually implementing them; 5) as a tool for graphic artists—which is what many "pure" artists are today—to provide instant colour separated positives required for screen-making or for photo-etching.

And definitions of art and painting will have to be reworked despite the "clarification" put out by those who made the computer over three years in Bombay: *It should be noted that this is just one of the many different ways in which artists can use computer technology. It is important to see this collection of work as just an example of how computers can be used in the creative process and not as a new form of art.*

Happy hunting, Apple.



(From left) Manu Parekh's 'Untitled': the computer becomes a useful, versatile partner; S.H. Raza's 'Emerging Forms': part ancient, part modern, assimilator of inputs; Prabhakar Barwe's 'The Third Apple': keeping pros and cons in mind in order not to get lost in countless possibilities



# Bangalore metro rail not yet on track

**Y**ET another blueprint has been drawn up to alleviate Bangalore's growing transport problems. But the latest plan for the city, the mass rapid transportation system (MRTS) pivoting around a metro rail system, aims to be different, looking beyond the problem of transport. If this highly ambitious project comes through, it would make Bangalore — plagued by infrastructural deficiencies in recent times — truly a megapolis to be envied.

The Bangalore MRTS plan is different in many other ways too. It's project report definitely ranks among the quickest to be submitted, ever. Asked to come up with

The committee examined the suitability of different technically viable means of transport available today in the context of the physical matrix of Bangalore and their relative costs. Based on this, it was thought that a combination of surface rail, elevated and underground metro would best serve Bangalore's needs.

The plan for Bangalore is based on the experience of other countries, where an efficient mass transit system covers not only the corporation area, but also the urbanisable belt around it, running partly on the surface and partly on elevated tracks or in underground tunnels.

The metro rail project is to be



Chaos on the roads. Will the going be smoother with a metro?

percentage of the intra-city passenger traffic off the roads to a rail-based system. This will not only help to reduce the unmanageable traffic congestion on the roads and reduce pollution but also save time and reduce accidents, claims the MRTS report.

MRTS is obviously going to be a very expensive project. The committee makes a rough estimate of around Rs 2,000 crore, though the

final figure would depend on the techno-economic configuration.

So financing will play a very crucial role in the making of this ambitious railway project. The committee did recognise that projects like these hardly generate enough revenue to meet the operating costs, with almost nothing left to service capital cost. So it has thoughtfully listed a few avenues by which resources can be raised.

The beneficiaries of the project — the people of Bangalore — are expected to contribute generously to it. The World Bank and ADB are also likely to be approached. The largest contributors are expected to be the central and state governments.

The state government has been asked to make a budgetary allocation towards the metro rail in 1993-94. Most interesting is the

suggestion that MNCs be brought into the financing on the familiar BOT (build, operate and transfer principle). Considering that many MNCs are headquartered in Bangalore and many more are likely to follow suit, this proposal might find a few takers.

If the committee's suggestion is taken seriously, either a statutory authority or corporation unfettered by bureaucratic red tape and with complete technical and financial authority will be set up to implement this project. But Chief Minister Veerappa Moily himself pointed out the MRTS has been hanging fire for the past 15 years with various committees being set up to look into the matter.

The city currently depends exclusively on the Bangalore Transport Service (BTS) to meet the daily needs of the commuters. Obviously, this service is inadequate. Bangalore is the sixth largest metropolis in the country and is amongst the fastest-growing cities in the country. The population of the city exploded from a mere 1.7 million in 1971 to 4.1 million by 1991. By 2001 it is expected to touch 7 million.

Naturally, the vehicle population has also shot up. On March 31, 1991 there were 6.4 lakh vehicles registered in Bangalore city, which included a whopping 5.02 lakh two-wheelers. There were 23,000 auto rickshaws, on which most commuters are dependent when BTS doesn't perform. Taxis are still a rare phenomenon in the city. There were also 92,000 cars, 22,000 trucks and 4,775 buses, besides

jeeps, taxis and other vehicles.

But the road infrastructure in the city cannot bear such heavy traffic. This had led to congestion, accidents, parking problems, energy wastage and pollution. Accident figures have risen from 4,805 in 1985 to 7,042 in 1991, with the number of injured going up from 3,892 to 5,671.

A RITES report points out that there is steady growth in per capita trip rate and also a rapid shift of trips to private or personalised transport modes. The per capita trip rate has grown from 0.7 in 1981 to 0.95 in 1991. But the trips made by public transport (by bus, that is) has declined from 55 per cent in 1982 to 53.35 per cent in

**The authors of this project feel that MRTS will prove to be a viable transport system for the next 50 years or even beyond**

1991 (estimated). The transport requirement of the city — now around 3.5 million return trips — is expected to exceed eight million by 2001. The number of vehicles on the city roads is increasing at 9 per cent per annum. Two-wheelers are expected to increase to 7.5 lakh by 2001.

The authors of this project feel that MRTS should be a viable transport system for the next 50 years or even beyond. Veerappa Moily has asked the Union railway minister, C K Jaffer Sharief, to expedite the project. He has said that if it were to be cleared by the Centre, then work would start on the metro rail by April 1993. While that is putting the cart before the horse, Bangaloreans are hoping that the project doesn't get derailed even before it gets moving.



## DEALS & DEEDS

### Technology base must be strong

At the 18th session of the Indian Science Congress Association, the president, Ramadhar Jha, discussed the problems and prospects of the Indian construction industry.

According to him, modernisation of the construction industry and its management is essential for cutting costs and improving quality. The following steps, he says, will help upgrade our technological base:

- Engineering and design services must be strengthened.
- For accurate and timely information, a data bank should be established.

- Skilled workers and small contractors should be given training at regular intervals.

- Construction management and technology content in civil, mechanical and electrical engineering education should be made compulsory.

- Training at all levels in the construction industry should be provided constantly.

- Recent advances and developments in construction materials should be fully exploited to reduce time and cost overruns.

- In order to utilise fully the results of research design, there should be strong links between construction firms, machinery and equipment manufacturing units, R&D institutions and public-funded institutions.

- To build up a network of consultants, the services of the Consultancy Development Centre established by the S & T Ministry should be used.

- Special safety laws should be enacted for the industry.

- Construction companies must invest at least 1 per cent of their turnover to establish design and R&D centres.

- The government should coordinate, review and direct all aspects of the industry, machinery manufacturing units, consultants, construction companies, contracting firms and international markets for export of

*Bangalore is being crippled by more people and vehicles than it can support. Hope now rests in the metro rail project, reports Asha Rai*

one in mid-December 1992, the committee headed by Bangalore Development Authority (BDA) Chairman S B Muddappa had it ready by the first week of January 1993.

More importantly, it will be the single biggest urban project undertaken in Karnataka, with the total cost pegged at Rs 2,000 crore. For precisely these reasons, it has drawn flak from the leader of the Karnataka Rajya Raitha Sangha, M D Nanjundaswamy, who has been in the news for campaigning against multinational seed companies operating in the state. Nanjundaswamy finds the idea of allocating Rs 2,000 crore for the construction of the already pampered urban sector beyond his comprehension. When allocations for developing rural infrastructure are negligible.

But even skeptics agree that if there is one thing Bangalore is direly in need of, it must be a metro rail. The city has never had too efficient a public transport system, and with the infrastructure now severely strained by the increasing population, the life of the common commuter is to be pitted.

The system also calls for the construction of a new 13 km transport corridor from Jayanagar to Rajajinagar to link the southern part of the city. These two would come in the first phase of the project, which has a five-year time frame for implementation. A second corridor, also with a five-year time frame, will run 11 km between Hudson Circle and Krishnarajapuram. Finally, the project also envisages a 54 km circular rail or ring road around the city.

The MRTS will take a very large





Photography by SANTANU MITRA



## Buying the stairway to hell

**M**ANY businessmen who have taken space in Delhi's commercial complexes find they have done just that. But most are staying put, knowing that perhaps worse awaits them elsewhere.

An indomitable handful insist on being allowed to choose their own version of hell. "It used to be good here at the outset," says Neeraj Bhatia, who has a travel agency in Bhikaji Cama Place. "But now I'm thinking of moving to this new complex coming up in Janakpuri."

It is usually a hopeless quest. By the time these people have settled in their new premises, they have deteriorated to the level of the ones they quit in disgust. The bottomline almost everywhere is a complete breakdown of all essential services.

"Don't drink the water," warns Rajiv Goel, who has a travel agency in Rajendra Place, the biggest commercial centre in west Delhi. "It has a peculiar odour about it." Two blocks away, in Hemkunt Building, SK Ghosh, vice-president of the residents' association, says the fire escape is choked with filth. He hammers on its door, which refuses to budge. "If a fire breaks out," he says ruefully, "you'd just have to rush down the main staircase."

One false step, of course, and you take the quick way down. The landings of Rajendra Place's stairwells are mostly walled with glass, which fell out of the frames long ago. Flat-owners have blocked off some of the yawning gaps with old plywood and discarded furniture. And, on one landing, with a signboard warning that the building does not have adequate fire-fighting equipment, and that occupants are using it at their own risk.

But this is a worst-case scenario. The cumulative everyday irritation of spending eight hours in these complexes perhaps causes much more damage than any single disaster. The office worker's morning begins with a battle for parking space, sometimes followed by a hike to his office several floors up, thanks to poorly-maintained lifts. He may spend the day insulated in his office, but come 5 pm, he is face to face with reality again. The huge lobbies and open spaces littered with squatters and unauthorised vendors. And the spindrift of dirt and garbage whirling about him as he walks to his car. With a couple others double-parked before it.

■ Pratik Kanjilal

## How to compute losses and gains on capital investments

**K**UMAR made two investments on 5 January, 1991: one in shares and the other in immovable property. He sold off both during the financial year 1992-93. He made a long-term capital loss of Rs 4 lakh in shares, after adjusting for the cost inflation index. However, he made a short-term capital gain of Rs 3 lakh in property. Will he have to pay tax on the Rs 3 lakh, which will be clubbed with his other income?

Madan has made a business loss of Rs 3 lakh during the financial year 1992-93 but he has also made long-term capital gain of Rs 5 lakh. He wants the business loss set off against his long-term capital gain. Can this be done?

**Short-term & long-term assets:** Under the Income-tax Act, 1961, there is only one head of income known as "capital gains" for computing gain or loss relating to a short-term or a long-term capital asset. A short-term capital asset under section 2(42A) refers to a capital asset held for a period not exceeding 36 months. It is only in the case of company shares that the period of 36 months is reduced to 12 months.

**Computation of gain/loss:** The old provision for deduction of a part of long-term capital gain and initial exemption of Rs 15,000 no longer applies. Two main deductions are to be allowed under section 48 in computing the income chargeable under the head "capital gains." These deductions are: ★ Expenditure incurred wholly or exclusively in connection with the transfer, such as broker's fee, stamp duty charges, etc; ★ The cost of acquisition of the asset and the cost of any improvement thereto.

In the case of short-term capital gain, the computation is fairly simple. The actual cost of acquisition and the cost of any improvement together with any expenditure incurred on the transfer, is deductible from the full value of the sale proceeds. For example, if a short-term capital asset costing Rs 2 lakh is sold on January 1 1993 for Rs 6 lakh, then the short-term capital gain would be Rs 4 lakh.

But in the case of long-term capital gain, some other expenses can also be deducted. This is in relation to the indexed cost of acquisition based on cost inflation index. The cost inflation index for the financial year 1981-82 is 100 and goes up to 223 for the financial year 1992-93.

Where a long-term capital asset is acquired prior to April 1 1981, the taxpayer is given an option to substitute the market value of the asset as on this date. Thereafter, the substituted value or the cost of

acquisition has to be given weightage in terms of cost of improvement. This may even result into a loss under the head "capital gains" and is known as long-term capital loss.

Take an owner of a plot of land bought 20 years ago for Rs 10,000 who sells it for Rs 1,50,000 during the financial year 1992-93. The market value of the plot on April 1 1981 is Rs 1 lakh. The indexed cost of acquisition as per the cost inflation index would be  $223/100 \times 1,00,000 = \text{Rs } 2,23,000$ .

Thus from the indexed cost of acquisition of Rs 2,23,000 the sale price of Rs 1,50,000 would be deducted, resulting in a long-term loss of Rs 73,000 under section 48. This loss can be set off against any other long-term or short-term gain as discussed below.

**Tax on long-term capital gain:** The newly substituted section 112 by the Finance Act, 1992, with effect from the assessment year 1993-94, provides for a levy of special income-tax at a concessional rate on long-term capital gain. The income-tax on "other income" including short-term capital gain is to be calculated in the normal manner. From the total income, the amount of long-term capital gain is to be deducted and 11% at 20 per cent per individual and Hindu Undivided Family is to be levied on long-term capital gain. For partnership firms, the IT rate is 30 per cent, and for companies it is 40 per cent.

**Set-off of long-term against short-term gain & vice-versa:** Section 70 provides that if there is any loss from any source under any head of income, the taxpayer is entitled to have the loss set off against income under the same head.

Under the head "capital gains", the source of income or loss could be short-term or long-term gain or loss. Under this section if any long-term loss is computed after the deductions allowed under section 48, it can be set off against short-term capital gain, if any, and vice versa.

For instance, Kumar has incurred a long-term capital loss of Rs 4 lakh in respect of shares as computed after giving the benefit of cost inflation index. He made a short-term gain of Rs 3 lakh on a plot of land.

Kumar would be eligible to set off Rs 3 lakh of his long-term capital loss against his short-term capital gain of the same amount. The balance Rs 1 lakh will now be termed simply as loss under the head "capital gains" and will be carried forward as under the provisions of section 74.

For instance, if Kumar has any other income, he will be liable to pay tax on it but he won't have to

pay tax on the short-term capital gain.

**Set-off of other losses against capital gains:**

Under Section 71(3), any short-term or long-term capital loss cannot be set off against income under any other head such as business income, property income or salary income, etc. As per the amendment made by the Finance (No 2) Act, 1991, however, the reverse is now permissible.

If there is a loss under any head of income like business income or income from other sources or there is a gain under the head "capital gain", whether relating to long-term or short-term capital asset, the taxpayer is entitled under the provisions of section 71(2) to set off the loss under the head "income from other sources" against his short-term or long-term capital gain as computed u/s 48.

However, as per the new provision of Section 71(4) (Finance Act, 1992) a loss under the head "income from house property" is cannot be set off against short-term or long-term capital gain. But business loss or loss under the head "income from other sources" can be set off against long-term or short-term capital gains.

For instance, Madan has incurred a business loss of Rs 3 lakh during the financial year 1992-93 but made a long-term capital gain of Rs 5 lakh on the sale of shares. He has no other income. Madan will not be liable to pay any income-tax on Rs 5 lakh. But he will be allowed to set off the business loss of Rs 3 lakh against his gain of Rs 5 lakh if he so likes and pay income-tax on Rs 2 lakh under section 112.

**Carry-forward of capital loss:** A loss under the head "capital gain" ceases to be a capital loss of short-term capital loss once it remains not so set off for a particular year and as available for carry forward. Such a loss can be carried forward for set-off against a capital gain for a period of eight assessment years immediately succeeding the assessment year for which the loss was first computed.

In respect of old losses under the head "capital gains" relating to the assessment year 1987-88 or earlier, there are certain special provisions made in Section 74(3). Thus, the loss of Rs 1 lakh in the case of illustration No 1 for Kumar is allowed to be set off as loss under the head "capital gains" against income under the head "capital gains" for the assessment year 1994-95 and onwards up to a period of 8 years in all under the provisions of section 74(2).

■ R N Lakhota