

NOTES ON
TECHNOLOGY AT THE
TIME OF GOING
TO PRESS

AVIJIT MUKUL KISHORE

When I first heard of *Kumar Talkies* (1998), the fact that the project involved all the impossibilities of film production was enough to excite me. It was to be a documentary on a small town called Kalpi in northern India and the sole cinema theatre there. The theatre was owned by the family of the director of the proposed film, my friend Pankaj Rishi Kumar who, like me, had recently graduated from film school. He was interested in making a film on the town where his family had lived in the 1960s, its economy and its relationship with cinema.

The documentary would include parallel narratives of us filming there in the present and historical references to the area in Indian cinema. The town of Kalpi stands on the banks of the Yamuna in the Bundelkhand region of Uttar Pradesh, south of Kanpur and north of Jhansi. It has been footnoted in films that deal with the Revolt of 1857, and in the 1970s, its barren landscape was the setting for the dacoit films of the surrounding Chambal valley.

The year we shot *Kumar Talkies* was 1997, a major cusp in the history of film technologies. Documentary films made around that time were marked by the demise of 16mm as a medium of production and the arrival of digital video (DV) as the chosen medium. Our 'real' film was to be shot on 16mm and the self-reflexive studies of us working, in the newborn medium of DV. There was much debate and discussion on this as we were trying to marry video and its illegitimate extra frame per second with celluloid film, to produce a print that would run at the prescribed number of 24 frames per second. Many technicians were aghast and violently disagreed with us at that time. Now, as we look back, we are amused at how technologies seem to have made a habit of upturning notions of the sacred and profane.

Pankaj had discovered some 8mm home movies of the days spent in Kalpi by his family, including footage of the inauguration of *Kumar Talkies*, which we could use in our film. So we found ourselves holding material in a multitude of formats: archival footage ranging from 35mm to 8mm, colour and black & white, in different aspect ratios. Plus we had 25 frames per second video footage, shot on Sony's brand new VX 1000 Mini DV camera.

Stuff that would excite filmmakers, one would imagine. But no – not in India. The mere mention of the things written about above would bring about a smirk, a raised eyebrow, and induce visions of muddy and off-colour prints among people who know the reality of film production here. Just a decade and a half later, we would witness the gradual but steady decline of celluloid-based film production and exhibition. Physical ways of working with the medium of film – and I shall call it 'film' for the purpose of this essay – have changed faster in the last fifteen years than at any other point in its history.

As far as film aesthetic is concerned, no single technological breakthrough has transformed it as much as the introduction of sound and colour did, almost eighty years ago. Much has been made of the move into the digital domain, but this by no means made for as dramatic a change in the language of film as talkies and colour did. But it did make production easier, quicker and cheaper as we moved from labour-intensive, photochemical processes to technology-intensive, software-driven ones. Each phase of technology has its own respective protocols, needing us to relate differently to our tools and implements, yet the guiding references remain those of celluloid film-based production. We still say that the camera is 'rolling', call our material 'footage', label

videotapes as 'exposed', and use electronic versions of 'bins' to organize our material in editing programmes. We have been turned into perpetual students who have to upgrade and relearn our craft every now and then, regardless of age or experience. And this is certainly not bad for filmmaking so much as it is a lament.

Let me say at this point that celluloid film is still the most reliable and beautiful way to produce images. It is a well-oiled system that has been developed for over a century. But it is also perhaps the youngest medium of art to head towards museumization within such a short period of its existence, driven by industries and economies too large to understand or rein in. People have been portending the doom of celluloid since the early 1970s, when television in the west switched to using videotape. Interestingly however, it is only now, when cinema distribution has become predominantly digital, that we are looking at the unspectacular last act and possible demise of celluloid, which may well go unnoticed.

Kumar Talkies, Pankaj's first film, was my first too. It was among the last documentaries to be filmed and printed on 16mm in India. And because of the crazy mix of different formats, it pushed the limits of every conceivable production convention known to us. It need not have appeared so blasphemous, but as standard practice we do not mix experimentation with our entertainment. At the time of writing this piece, I find that 16mm as a medium of exhibition is dying the world over, but not as a medium of 'acquisition' – the new term for shooting.

The objects related to 16mm films, now consigned to archives and oral histories, are things such as bobbins, sep-mag, SST and tape splicers. To describe these: bobbins are plastic cores that film reels were wound on; sep-mag, or Separate Magnetic film tape, was used for transferring sound; SST, standing for Squeezed Sound Track, often turned into the oxymoronic Silent Sound Track; and tape splicers joined pieces of celluloid film together. I remember collecting these for Kumar Talkies from well-wishing documentary filmmakers who no longer had any use for them in the late 1990s. There was much nostalgia triggered by the vinegary whiff of acetate coming out of old film cans, the smell of a thing well past, of a print or a negative disintegrating.

Avtaar Singh and Company near Masjid Bunder in Mumbai was the city's sole dealer in sep-mag. They were also wholesale spice dealers. In fact that was Sardarji's primary business: Indian spices and sep-mag produced by the French company Pyral – please don't ask me what the connection is. The tenuous links between art and commerce are always baffling!

Pankaj carried his beautifully designed, computer-printed proposal-cum-script wherever we went – to Kodak for rawstock and Prasad Labs for processing. Sivaraman, the lab manager, was highly impressed at being shown a documentary script before the film had been shot. It was a first for him and a novelty, designed as it was on CorelDRAW and laser-printed in full colour, both very new processes at the time. Kodak, suitably impressed too, promised us a few free cans of their new stock of Vision 200T and 250D to test on this film. I was extremely unhappy later, however, as these turned out to be oversaturated and contrasty compared to the muted 7287, which was our main stock, with its rating of about 250T. Some fifty cans of rawstock had to be carried by local train from Sanpada in Navi Mumbai to Pankaj's place in Kandivali, to avoid paying octroi. Mumbai is the only city in the country where a tax needs to be paid to bring goods in, but there are ways of giving the slip to octroi sharks waiting

at railway stations and checkpoints on highways, scanning all the vehicles coming in.

The film stock was kept in a cold storage facility in Sanpada, along with other perishables like fish, vegetables, spices, medicines and chemicals. From the outside it looked like a regular vegetable or fish market with coolies and goods vehicles, leaves, waste vegetables and garbage strewn everywhere amidst the bustle. It smelt of fish and various spices, predominantly turmeric, chilly and coriander. We were taken several stories up in the moist, freezing haze of the place, across see-through floors made with grids of thick pipes to facilitate cooling. One could see all the way down to the ground level as one walked on these. Tremendous cinematic possibilities there: slow and deliberate tracking shots with the camera pointed vertically down, or up, with different layers of movement on each storey! We were handed rawstock cans out of cartons, pretty much like vegetables – twenty of 7287, two of 7245, fifteen of 7279, etc. Then gatepass ... and goodbye.

When we came out of the air-conditioning the film cans were frosted over with moisture caused by Mumbai's summer heat. Our camera professor's voice rang clear in my ears: 'Let the stock regularize at room temperature for a few hours before opening the can, otherwise it will get dew all over.' On location in Kalpi, the cans would be kept in a refrigerator dedicated to film stock – a Pepsi cooler, to be precise, with a transparent glass door, rented from a local provision store.

'Why can't you ever see anything in art films?' That was a question asked by a friend's mother. How do I answer that? It might have something to do with the fact that most people watch them on television. How does one get into details about production budgets, poor equipment, rudimentary facilities, making video transfers from scratched and faded prints...? Proper ways of transferring film to video, such as making low-contrast positives for telecine or transferring from the negative seem like such luxuries, that more often than not these do not even come up for consideration. So let's be content with the fact that 'art' films go to video at all and that we do get to see them, no matter in what condition. I am not surprised that celluloid purists refused to make or show video copies of their films. I remember watching Mani Kaul's 'Nazar' (The Gentle Creature, 1989) on Sony Television, in the channel's early days, with a ticker running below the image disclaiming 'poor video quality from source material'. These copies were made before television and DVD sales became big revenue earners for producers, so making decent video copies was not among their priorities then. Good video copies for films produced by state organizations remain a distant dream even now.

Pankaj was making Kumar Talkies after mortgaging his Kandivali house to a multinational bank. Therefore, our budget was non-existent at that point. Having decided to go ahead and shoot on both film and video, we designed a rather complicated production work-flow. At the shooting stage, we filmed everything at 25fps (frames per second), to take care of the frame rate and audio sync problems between film and video. There were two considerations here. The film material had to be brought to the video platform for editing and the DV material had to be put on film eventually. And of course there was no money for telecine with edge-code for the film, or to work on a non-linear video editing platform.

The material that was shot went to Prasad Labs, Chennai, for processing. We printed 16mm rushes of all the material, which was synchronized on a 16mm pic-sync donated by a well-wishing filmmaker. This was then transferred to Umatic video for editing, without edge-code, by shooting off a Steenbeck screen, reel by reel.

Take a moment to absorb that. I could not tell day from night on the 4-inch pic-sync screen, leave alone match any sound to picture. And to shoot it off a dim, flickering Steenbeck screen! As they say, 'Majboori ka naam Mahatma Gandhi' – roughly translated, glorify your struggle by invoking the spirit of frugality and self-denial as advocated by Mahatma Gandhi. Or, like the Reader's Digest brand of inspirational philosophy: 'The struggle of today is the good-old-days of tomorrow.' I prefer to go by Tarkovsky however, who completely rubbished any glory associated with struggle in his diaries while talking of his disagreements with his father. Back to our self-styled guerrilla film: the synchronized film reels were played on Renu Saluja's legendary Steenbeck at Adlabs and transferred to video by shooting on a Sony DXC-537 video-camera at 18dB, auto-exposure.

The analogue video format of Umatic High Band became the common platform for us to marry the celluloid film material and the digital video (DV) for the edit. Strangely, the DV material looked shiny and new compared to the film rushes, because of the way the film had been transferred. At the end, Pankaj, a trained editor, visually matched the edited footage on Umatic with the film rushes painstakingly, cut by cut, without an EDL (edit decision list) or edge-code, to produce an edited film work print. It tires me to even think of this.

The edited video footage was upgraded from the DV original on Betacam, colour-corrected and shot off a high-end monitor on 16mm. This was then printed and inserted to get a print of the entire film in which film and video bits were mixed together. It gave us the cut list for the master negative. Tiring and frustrating, but this was the only way to do it. Also, we had asked for it by mixing formats that did not talk to each other.

2010 – filmmaker Dibakar Banerjee mentions, at the Cinematographers Combine workshop on new digital formats held in Mumbai, the nightmare he had while working on the post of his film 'Love Sex aur Dhokha' (2010). The film, shot on several digital formats from surveillance cameras to Sony XDCAM, had to be transferred to the super-expensive HDCAM SR for final post just to generate a uniform timecode, completely defeating the low-budget, consumer-format digital video acquisition process. The different shooting formats could not give the timecode needed for conforming and upgrading the film.

Then came the exciting and eye-opening reality check in the making of Kumar Talkies. We had to duplicate sequences from several old films – The Lumiere Programme (1895), Jhansi ki Rani (dir. Sohrab Modi, 1953) and, most importantly, Mughal-e-Azam (dir. K. Asif, 1960) – for inserting into the film. The master positive of Mughal-e-Azam was with Famous Cine Lab, Tardeo, where a Gujarati-speaking Punjabi gentleman called Sethi offered us cutting chai and showed us the print kept in blue plastic cans. Let me say this aloud: I held the print of Mughal-e-Azam in my hands and looked at it under a magnifying glass – Madhubala and Dilip Kumar!

Sethi showed us their sleeping processing tanks. Old Bell and Howell contact printers, and a Debie optical printer. All these objects were covered in shrouds. The best films of Hindi cinema's black & white era had been processed here. It was a humbling, overwhelming moment. Most producers had taken their negatives out by now – Navketan, Guru Dutt Films and RK Films. The lab did get used once in a while when some old film had to be reprinted, or some low-budget, regional-language people landed up to make films. But what about processing since their tanks were all full of dust? We were told that prints were struck here and then sent to another

lab in a different part of the city for processing. No tests, standardization or further correction was possible. The lab did not even have a preview theatre any more. They told us they made trailers for films on camera negative film as producers did not wish to spend on intermediate stock.

The Mughal-e-Azam dupe was struck at Famous Cine and sent to Cinelabs, in Prabhadevi, for processing. It was printed on 16mm positive and screened for us using a dim Photophone projector. I rejected it right away. It had blotches all over, almost as if the print stock had got stuck to itself and was then ripped apart for use. A visit to Cinelabs revealed another reality altogether. The processing plant was not in working order but the chemicals were in place, so the lab in-charge had hand-processed our dupe negative and print of Mughal-e-Azam! This was too much reality for me to handle on my very first film, fresh out of film school as I was, and the sight of rats scurrying around the lab did little to assuage my crashing idealism for cinema.

In 2009 I was hard-pressed to find a place that processed 16mm black & white and I might have settled for hand-processing. The material shot on Kodak Double X was to be pushed one stop and possibly blown up to 35mm. No lab in India could do it. Gamma tests at the FTII (Film and Television Institute of India) lab in Pune yielded six different values in the course of one day. We finally sent it to Du Art, New York, which did a fantastic job: greys, grain and blacks the way they should be on Kodak black & white film. But Du Art shut shop soon after that, while our film was still being edited. At present we are looking for a lab to finish the film and there is no budget to take the digital intermediate route. *Déjà-vu!*

Adlabs was still in Andheri then, and we decided to make colour dupes of all the archival material. There was jubilation at the lab about the arrival of the master positive of Mughal-e-Azam. The lab scratched all our negatives and dupes. There was a big scratch in the middle of the frame of the dupes and video material transferred to film. The dour fellow in-charge of 16mm was unaffected by our protests and complaints. I was told impatiently there was no reason to worry as liquid-gate printing would fix the scratches and that they had years of experience in this. Years of experience in what, I wondered – scratching or liquid-gate printing?

My father called from Delhi to ask if he should invest in the shares of Adlabs Films as their public issue was coming out soon. I firmly advised him against it, going by my experience. But the market was gung-ho about them, he said. Adlabs did very well for a while in the stockmarket and then fell. Anyway, all that is history now, with them having been taken over to become a part of the Reliance Media Works conglomerate. Some years later my father asked me the same question about Prime Focus.

'We lose money on 16mm, but continue to process it to support documentary and independent filmmakers', said Sivaraman at Prasad Lab, firmly discouraging any fussy demands from us. They were in the throes of making 900 prints of the blockbuster *Dulhan Hum Le Jayenge*, and we had landed up at this huge industrial laundry of film with one set of underclothes in 16mm format. Total number of prints to be made: one.

The closest I have come to feeling like an expectant father is while waiting for a print at a lab. Watching the frames go by against the light box as they come out of the tank, still smelling of fixer, trying to move your eyes along them and then back quickly to get a sense of motion within the frames. The first screening of the first print in a darkened theatre when the arc is actually lit and the leader counts down to the first frame of the reel – moments so full of anticipation! You know the film is done but you

are still on edge, expecting disasters, at a point when you cannot even judge the film any more. I think it has as much to do with the mystery of a freshly developed print as with the act of sitting alone in the cold, dark preview theatre of the lab and hearing the whirring of the projector which reminds you that this print is final.

The liquid-gate printer did fix the scratches. We had a shiny new 16mm married print of our film. It was a big moment as this was the first print of the first film for both the director and the cameraman, and the film was finally completed.

'Why do I have to be an engineer in addition to being a film editor?' This was a friend's exasperated question, circa 2011, while struggling with a big post house whose executives were fumbling with the work-flow of the Red camera and not quite getting it right. 'Why do I have to know things I don't really need to know as an editor?' Whether one likes it or not, one needs to know these things now, with different versions of software, hardware and plug-ins altering them periodically. No wonder everyone still swears by film. It is, after all, lubricated by over a hundred years of work.

Mechanical systems are not as fickle and do not change as fast as electronic ones do. 'Electronic' itself is a large envelope in which we place disparate technologies: technologies that broadly serve the same purpose but may contain completely different elements inside the box. I like it. Silly jokes mocking incomprehensible new technologies did the rounds for a while. 'Hardware is what goes in. Software is what comes out.' And: 'Why are people in Chennai averse to working on digital? Because they are all "anna-log".'

A few months ago, a bunch of us cinematographers were invited to a seven-star hotel in Mumbai for the launch of a new Sony HD camera that uses a 4:3 sensor and PL mount lenses. A friend jokingly remarked, 'Now we'll have to get our drinks and lunches out of Sony and Canon' (instead of Kodak or Fuji). Talking to technicians about craft usually ends up being a free-flowing crib fest, lubricated by much alcohol. For me, however, it was never a contest between film and video. The two did very different things. The cost-effectiveness of video, especially after DV came in, led to easy access and democratization of the medium. It made shooting simpler and freed filmmakers to experiment with form if they wished to. Mainstream feature film production was so tied to distribution systems and production formats that it was the documentary and independent films that were engaging with experimentation, as they were never faced with questions of distribution or constraints of market expectation and demand. Now, with feature film post-production having gone completely digital, filmmakers are, to some extent, free to experiment with different ways of story-telling – and we have seen some great examples of this in the indie circuit. Still, the advent of digital has not facilitated much that could not, at least theoretically, be done when we worked on celluloid with the photochemical process.

The look of our films was, and still is, defined by the possibilities of the production and post-production chain. We talk about the realistic, warm skin tones of Kodak, the rich greens of Fuji, and the overall loud primaries of Agfa. What defined the look of films at every stage was this giant of an industry and its way of treating the material. Film has its characteristic look, as do the various video formats. Documentaries looked the way they did because of the one-third-inch sensor cameras, Sony's and Panasonic's realistic tones, or Canon's yellow sensitivity. Feature films look the way they do now because of the 2K production chain and the colouring systems used.

Before we even realized it, there was a need for films to go on to the internet, be downloadable and viewed by a wholly different audience in hitherto unknown viewing cultures. We looked down on this, like we did with television. The market is smarter than we can ever imagine and the industries surrounding our work slap us romantics awake time and again.

A cinematographer friend, talking about the first screening of a film print at a lab theatre, told us how the director pulled out his iPhone, played the film on it and remarked: 'The colours look much better here.'

So there we are. We see boys huddled around mobile phones at street-corners watching god knows what – probably porn. But they also attend house-full shows of the latest Salman Khan blockbuster. I personally don't think it is a matter of one against the other; rather, there is much more to choose from in ways of making and engaging with the image, cinematic or otherwise, than we had ever imagined. I don't think the mobile phone is going to seriously inform the filmmaking aesthetic beyond what television has done already by the use of extreme close-ups and faster edits. The big screen continually shrinks to smaller and smaller sizes, necessitating faster moving images to arrest eyeballs forever lured by competing stimuli, not to mention tickers and pop-ups where content and commerce merge.