LASER DISC REVIEW

JANUARY 1988

ISSUE 15 £1.50

Australia $5.50
U.S.A $3.50

All Show & No Go ?
· CD Video Launch Slips

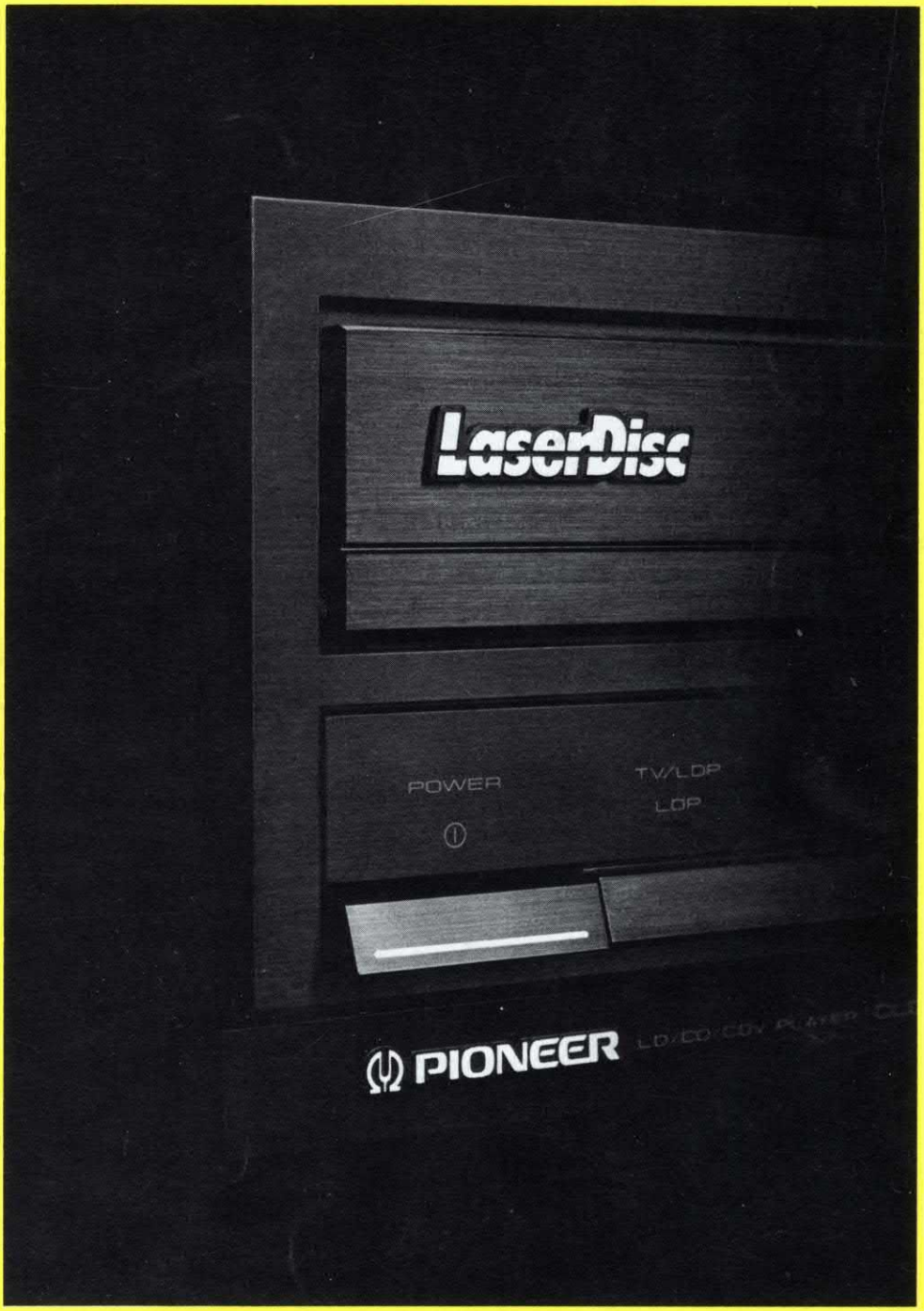
How LV Discs Are Made
· Pt 2

U.S.A. Report
· The LV Scene From Behind The Counter

Japan Report

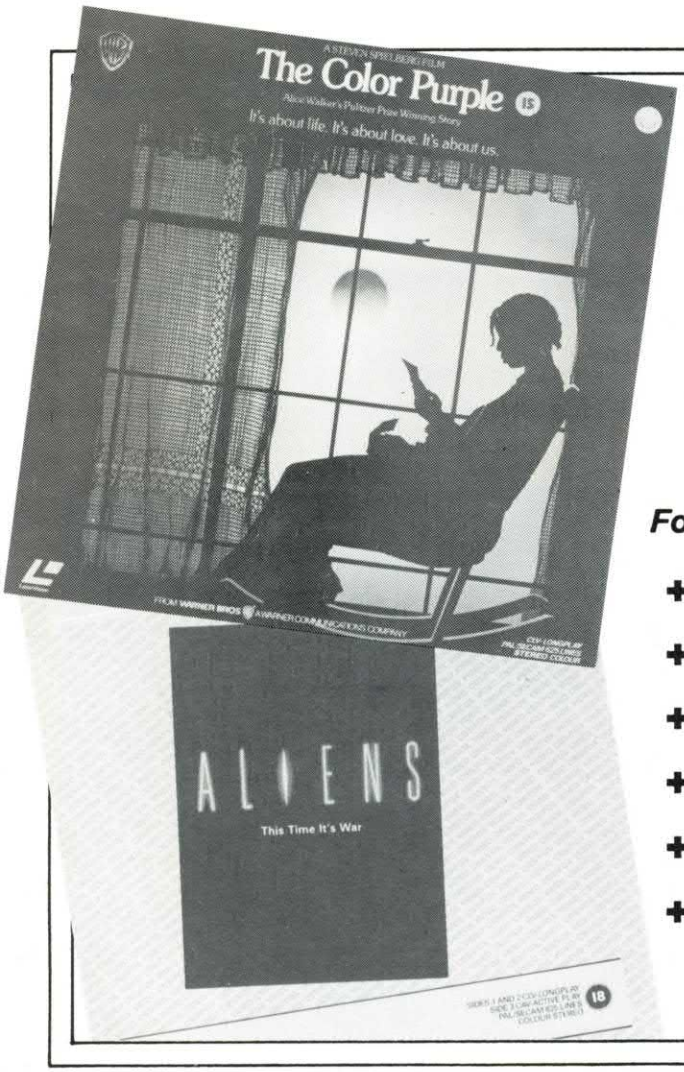
CBS/FOX drops out of disc ?

CD Clips Reviewed



The first PAL CD/CD·V/LV Combi Player reviewed

PIONEER CLD-1050
the first pal combi player



CAMBRIDGE VIDEO

LaserVision

COMPACT disc DIGITAL AUDIO

CD VIDEO

8 SEYMOUR STREET
CAMBRIDGE
CB1 3DQ
Telephone (0223) 213042

For all your LaserVision and CD requirements

- ALL NEW TITLES AVAILABLE ON RELEASE DATE
- EXTENSIVE BACK CATALOGUE SERVICE (Titles from only £4.00)
- PLAYERS AT COMPETITIVE PRICES
- MAIL ORDER FOR UK AND REST OF WORLD
- TELEPHONE ORDERING SERVICE
- ACCESS, VISA & AMEX

SEND OR TELEPHONE NOW FOR LISTS

The Original Audio & Video Discount Sounds

20 Chadwell · Hertford Road · Ware · Herts SG12 9JY · England

Telephone: 0920 61339

If you are looking for that professional Mail Order Service that does not treat you like a number, that strives to give you a 100% personal attention and also caters for all your needs in requiring all of your CD Video Discs · Compact Discs · Films on Video · Music on Video and all of your other Audio and Video needs, then look no further as I can do all that and much much more, like a 24 Hour Answer Phone and Ordering Service, Big Discounts all the year round, Export Orders delivered anywhere in the World, plus an elite **Personal Mail Order Service** that is second to none.
So why don't you get in contact with Andrew, who will only be too pleased to help you out. So don't delay, just send a £1 stamp and I think you will be pleasantly surprised by what arrives through your letter box!

In the meantime, look what's on offer for you:

Albums and Tape Cassettes
From £1.65

BETAMAX Blank Video Tapes	From £1.65
CD Video Discs (12cm)	From £4.95
CD Video Discs (20cm)	From £9.65
CD Video Discs (30cm)	From £3.85
Compact Discs	From £5.65
Films on Video	From £4.85
Music on Video	From £3.75

VHS Blank Video Tapes
From £4.20

LASER DISC REVIEW

ISSUE 15

JANUARY 1988

EDITOR & PUBLISHER ... Philip Parr
DESIGN & LAYOUT . Gillian Tilbrook
CONTRIBUTORS ..... Craig Hyland, Marc Comfort, Tony Parkin

Laser Disc Review is published between 4 - 6 times a year.

ISSN 0267 - 9671

LASER DISC REVIEW
PO BOX 526,
LONDON, UK
SW10 9AB

Tel: 01-351 4535

SUBSCRIPTION RATES -

Single copies of LDR are £1-50 sent anywhere in the world. For those outside Europe who prefer air mail delivery the cost is £2.50.

The reduced rate subscription is £7-50 for six issues. This rate applies worldwide via surface post. For those outside Europe requiring air mail delivery the cost for six issues is £12-00.

Your subscription has expired if there is a cross in this box. ☐

Payments may be in cash or by cheque, PO, Banker's Draft, IMO or GIRO (to a/c no. 55 521 2009). Make all payments out to "Laser Disc Review".

Cheque payments in US $ are accepted, but you need to add an extra $5.00 to cover bank charges incurred this end.

We can accept $ bills and any Common Market currency notes without such charges, and this may be a preferable means of payment if bank/commission charges prove prohibitive. (For currency payments calculate an amount in your local currency closest to the relevant subscription charge. Overpayments will be credited with additional issues.) Otherwise only payment in £ Sterling is accepted.

Please indicate whether you are renewing an existing subscription or ordering a new one. State the first issue you wish to receive also (by number).

Laser Disc Review welcomes correspondence, but if you require a reply please include an SAE. Allowance should be made for the length of time taken to reply - the production of the magazine always being the first priority.

Printed in the United Kingdom by:
Kingprint Ltd., Orchard Road, RICHMOND, Surrey TW9 4PD.

Did We Peak Too Soon?

We start off with an apology. There are no disc reviews. This is an LDR 'first' - and we trust - an LDR 'last'. They had us all geed up for CD Video and we bashed out a magazine to stay up with the crowd, but at press-time we only had four new discs. Well, one we didn't actually have **here** (but it's definitely out) and one of those we did have we wanted to leave awhile to deal with in a group review (*Friday 13TH - Part 3*). This left just a couple of titles and, quite frankly, it just didn't seem to make much sense to try and pretend to have a review section when, in fact, **there are no discs!** If this is CD Video - we pass. (Any new hardware manufacturers contemplating joining the CD Video party - please bring your own discs. Please.)

It is doubtful whether, in the more than twelve months since LDR-9, we will manage 50 new LV releases in the UK. This just isn't enough. Readers of this magazine will not need telling this. But even dealers who've stuck by LV are are now beginning to feel left out. Not even Lightning (which is supposedly in charge of the new releases) seems to know when shipments of new discs are going to arrive.

To cap it all, the CD Video promotion looks to be very likely to pass established LV dealers by - whenever it happens. None we know of (other than the large multiples) received any of the initial CD Video Clip discs to sell. One LV dealer ended up buying copies of the Level 42 disc from another local record retailer, just to keep his own customers supplied. This is no way for business to be conducted - unless the inference from the Philips/Polygram group is that they no longer want (or need) these traders. On this basis, it would be unwise for any of us - consumer or dealer - to lapse into any secure feelings that they will be 'taken care of' during the transition to CD Video.

This rubs off too on the supposed Philips trade-in (that this magazine genuinely knows no more of than is published here). What we do know is that some readers have been contacted by a Philips marketing agency about the sort of trade-in deal they might be interested in. From Philips direct (to us) there is only the hint of something in the region of the value of a couple of discs. That's all we know. If you want to know more phone them - not us.

The next issue of the magazine (with disc reviews) will be published late Jan/early Feb. There's no point in bringing it out any sooner - and this should be as good a way of getting our next and last point across without being any more specific.

CONTENTS

LETTERS

[Is this man paying as much attention to his pixels as he really should be?]

From: J.L. Bingham, Manchester

Much has been said in LDR about the steady improvement in resolution of both domestic TV sets and the new generation of laser disc players, plus of course, the improvement in sound quality we can expect from digital soundtracks on all our future discs.

Unfortunately, to take TV first, the picture quality of domestic sets is **worse** than it was ten to fifteen years ago (although you wouldn't think so from the adverts for new sets!). The reason for this is mainly economic. All modern sets use 'in-line' tubes with very poor horizontal resolution (irrespective of the standard of their electronics) of only some 300 to 400 pixels. Before these in-line tubes became popular all TVs used a delta-gun tube (characterised by very small dots in a triangular pattern instead of the in-line tube's fairly coarse vertical stripes). These tubes were capable of resolving (typically) 750 pixels horizontally, about twice the resolution of a modern set!

The trouble with such tubes is that they are precision instruments and therefore expensive; they also take quite a lot of time to set up correctly. Even worse for the manufacturer, the electronics have to be good enough to cope with a full broadcast bandwidth signal if you are to actually see the finest detail of which the tube is capable. So, using a tube with a poorer resolution means an all-round saving in manufacturing and maintenance costs; most people don't notice the difference and sets can be a lot cheaper. Just to help things along, many households have the dreaded VHS machine and most TV programmes are now originated from multiple generation copy videotapes with limited bandwidth "Minicams" as the main cameras - leading to poor source material, even if you do have a high resolution set.

Just a thought.... are we being conned into believing that our present system is so poor that we'll all rush out to buy an HDTV system as soon as they reach the market? In fact, a 27" (69cm) set at about two metres (with 600 by 800 pixel resolution, the 625-line broadcast standard) has a fine detail structure just on the limit of the resolving power of the eye! How much better do we need to go than that!

Now, what about the new discs and players? Please don't knock the elderly Philips 600 & 700s. That costly and fragile HeNe (helium-neon) laser can resolve about 30% more fine detail than the new generation of solid-state lasers! The reason is that it has a wavelength of about three-quarters of that of the solid-state laser, and resolving power depends on the wavelength of the light (that's why a blue laser is used to cut the master disc - because it has a much smaller wavelength and can therefore resolve the finest detail). Solid-state lasers are now being produced with a shorter wavelength output but so far these are only experimental, not very reliable, and extremely expensive! The longer wavelength solid-state lasers used in current players are very cost-effective; if you take the power supply into account the whole laser unit is only about one tenth the cost of its HeNe counterpart!

I seem to be one of the few voices raised against the switch to a digital soundtrack for LaserVision (sorry, CD Video!). I wonder if the disc buying public really understands its advantages and (just as importantly) its disadvantages? I would have thought that to switch systems (and thereby render every LaserVision player in the country obsolete) could only be justified if the advantages of digital sound totally overwhelmed any disadvantages (like having to buy a new machine, whether you want to or not!).

It seems strange to me that we are going to lose an excellent system (which is capable of upward improvement) for one that is rigidly fixed and incapable of future developments without once again forcing us to buy a completely new machine. (Perhaps that's the whole idea!) The digital format has now been fixed, the first discs are now pressed, and we are stuck with a system, which because of its complexity, cannot be easily changed in the future.

The analogue sound system as used up

to now, however, is capable of sound quality at least as good as the digital system, because it already has (effectively) infinite resolution as opposed to digital's one part in 65536. It has a much lower high-frequency phase error than digital because of the simpler filters needed in recording and decoding and (because of its far higher sampling frequency and lower recording bandwidth requirements) there exists the possibility of future expansion to give a wider frequency reponse and/or true four-channel sound (or dual language stereo capability) while still retaining full compatibility with even the oldest disc players. Plus, of course, the analogue decoding circuits are far simpler and cheaper than than digital decoders. And we've been forced to lose all this! In short, if the new digital discs have significantly better sound than the analogue ones then you can be sure that it isn't due to digital recording!

Another aside: since the complete output stream is available from the decoders of the "analogue" players wouldn't it be possible to add a 'digital' decoder to existing machines at this point in the circuit? After all, a handful of chips must be a lot cheaper than a new machine. The only difficulty I can see is that the disc rotation motor may have to have its servo signal derived from the digital board.

I suppose it's too late now to put in a word on behalf of just about everyone I know with players - please Philips, (if you ever listen to what the customer wants) can we continue to have printed card sleeves on our discs? I don't know of anyone who likes the idea of CD-style jewel cases.

Just to finish off with: if you want to see how good 625-line TV can be, then I suggest you buy a real monitor instead of a TV set (say a Barco medium resolution 27") and a high quality tuner. And, if you've got a very generous Bank Manager, then drive the monitor from a Vistek varicomb PAL decoder. I wish I could afford to!

Thanks for a great mag guys!

● Although the original HeNe lasers are theoretically superior, both the Pioneer LD-700 and CLD-1050 resolve more detail than any of the old generation of players we've managed to get our hands on. One suspects the improved tracking afforded by the smaller and more mobile solid-state laser assembly is responsible for the apparent contradiction.

The improvement in picture resolution can be verified by synching up two matching discs and switching between them, or generating a picture of a known resolution - such as the *Domesday* BBC Test Card. Both exercises were undertaken with the CLD-1050 and the new player outperformed the old 600 on both occasions.

The only trouble is that it wasn't possible to do this on the Sony Profeel because, as your letter indicates, we seem to be getting past the point at which this particular TV can resolve such fine detail. (Coincidentally, we must have the same Bank Manager - because ours won't lend us money to get anything better either!)

From: Mark Dowd, Merseyside

Concerning my previous letter about ***Highlander***. The original BBFC timing given was extremely helpful, and having used this to check out the true length I am happy with my findings. I found the disc to be short by the length of the scene missing, so the tape must be correct. I am returning my disc for replacement. You may think it strange I am happy to find a disc at fault, but it is not strange if you think carefully.

Had the disc been the correct version then there would have been no legal way of acquiring the full version on disc. With the disc being at fault there is a small chance (or maybe a better than small chance) that a full version will be prepared for CD-V. In the meantime I'll have to put up with a duplication of the tape. A duplicated tape is nowhere near as good as a disc, but at £70 I'm not going to buy one.

P.S. Concerning CD-V packaging, I think 20 & 30cm discs should be in regular cardboard sleeves. The artwork can be made to appear like they are in plastic jewel boxes. Using this form of 'creative' artwork will make the sleeves as light and as cheap as now.

From: A. Thomasone, West Yorkshire

Way back in the sixth edition of LDR there was mention of ordering up a custom pressing of the discs ***Cat People*** and ***Funhouse***. Could you tell me if any progress was made in getting these discs pressed? Are custom pressings a possibility and, more importantly, financially viable? Also, what's happening about the release of the Entertainment In Video titles such as ***Day Of The Dead***?

● The now-defunct Reliable Videos in Birmingham planned to issue the two CIC titles at one time. Both Reliable Videos and its proprietor, Peter Lennon, have ceased trading - so nothing more will come of this proposal.

If it helps any, a report from a reader who acquired the recently released cheap VHS tape of *Cat People* reported it to have the same defective soundtrack as was on the original LaserVision disc, indicating the master is still not really worth bothering with. As far as *Funhouse* is concerned, there is doubt whether this ever got pressed in the first place and if there was therefore an available stamper in existence for it. No-one has ever seen a copy of the disc and it looks as though Philips (who were then in control of issuing titles) got cold feet about the film while the then-current anti video-nasties hysteria was going on. Again, some compensation comes from the fact that the sleeve says nothing about the disc being in stereo, which it should be (Dolby Surround, actually.) Well set up readers with the appropriate equipment (and cash) can, of course, acquire a copy of *Funhouse* from Japan (with subs), and *Cat People* is available both there and in the US.

As to the Entertainment In Video titles, here are some relevant excerpts from a letter (dated August 1987) sent by Edinburgh dealer, DH Audio Visual/The Laser Centre, to those people who enquired about the proposed releases.

" As you are no doubt aware, the release of a new CD Video player is forecast for the end of 1987, and this has resulted in protracted negotiations with Entertainment In Video. "

" It would appear these negotiations have been abandoned by Entertainment In Video, at least until they are certain that analogue pressings will still be acceptable to the new CD Video buying public. "

" The good news is, negotiations with MGM/UA are proving more successful. As you are probably aware, MGM did release on LaserVision in its infancy. Unfortunately the product did not sell in sufficient quantities to entice them to continue. Unlike Entertainment In Video, MGM is not concerned as to the prospect of analogue pressings being discarded in favour of digital. Like us, they feel the priority is price, availability and catalogue. "

Further embellishment to these statements was forthcoming from David Henry of The Laser Centre in September (that was unfortunately excluded from LDR-14 at the last moment - for the usual space reason). This amounted to a series of comments to the effect that MGM/UA had, like Entertainment In Video, become similarly vague when it came to organising some practical outcome to the negotiations. As of this moment this MGM deal also looks like going nowhere. (We were, of course, unable to take the matter up with MGM/UA direct because, as you may remember being mentioned before, the UK branch of the company has been variously besieged by auditors, on holiday or just plain unwilling to talk.)

Further developments on the Laser Centre's disc plans will appear elsewhere in this issue if anything new happens. For the sake of completeness it is worth pointing out that yet another dealer attempted to get a title issued on disc just before last Xmas. This particular film (*Santa Claus - The Movie*) was cleared with Cannon for release but was scuppered by the fact that it could not be pressed in time for the Xmas market, a crucial factor with such a seasonal item.

Your question about the financial viability of such projects would seem to be answered by these very attempts to get more discs released - none of which

has been held up over matters of price. However, an increase in the number of players out in the marketplace can only make it easier to do custom pressings if rights holders are unwilling to take the financial risk to issue their own titles themselves.

From: Eric Putt, London

Following the query raised in the ***Buck Rogers In The 25TH Century*** review in LDR-7, I thought I would try and explain why an NTSC CAV disc made from a film may only give 1,440 frames per minute according to the display given by the player, even though there are really 1,800 TV frames-per-minute.

The broadcast TV systems all use interlace scanning. This means each picture of 525 lines (NTSC) or 625 lines (PAL) is scanned twice, each scan (or field) having only half the lines of the TV frame. One field scans every other line of the frame and the next field scans the inbetween lines. We call these odd and even fields. A laser disc of the CAV type has two fields per revolution and the still frame is obtained by jumping into the adjacent track after two fields, and so repeating the same two fields over and over again. (See LDR-8, p.30 for more on this.) So far, it doesn't matter which type of field the jump follows, but it must not jump after both.

Now consider a film shown using the 625 line/50 fields-per-second TV standard. Each film frame is scanned twice, giving the two fields. (The film is running slightly fast to bring the regular 24 frames-per-second film speed up to the 25 frames-per-second, 50 fields, of the PAL TV system). For a still frame it is important that the jump occurs after the right type of field, so that the two repeated fields were derived from the same film frame, otherwise any moving objects will be shown in different positions on the two fields. The disc player is guided when to jump by code marks added to the video signal recorded on the disc.

The 525 line NTSC system has 60 fields-per-second, giving 30 TV frames-per-second. Showing a film shot at 24 frames-per-second at the 30 rate would be a bit too fast! One way round this problem is to show alternate film frames with 2 fields and 3 fields. So, with 24 frames in one second we have 12 frames with 2 fields and the other 12 frames with 3 fields, giving exactly 60 fields-per-second. For a still frame we still need 2 fields repeated continuously, so with the 2-field type of film frame the jump must occur after the second field. With the 3-field type the jump can occur after the second or third field - either position could have the guide marker but there's no point marking both since the pictures would be the same. Thus we now have 1 still picture for each film frame and 24 x 60 equals 1,440 per minute. The frame numbers which the player can display are coded into the video signal by the disc manufacturer (the player doesn't 'count' TV frames) and in the case quoted the numbers match the number of different pictures you can see - ie. the number of film frames, not the number of TV frames.

From: Terry Riley, Australia

What is going on in relation to the soundtracks on CBS/FOX titles? OK, they are in stereo and ***Commando*** was not bad, but three other titles I have purchased over the last few weeks are simply horrible. ***9 1/2 Weeks*** was probably the best of a bad bunch. As you stated in your magazine there were moments of fluctuating hiss, but overall it's dynamic hi-fi and passable.

Enemy Mine - well, that's another story. It's the pits. Talk about the second side of ***Never Ending Story***. The hiss was so bad it made it an instant reject. ***Aliens*** - a great movie but I was not really excited in getting my copy after reading your review. I would like to rewrite, if I may, what your reviewer has written - "The usual CBS/FOX hiss was present which I found very obtrusive during most of the film". Another reject.

I just cannot understand why, in this day of modern technology etc, how we get discs dished up to us that are so hissy, especially when they are modern Dolby Stereo blockbusters. Hiss in surround sound!

More problems - this time with Warner titles. 36 minutes into side one of ***Friday 13TH*** (which I might add was rather hissless and great to see intact) red horizontal lines flash through the picture at intervals of 6 to 8 seconds, together with a momentary loss of colour. This lasts for approximately one-and-a-half minutes and the disc is not scratched in any way. I exchanged my first copy but to my dismay the second was the same.

However, that's nothing compared to my copy of ***Pirates***. 42 minutes into side one, and lasting for a full ten minutes, the same problem occurs. It also happens on side two, starting 37 minutes in and lasting approximately 3 minutes. I would appreciate your advice as no-one over here can help.

● Gauging a level of acceptability with discs under review is a constant challenge. In absolute terms, nearly all feature film titles that turn up on disc are sub-standard in respect of picture quality. A major percentage is, in some way, wanting in the audio department. However, it would seem that disc buyers in the UK are remarkably accommodating when it comes to accepting inadequate product (ie. to our knowledge, no-one has yet rejected their "stereo" *Weird Science* after finding it to be mono).

To the specifics of your particular complaint; yes, the CBS/FOX titles are hissy. Some of this is down to the noted treble boost they seem to give their UK masters. With *Commando*, for example, the magazine had the opportunity to audition both the American NTSC and UK PAL versions. The US disc was apparently, on first hearing, significantly less hissy. Further investigation revealed that there was a definite loss of treble information on it. Equalised the two discs showed similar hiss levels. This might suggest the hiss on some CBS/FOX titles is on the original transfer.

The hissy titles mentioned in your letter are possibly a little over-emphasised in the treble, but even with tone compensation there is no getting away from the fact that they have more background noise than they should.

Dolby Stereo enhancement is no guide to the sound quality of a movie on video. (*Weird Science* again!) This is particularly true when the audio is taken from a separate magnetic mastertape, as would appear to be the case with all the titles under discussion. Additionally, most Dolby Surround decoders available at present use analogue delay for the rear channel. These devices tend to be hissy when boosted to too high a level. A decoder with a digital delay will give less hiss in the surround channel.

The problem with discs losing the colour signal - usually towards the latter part of the disc side - has been cropping up more and more in the last few weeks and so far seems to be restricted to the new CAA discs (as described on page 29) when played in Pioneer LD-700 players. It has also cropped on the very latest CLD-1050 player with the same CAA discs. We seem to be encountering a slight incompatibility problem, though it has not been possible to extract any explanation of the phenomenon from PDO, Blackburn in time to enlighten readers further this issue.

All one can say with any certainty is, if you are encountering this problem with your player and the new discs, it's probably not worth your while going through endless replacements or the acquisition of new titles until the incompatibility has been resolved.

From: Selwyn Ward, Kent

Have you considered the possibility of publishing comparative reviews of monitor TVs? It'd be interesting to see LDR's demanding standards applied to the Profeel, Matchline and similar ranges.

● It is a logical and appealing endeavour to contemplate - no matter how good the signal source it's the box strapped on the end of it that is the ultimate judge. In a moment of (presumably) rash impetuosity, a manufacturer did recently suggest loaning us their new monitor TV for just such a review. It's quite a big job to undertake, but given a slack month in the world of disc we might just take the offer up.

Croc Bites Dust

You may have heard about a couple of cuts made in the UK home video version of ***Crocodile Dundee***. The cuts in the LV disc version are more dramatic still - the complete title has been withdrawn from the new release schedule. Blame not the censor, though. Some internal price restructuring within the CBS/FOX organisation has resulted in all prices of home video product - disc and tape - being harmonised ie. ***Crocodile Dundee*** will now only appear on disc if folks are prepared to pay £70+ for it.

Not surprisingly, Lightning believes this sort of price to make the release of this and future CBS/FOX titles something less than a going proposition and ***Short Circuit*** and ***Peggy Sue Got Married*** have been cancelled for disc release too. Only ***Alien*** (a re-issue) and ***Mosquito Coast*** (already in production at the time of the decision) remain to appear from the existing schedule.

The change in CBS/FOX's pricing is a result of a corporate decision from within the American parent company. One looks forward with interest to see whether US LV disc prices are amended accordingly.

The CBS/FOX decision is designed to structure product to fit the various rental and sell-through windows. The high initial cost price covers the rental period, and when titles no longer stimulate any returns for such dealers, the titles will then be repackaged for the sell-through market (a field CBS/FOX UK has just entered with its line of £14.99 VHS tapes). Presently nothing has been scheduled for their sell-through line that is less than two years old, so the wait for ***Crocodile Dundee*** on disc might be a long one. More optimistic readers might hope for a change of tack from CBS/FOX when CD Video gets under way - but don't depend on it.

Dragon Still Healthy

Details are now to hand as to how to obtain a copy of the ***Dragon's Lair*** videodisc. At present you have to send off to the US to obtain a copy, but it is a PAL disc and will play on your PAL LV player.

The cost of the disc is $25.00 per copy and remittances should be sent to:

Scott Edmunds,
103 N. Highway 101 # 217,
Encinitas,
CA 92024,
USA

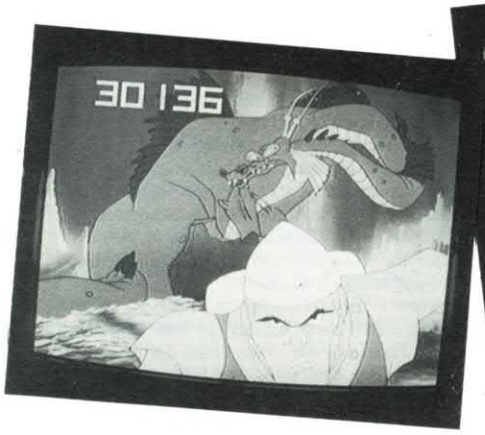
Tel: (619) 931-7921.

Dealers wishing to obtain quantities of discs should enquire direct about bulk rates.

The ***Dragon's Lair*** disc is single-sided and comes in a plain white sleeve. It is in CAV but there is no control software encoded on the disc itself and the programme will play only as a linear sequence on a conventional LV player.

To exploit the alternative routes through the castle in the intended interactive manner it will be necessary to use the disc with a computer-controlled disc player, and most importantly, write the appropriate software. Therefore some knowledge of computer programming is necessary.

A previous report of the Cornwall based company, Microdeal, developing the appropriate software for use in conjunction with an Atari ST computer is now worth updating. It transpires that, contrary to previously given information, the Microdeal software package is far from being ready and no date has been given as to when it will be. Effectively this means that anybody who wishes to write a package for any other range of computers will not find themselves doing so in a particularly competitive environment.



CAR OUT

"We've got to figure out a way to make these things smaller" - 1941, the movie.

If you can't wait for the day Philips markets its Compact Disc-based navigational system (CARIN), then calling in at one of Shell's re-fitted filling stations might stay your appetite awhile. Within certain of these stations Shell is installing a Traveller's Check shop where one of the features is a LaserVision disc-based interactive video console that provides motorists with local, regional and national route planning information. Some installations incorporate computer graphic overlays to display relevant local information.

The consoles are of the touch-screen variety and customers can avail themselves of an adjacently positioned notepad to copy down the information they have extracted from the disc. By the end of the year more than a 100 Shell sites throughout the UK will have been equipped.

Philips VP405

While with Philips Interactive Division, news comes of a new, simplified player in the 400 series range - designed to provide a minimum cost, no frills option for more straightforward commercial/educational applications. Called the VP-405, the new player (which will be available before the end of the year) looks externally identical to the existing VP-410 but is internally less rugged.

Bits & Pieces

[][][] Want a new PAL Combi player? Stereo Regent Street in London can supply these now. Also available is the latest multi-voltage NTSC version, the CLD-1010, for £700. (Tel: 01-491 7922.)

[][][] Did you spot it? Our Undeliberate Mistake Department advises of a correction to the info on the Denon Combi player illustrated on page 20 of LDR-14. The text describes this as a Yamaha clone, when in fact it is obviously a Pioneer CLD-70 underneath its most attractive exterior.

[][][] Weighty matters - Samples of those now-abandoned jumbo jewel boxes have been subjected to an appraisal, courtesy of the scales at our local post office. A conventionally packed, Blackburn manufactured 30cm LV disc pushes the dial round to 330gms. The same disc placed in the plastic marvel sends the pointer whizzing round to the 820gm marker! Goodbye plastic, welcome back cardboard.

[][][] From the US music trade paper ***Billboard*** comes this story of a Brooklyn, New York videodealer's attempts to drum up trade by putting a 50" projection TV in the store window - "We put on a good action movie and it attracted the rumdums. The next night they came back with folding chairs and wanted to see the whole thing. Next night they requested an Eddie Murphy movie, so I put on ***Alice In Wonderland*** and only two stayed. So the next night I put on a Japanese movie and only one stayed. So I figured if I put on ***The Care Bears*** next, that would finally get rid of them. But that brought in a whole new group - the yuppies, who stand around singing and dancing with the Care Bears!"

CD VIDEO

All Show & No Go?

Japan - With the Philips/Polygram showing of CD Video at the Tokyo Audio Fair in September the product has now completed its initial launch phase in the three main territories. (Though quite what the Japanese made of the Humphrey Bogart soundalike dubbed into Japanese....!) Presently it is only in Japan that both players and discs are freely on sale. With the proliferation of conventional large-disc software there, the CD-V Clip is being seen by the Japanese as just another facet of an established technology.

U.S.A. - In the other NTSC territory, the USA, the CD-V promotion will now be after Xmas - not as announced at the Chicago CES. Pioneer is selling its CD-V capable Combi player already, but there are no Clip discs on sale. Yamaha's CD-V1000 Combi is being given some press exposure and looks set to be joining the Pioneer player on the market fairly soon. Magnavox (Philips' US subsidiary) was supposed to be shipping its CDV-474 (similar to the PAL CDV-475) to dealers in San Francisco, Los Angeles and New York (plus a couple of major mail-order outlets) in November, but is not putting it on immediate national distribution, inspite of apparently healthy orders. The price of the Maganavox player is $799 and it comes with a one-of-each-type (CD, CD Clip, LV 20cm, LV 30cm) 4-disc package of free discs. The only snag is that the discs won't be ready in time to be supplied with the player, and dealers are having to issue vouchers to be redeemed at a later date. Quantities of Clip discs are not being talked about till February. One dealer we talked to spoke of a deal of interest in the Magnavox player on the basis of the 16-bit 4x oversampling sound feature, an aspect that was making customers hold off buying the present Pioneer machine.

U.K. - Since the Berlin PAL launch, Philips has been running a series of local UK show promotions, starting off with the London Penta Show. This was probably the first chance for LDR readers to see the forthcoming Philips CDV-475 - as well as LV demos from Pioneer, Marantz, and Yamaha. For what is essentially an esoteric audio event, this was quite a good size showing of the video product.

Only Philips was showing a PAL model player, but, it needs pointing out, the player was not a finished production sample and was still manifesting a few of the video noise problems Philips was talking of at the Berlin show. It would have been better for this information to have been more widely disseminated at the Penta, so as not to disillusion visitors who might be thinking they were seeing the finished product. The magazine received several reports from disgruntled readers about the poor picture quality of the Philips player at both the Penta and Bolton shows (for which thanks) which would mostly seem to have stemmed from just such a misunderstanding. However, most folks were pleased to see a machine at all, and were fairly happy about its styling and features.

The delay in getting the Philips CDV-475 into final production is no doubt one of the reasons Philips in the UK is reluctantly admitting to 1988 being the earliest any players are going to go on sale. (Much as we intimated in LDR-14.) The official word to the magazine was that they were waiting for sufficient software to be made available - though why this should prevent them selling the player to existing LV owners (sitting on years of accumulated disc purchases) was not explained. There is, thus, a significant flaw in the story Philips UK is propogating.

Software - From Polygram's point of view the UK CD Video launch is set for April 1988. That's when Polygram (which is co-ordinating the software side of things) is planning to have the launch catalogue printed. This catalogue will contain music, special interest and movie titles. Polygram is talking positively about the contribution feature film material will make to the success of CD Video - but specific details as to titles and companies are still not forthcoming. That mention of Disney in the Roof Garden press release relayed in LDR-14 was obviously something of an embarrassment, as it should have been edited out for the final version given to the press! However, negotiations seem to be continuing with the Hollywood majors and the impression is that it will be a one-in, all-in commitment to CD-V. (The prospect of one-out, all-out just does not bear thinking of!)

Inspite of the Disney faux-pas, the 150 title film package seems to be holding. (And for European subscribers, the launch period for the UK also encompasses France, Germany (!) and The Netherlands). Prices will be pitched somewhere in the region of current LV disc prices. Movies at £19.99, 30cm pop music titles £14.99-£16.99, 20cm pop £9.99 and the Clips £4.99-£5.99.

Clips - That Level 42 disc - released if the publicity surrounding it is to be believed to prove that the CD Video Clip is a marketable proposition and could be got out in a timely fashion - has reportedly sold 5,000 copies. As predicted, this makes it the UK's biggest-selling videodisc so far - in about two weeks! As we went to press it was suggested that there were either no more Clip singles planned, or there would be between 4-5 put out during the run-up to the April launch. We favour the latter conjecture - so keep an eye out.

Films in Digital - As far as the current output of film titles through Lightning is concerned, there will not be any titles put out in digital until there is a quantity of new digital capable players on the market. For it to be worthwhile for them to do any disc in digital there would have to be some certainty that, by doing so, they will sell more copies than they do now. Effectively, that means that anyone buying a CD Video player before April will not have any of the new type software (other than Clips) to play on it. This should put paid to any speculation that current titles will be held up so as they can be put out in digital later. It's really difficult to imagine it being worth Lightning risking a digital movie title until the Summer period at the earliest. Without such a gradual introduction of selected digital titles that puts all the pressure on Polygram to have a suitable selection ready on the launch day. It also removes any pressure for existing LV owners to buy a new Combi player (if they should become available sooner) from Philips before launch date, unless the intimated trade-in against the old LV players is really worth taking up. Some readers might be more tempted by the prospect of waiting that bit longer for other manufacturers to show their wares.

PMI - Quantities of players is also a significant factor in PMI's present attitude about CD Video. PMI will be licensing a selection of long-form music videos for the Polygram launch, but will be holding off making a full commitment to independent releasing until the player situation is better defined. (PMI also told us that the day before our call they had received a visit from a Chinese delegation looking for music titles to put out on disc in China next year. One trusts the Chinese will be pressing the discs themselves or we'll never see any discs here!)

Germany - As this article is being typed up, news is coming through of what is happening (or more precisely) not happening, in Germany with the CD Video launch. It's been delayed - until after Xmas. The first quarter of 1988 is the earliest supplies of discs will appear, and it could run into the second quarter. (This now makes more sense of the inclusion of Germany in the list of countries being included in the in the initial PAL launch phase earlier in the article.)

An official statement on the German delay was not anticipated till after our press date, but the gist of it is, apparently, that the parties concerned in the CD Video launch are not satisfied that (presently) there is a high quality range of software in adequate quantities and in sufficient variety to make the launch viable. It was stressed to LDR that, for CD Video to be launched, the discs have to be the highest possible quality ("nothing short of perfect" were the actual words used); every catalogue item has to be available in sufficient numbers; and the range of titles has to cover pop and classical music, and current and classic feature films. And seeing as the point of picking off Germany as the earliest CD Video launch

area was based mostly on the fact of the publicity afforded by the Berlin Funkausstellung, the loss of this momentum means that there is now no reason to give that country any separate treatment and it will accordingly be brought into the main April promotion.

Sleeves - There has been a considerable re-think about disc packaging. There was talk of a revised plastic box design for the two larger disc sizes being developed, but the only definite news is that the launch product will be delivered in cardboard sleeves - possibly with the 'see-through' aspect of the old packaging continued as a printed feature. The classical/opera titles will come in gate-fold sleeves - as per the Arts International titles one would imagine. First samples of the new artwork were only being dispatched to the printers in late October and there is nothing available yet to show you here. But it's cardboard - it'll be friendly either way. We have this pic, of the now-abandoned plastic boxes, left in the files which we might as well use up as a sort of 'parting shot'.

Hardware - There is one significant advantage to the Philips player being a bit late into the market. It will enable existing LV owners to make a purchase decision based on -

1) The quality and price of it in relation to the competition (see on) and,
2) The quality and selection of the software.

For any reader who has ever found themselves bemoaning the poor selection of disc titles so far, this is your chance to opt out - or opt in. Before you shell out on the new player you can now decide whether the the right calibre of software is going to be available. Make the purchase decision on the basis of the discs - not the other way around!

Additionally, postponing the hardware purchase till next year starts to look more appealing as each week passes. We know there will be a Philips player. And it seems almost certain there will be a Pioneer one too. More than likely there will be a Marantz version of the Philips machine (if one interprets the photo in the new Marantz catalogue correctly), and both Yamaha and Sony seem probable entrants fairly early on. Also, one of the more innovative Japanese manufacturers (who didn't even have a product on show in Berlin) has been in contact with the magazine about the state of the UK market, with fairly obvious intentions behind the inquiry. Here, then are some comments on the selection you might be faced with.

Philips - This is a well-specified, basic Combi player that, courtesy of the RGB converter and 16-bit 4x oversampling audio promises to be one of the best performing machines. (Philips should be able to send you a brochure if you write to them.) We know the maximum price of this machine will be £499.

Pioneer - If we in the UK get a PAL version of the new Pioneer CLD-99S (see p. 22) - with its digital picture memory - the probable price premium for the feature will be of no consequence to existing LV owners who will appreciate the advantages of such a feature immediately. The more discs you have in your collection, the more appealing the digital memory - because you can now catch all those bits on CLV discs you couldn't quite see the first time round. Every disc is **nearly** in CAV. The new Pioneer player also seems to answer some of criticisms of the limited programme functions of the CLD-1050.

Yamaha - Is a good bet to have a Combi player out fairly early on, though there is no guarantee at present. Yamaha technology is appealing. If we get a PAL version of the CD-V1000 it will certainly be price competitive and have one of the best thought out set of control functions (and remote control).

Sony - Is definitely undecided as to whether to join in early, though from communications with the UK company (and in Germany) Sony undoubtedly sees a place for itself in CD Video. Beyond the fact that a lot of people will buy a Sony player for no other reason than it is a Sony player, there are two interesting additional comments one can make about any player they do introduce - based on closer observation of the top photo on page 17 of LDR-14.

The Sony player looks initially a bit low-tech ie. it's probably a two motor job with separate drives for CD and LV, as with the Pioneer. But the Sony doesn't even make any pretence of being a single motor machine, and the CD disc-well has been plonked totally off-centre, and at the front of the drawer. Believe your Ed - who has glimpsed it in person - it looks decidedly Heath-Robinson when you first see it. But there is a method behind this madness; there is no need for the drawer to be fully ejected every time you play a CD. This is a real bonus because it means, for a fair amount of the time the player is being used, you are no longer denied access to the other half of your living room. Anyone with a front-loader already, who has found themselves limboing around the enormous expanse of open drawer in past designs, will more than appreciate this feature.

The other aspect of the CD disc-well is that it is partially 'filled-in'. As a consequence it appears well able to accommodate one of those new 75mm CD Audio singles which - shock-horror, what a coincidence - Sony is aggressively promoting as a replacement for the vinyl 45. (And what could make it easier for the sales assistant going to work on a prospective buyer - "These CD Video players here play three sizes of disc. This one over here plays all four sizes of disc. It has to be better buy".)

Readers, apparently, have a couple or three months to mull over these purchase decisions.


DIGITAL SOUND
1/L
AUDIO
2/R
SR
OPEN/CLOSE
PLAY/PAUSE
STANDBY /PLAY
DISC SET
CD VIDEO
SKIP/
EARCH
VISAGE
SWING

PIONEER CLD-1050

the first pal combi player

This is unreal. If you've spent several years wondering why any manufacturer in their right mind would want to make an optical disc player for video, and then a completely different (and incompatible) one for audio, and then, several years further on, have seen Pioneer in Japan doing it right (by putting the two technologies back together again), the mere physical presence of the resulting bit of hardware **in PAL** is quite mind-boggling. It requires a bit of taking in. But it really is here. Hot off a plane from Germany and regretfully, with only a week allowed with which to play with it, is a report on the first PAL Combi player to go on sale.

At this very moment Pioneer UK isn't planning to sell the 1050 (full name, the CLD-1050) here. The machine will have gone on sale in Germany (the first CD Video launch area) in October, at a price of DM.1,998-, or approximately £660. Pioneer thinks the player may be a bit expensive for the UK (what with Philips quoting a variety of prices that are **always** below £500). A Pioneer player is always likely to cost a little bit more than the Philips product, but they don't really want it to be **that** much more. They are hoping to have a new model in time for the main UK CD Video launch after Xmas (Spring, some say). What happens here if there is a clamour for the 1050 at around £700 was not stated, but for those readers who have already got their atlases down from the shelf, and have calculated that Germany is only 300 miles or so away from England's southernmost parts, this review will be complete enough to make the trip and resulting 'blind' purchase a viable proposition. It will be a bit heavy-going in parts and for this reason those readers not interested in more detailed matters should be able to derive some sort of basic opinion of the player in the concluding part of the article.

The CLD-1050 looks almost identical to the US CLD-1010 and Japanese CLD-70 (both NTSC, of course) LV/CD players. It's actually closest to the 1010 - there is no sharpness control and no headphone socket as on the Japanese player. But some slight cosmetic differences with the 1010 do occur. First off, the CLD-1050 sports a CD Video logo in the bottom right-hand corner, and possibly more significantly, other than the LaserVision logo on the drawer flap, there is no mention of the word 'LaserVision' or the abbreviation 'LV'; the terms 'LaserDisc' (a Pioneer trademark when spelled in such a manner) and 'LD' are substituted.

The CLD-1050 is not an exciting-looking piece of equipment. It has a functional, clean-lined (plastic and metal) facia with some discreet control buttons spread about and it needs to be caught from the correct angle to be shown at its best. But there is nothing wrong with the way it looks. It's only marginally bigger than the previous LV-only LD700 player - the main difference being that the player casing goes right down to the ground - having almost non-existent rubber feet that raise it about the thickness of a disc off any surface you put it on.

Connections

Before you do anything with the player you have to plug it in. There is a voltage adjustment screw to set the mains input to match either 220 or 240 volts. This is easy to do with a small screwdriver. There are also In/Out Antenna sockets and a tuning adjustment screw. These are also easy to deal with because such connections are best avoided in any serious installation. Besides, these in/outputs will only function in Germany where the sound carrier on the broadcast signal is at a different frequency - they won't work in the UK. You **have** to use the direct video inputs if you want to use the player in the UK, or anywhere else that isn't on the German PAL TV broadcast standard. (Great!) You have two options for this - a SCART/Euroconnector for both audio and video combined, or separate Video (1 x BNC) and Audio (L & R phono) sockets. (Unusually, the phono sockets are not gold-plated.) Two remaining mini-jack sockets on the rear panel hook the player into other Pioneer System Remote (SR) compatible products.

Operation

More so than many other recent Pioneer players (well, recent in respect of their NTSC introductions) the CLD-1050 is reasonably well-equipped on the front panel. There is a full set of transport functions - Drawer Open/Close, Play/Pause, Chapter Skip Forward/Back, and Scan Forward/Reverse.

The rest of the controls are accessed via the infra-red remote control which is a derivation of that first seen on the LD-707 (see LDR-7). Some of the buttons have been overwritten to accommodate the different terminology of Compact Disc, and some buttons have become slightly larger. The layout is a definite improvement, and for a left-hander, it is now possible to activate all the most used functions within the rough arc of the thumb's travel. A reorganisation of the numerical keypad also allows the thumb to continue its travel down the right-hand side for the display functions. (To make this clear, one is talking about holding and using the remote in one hand only.) Having now used remotes from several manufacturer's LV and LV/CD machines the judgement on the one for the 1050 would be "above average" in ease of use. That of the YAMAHA CLV-1 remains the best-considered in layout and ease of operation.

For the most part, there would seem to be a basic cultural difference between East & West that comes into play where remotes are concerned. Virtually every Japanese remote is based on the assumption that the end-user will take some sort of near religious delight in using it - as if one is paying respectful homage to the piece of equipment it controls. The Western approach on such matters is more down to earth. Ease of use becomes the prime design criterion (ie. is it easy to use in the dark, when you are simultaneously trying to juggle a can of lager and a bag of tortilla chips in the only two hands you do have?). Both cultures, however, still have some way to go in perfecting the remote control.

Back to the machine controls for a minute: the layout of the front panel controls is well considered. The Open/Close and Play buttons are to the right and can be used without obstruction by the drawer when it pushes all the way out. The other controls have no use until the disc is in play and are relegated to a position under

the open drawer. This bottom row of buttons is easy to engage but the isolated Open/Close button (which is more than adequately wide) is less so. It doesn't stick out either and is difficult to locate in a darkened room by touch alone. There is no illumination from the machine to help. Because the 1050 does not have the blue screen displays of its NTSC counterparts (this was a surprise discovery!) there is no room illumination from the TV screen when there is no disc in play.

Yes, Pioneer has left off the blue screen displays they (and other disc manufacturers) have been using on their latest machines. All those chip-generated screens that appeared in LDR-11 are completely irrelevant to this player. The only information readout is via the front panel LED display, which though larger than any previous Pioneer player is pretty frugal by comparison.

It would be wrong to pretend the blue screen readouts are essential - there has always been an element of gimmickry to them - but one does definitely miss the initial blue screen that displays the disc's A & B sides. In fact, the blue screen does make the LV aspects of a player more friendly all round. It's only the CD displays that really strike one as a bit of overkill.

The LED display has lights for disc types ("CD", "CDV", and "LD") on the left and a fairly large "Chapter/Track" number readout. The "Time" display doubles as a "Frame" readout (one or the other) though that for Frame is a bit mean, having a maximum of four digits and as a result always leaves the end digit off. Mind you, you still get all your conventional superimposed TV screen readouts for such functions, and so the LED display's shortcomings are only really applicable for the occasions when you are not using the TV (for audio, say).

When it comes to describing all the permutations of TV screen display, and indeed, all the functions available on the 1050 we'll be a bit more brief. These sort of combi players, while basically simple to use, have all sorts of control/memory/program/display functions that differ with disc type, and comment beyond the more important ones will probably start to confuse rather than inform. An excerpt from the instruction booklet has been included here that lists (in table form) much of what is available on the machine. (The instruction booklet is a bi-lingual German/English affair.)

Disc Loading

Hitting either the remote or the player's Open button causes the drawer to push out. Stand back there! It's fully motorised - and really needs to be. The way they did it on the earlier combi players was to require the user to do most of the work. This didn't tax the muscles too severely but one was always nervous of being overly physical and dislodging the lightweight CDs from their centre depression as you pushed the drawer back. This new arrangement removes that element of doubt. As before, there are the three depressions marked out. The CD one is a bit shallow and you sometimes have to woggle the disc about a bit to make sure it's sitting proper.

What you don't see after you have loaded the disc and pressed the play button is the manner in which the player moves into gear. Regardless of the disc type, the drawer retracts, and when the front flap closes, it drops down, putting the disc onto the player's drive motor spindle. The LV motor is fixed - you can see it if you peek in when the drawer is open - but CDs and CD-Vs have their own separate motor that lies down when not in use and is rotated into an upright position when the appropriate disc is inserted. (The player detects disc size and type automatically.) This CD motor is located between the main LV motor and the furthest extremes of the laser's scanning track (which runs from the centre to the rear of the machine). It can't be left in position all the time because it would be in the way when the laser was trying to track the bigger discs.

To compensate for the fact that two motors are at different centres (ie the CD motor is further back into the machine than the central position for CDs on the drawer would indicate) the drawer has a middle section that is physically separated from the main part. It is this centre section that slides further back into the player to locate the CD onto its appropriate spindle. You probably wouldn't notice any of this from looking at the drawer from above, but a view from below reveals a lot more going on mechanically than the plain appearance above would indicate.

Function Highlights

These are the more interesting of the control functions. First off, the player can reveal the seconds coding that has been being put on UK LV discs this last year-and-a-half and which the current players can't access. That **does** mean there are always twice as many digits to enter on the keypad when doing a Time Search (ie. twenty minutes now

Above: Front panel of CLD-1050.

needs "20.00" to be entered - the decimal point is automatic, though), but apart from the more accurate access that results, the feature also enhances the A - B Repeat function considerably. You mark the start point by pushing the "A" button, and when you reach the end of the chosen sequence, you push "B" and the player goes into continuous repeat. This can be a two second segment, a two minute one, or whatever.

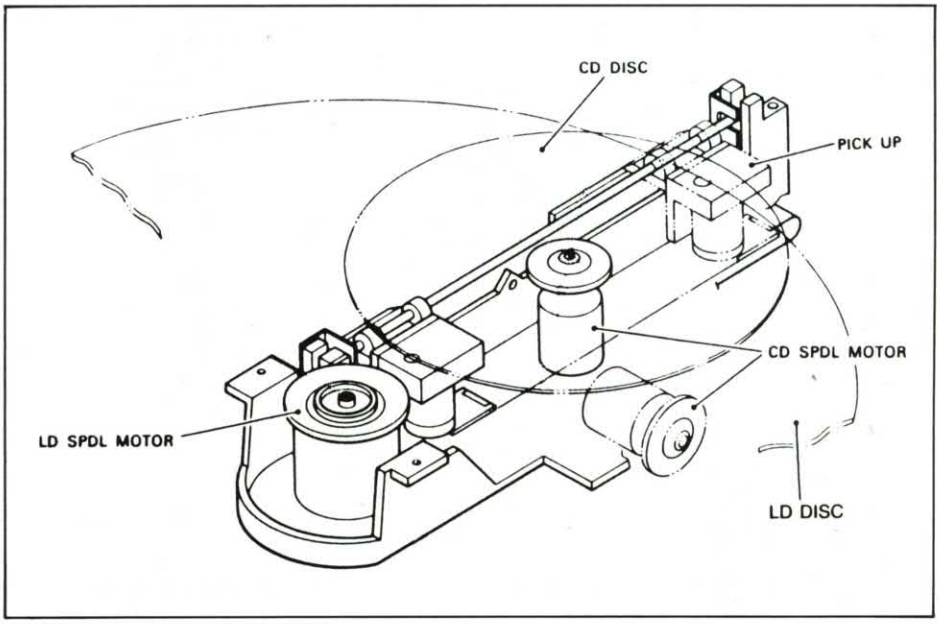
The Multi-Speed control governs all the trick play/slow-motion rates. This is done with four buttons - one pair for Forward/Reverse, the other pair for frequency - nine levels from x3 fast to 1 frame every 3 seconds. (This is all for CAV discs, of course.)

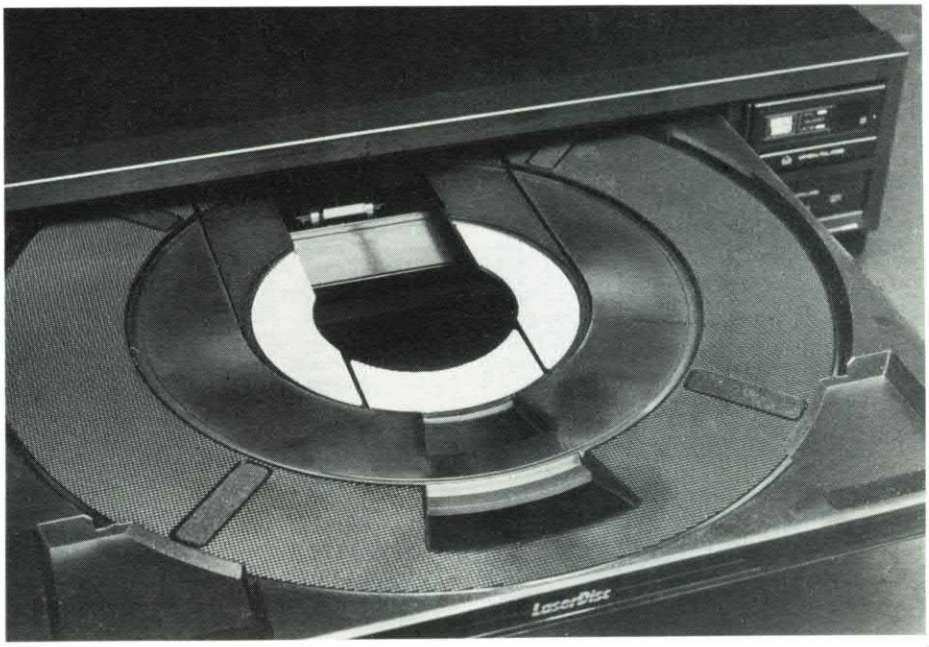
"−" Key	Screen Display	Speed	"+" Key
⇩	× 3	3-times play mode speed	⇧
	× 2	2-times play mode speed	
	× 1	Same as play mode speed	
	1 / 2	1/2 play mode speed	
	1 / 4	1/4 play mode speed	
	1 / 8	1/8 play mode speed	
	1 /16	1/16 play mode speed	
	STEP1	Plays one frame every second	
	STEP3	Plays one frame every 3 seconds	

A programming option is included that will work with LV Chapters and CD Tracks. Up to 10 can be entered in the program, though the TV screen will only display (in LV mode) four of the entries. When you enter more than four the earliest entry, while still recorded, is scrolled off-screen to accommodate the latest one.

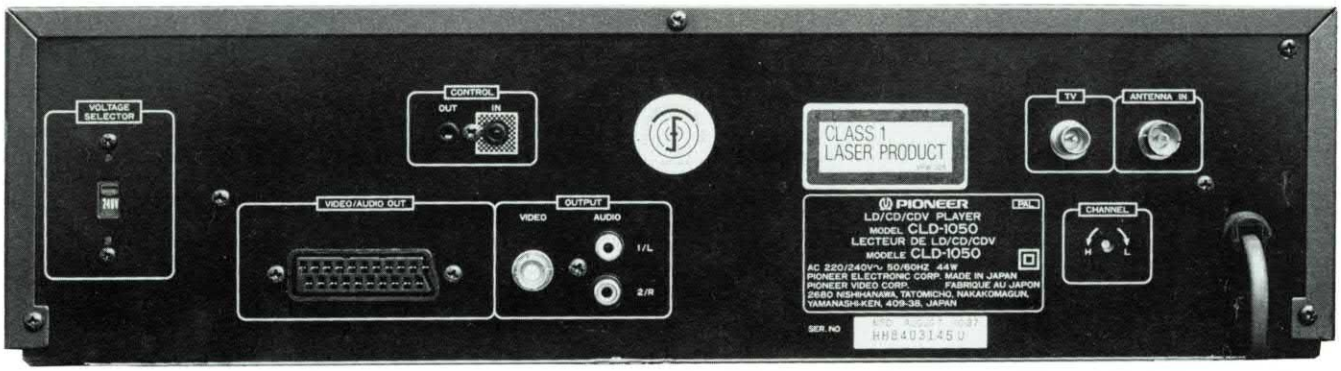
With CDs the player does not recognise Index points. (On CDs the term "Track" relates to that of "Chapter" on LV, but there is also another access level on CDs called "Index" that is used for further sub-divisions of Tracks.) Some players recognise Index points, but

Below: Diagram of the internal workings showing two motor spindles.





Right: Although superficially a single piece of plastic, the CLD-1050 drawer is in two parts. The centre part separates when inside the machine to locate CDs onto their motor spindle.



Above: Rear panel of the CLD-1050. The TV connections are for German PAL only.

the 1050 is oblivious to such disc enhancements (as are the majority of companies involved in releasing CDs!). With CD-V Clips the player can offer most every function relevant to either audio or video, but it draws the line at a programme sequence combining the two - ie. you can program a series of audio tracks on a Clip disc, but you can't insert the video track in the middle of the sequence; you can only switch between video and audio manually. Jumping from the audio to the video (and vice versa) is done by pushing the Search/Memo button.

Chapter Skip is a valuable control option, essential really. On any chaptered LV disc or 'tracked' CD a push on the Chapter Skip button jumps you immediately to the start of the next sector of the disc. You can push several times in quick succession and jump a group of Chapters/Tracks in one go, saving the bother of entering a longer-to-execute programmed search sequence. You can skip backwards as well as forwards, though you have to press the key twice to get to the start of the previous chapter (as opposed to just the once when going to the next one forward).

The standard search procedure for Time/Chapter/Track/Frame is also straightforward, though the player will not do time searches on CDs beyond one within the track currently in play. You can't time search over an entire CD.

functions

Functions	LaserVision Disc		Compact Disc	CDV Disc	
	Active Play Disc	Long Play Disc			
PLAY	YES	YES	YES	YES	
EJECT	YES	YES	YES	YES	
TV/LDP SELECTION	YES	YES	–	YES	
PAUSE	YES	YES	YES	YES	
AUTOMATIC PAUSE	YES	YES	YES	YES	
SCAN (Forward, Reverse)	YES	YES	YES	YES	
AUDIO CHANNEL SELECTION (Stereo, 1/L, 2/R)	YES	YES	–	–	VIDEO PART
CX SYSTEM ON/OFF	YES (1)	YES (1)	–	–	
STILL/STEP (Forward, Reverse)	YES	NO	–	NO	
CHAPTER SKIP (Forward, Reverse)	YES (2)	YES (2)	–	YES (2)	
MULTI-SPEED (Forward, Reverse: variable in 9 steps)	YES	NO	–	NO	
MULTI-SPEED DISPLAY	YES	NO	–	NO	
FRAME NUMBER DISPLAY	YES	NO	–	NO	
TIME NUMBER DISPLAY	NO	YES	–	YES	
CHAPTER NUMBER DISPLAY	YES (2)	YES (2)	–	YES (2)	
FRAME NUMBER SEARCH	YES	NO	–	NO	
TIME NUMBER SEARCH	NO	YES	–	YES	
CHAPTER NUMBER SEARCH	YES (2)	YES (2)	–	YES (2)	
CHAPTER REPEAT	YES (2)	YES (2)	–	YES (2)	
A-B (INTERVAL) REPEAT	YES	YES	YES	YES	
MEMORY REPEAT	YES	YES	YES	YES	
SIDE REPEAT	YES	YES	YES	YES	
PROGRAM PLAYBACK	YES (2)	YES (2)	YES	YES	
PROGRAM DISPLAY	YES (2)	YES (2)	YES	YES	
PROGRAM REPEAT	YES (2)	YES (2)	YES	YES	
PROGRAM CORRECT	YES (2)	YES (2)	YES	YES	
TRACK SEARCH (SKIP SELECTION)	–	–	YES	YES	AUDIO PART
TIME SEARCH	–	–	YES	YES	
TRACK REPEAT	–	–	YES	YES	
TRACK NUMBER SEARCH (DIRECT SELECTION)	–	–	YES	YES	
TRACK.TIME DISPLAY	–	–	YES	YES	
REMAINING TIME DISPLAY	–	–	YES	YES	
TOTAL TRACKS.TOTAL TIME DISPLAY	–	–	YES	YES	

NOTE: *(1) Valid for analog sound when playing a disc with the CX mark.*
(2) Possible for playback of disc on which chapter numbers are recorded.

Above: Top line shows Chapter, Frame, and Multi-speed rate (1 frame every 3 seconds). Bottom line shows programming of LV chapters. Only the last 4 (of 10) can be displayed on screen.
Below: Top line again shows Chapter and frame, but this time it also indicates the machine is in A - B repeat mode.

CD VIDEO

Picture Performance

There are no video specs quoted in the accompanying instruction booklet - this is a typical omission with Pioneer instructions. They only ever state a selection of audio specs; never the video ones. A verbal mention of 440 lines horizontal resolution was made, and in comparison with the PHILIPS 600/700 players (that constitute the largest user-base, and subsequently most well-known standard of picture performance, in the UK) the CLD-1050 is significantly sharper, plus exhibiting less noise in both luminance and chroma elements of the picture. (In other words there is less turbulence and grain to the picture and much less 'bittiness' to the colour). It's a better picture all round and you'll notice discs showing a sparkle and brightness unseen on any previous consumer PAL player.

One of the shortcomings of the original PHILIPS players (and all the helium-neon laser LV players encountered) occurs with dark scenes that manifest a milky streakiness over dark areas of the picture. The LD-700 was a major improvement and produced a near transparent image in this respect, but the 1050 does not (with this review sample at least) manage quite the same performance. (Though it would have been nice to do a side by side comparison to make sure - the memory can be a mite unreliable). On the 1050 there is some low-level streaking that one wonders might be intentional. The LD-700 was a very severe judge of flawed disc pressings, showing up blemishes people just didn't believe existed. The 1050 seems to have surpassed the picture performance of the LD-700 in virtually every area, without revealing the same level of pressing defects, and there may be some connection between these two factors. A personal preference would be a completely transparent picture - and completely clean disc pressings to go with them!

A new player means it's time to get out the reference discs. These are an odd bunch of titles. As regards the discs originated on 35mm film they are not ideal transfers, being a bit too contrasty, the result of being taken from regular cinema-contrast prints rather than low-contrast prints or negatives. Video cannot cope with the extended grey-scale of photographic film, and that's why such contrasty transfers are always unsatisfactory in respect of dark scenes and outdoor shots in direct sunlight. However, film titles such as ***Ruckus***, ***Hoodwink*** and ***48 Hours*** are all nice sharp transfers with strong colour that show much of the potential of the LV format from the point of view of extended bandwidth.

For video-originated test pieces the ***Splashin' The Palace '84*** and, with particular relevance to German subscribers, the Friedrich Gulda ***Mozart For The People*** discs are definitely worth trying on any new machine. The Gulda discs are not that impressive overall, but for the shots from one particular angle - the front-face close-ups - that are quite spectacular for what they show can be achieved on a domestic video format. There is no noise to the picture and the skin tones are immaculate (although the disc pressing leaves something to be desired).

[As an aside, readers concerned to assess the quality of their players and TVs are recommended to acquire one or two of these discs. ***Ruckus*** is a cheap disc and probably the best, ***Hoodwink*** almost as good. If these discs don't look substantially sharper than any other film titles you have then a new TV is in order! The ***Splashin' At The Palace '84*** is also fairly cheap and has the added bonus of good sound (good picture **and** sound - on the same disc!). Although it has departed these shelves some time past, the ***David Essex/Albert Hall*** disc lingers in the memory as another impressively sharp video-originated disc that is available cheap.]

It is not necessary, though, to have the above mentioned discs to notice the improvement in picture quality with the 1050 - the reduction in chroma noise will show on virtually every disc, giving a much more vivid colour signal without any accompanying break-up. More than likely the limiting factor to how much difference you notice with the picture will come down to the performance of your picture tube.

With the 1050 the 'problem' with heavy reds and blues is still not resolved. The player makes a better job of coping with these colours, but still not to the preferred "perfectness". One other characteristic still present is one that we don't have a precise definition for.

LV players confronted with certain hues of red and blue respond by resorting to displaying a finely-textured 'S' patterning down the screen on the saturated colour. You don't notice it greatly on the older players because they don't resolve fine detail so well (but you can see it if you know where to look!). It was a more noticeable problem with the LD-700 and still persists with the 1050. A good example of the characteristic is on the ***Chris Barber Band*** disc that has a dominant blue background running throughout the programme. When it goes a certain hue the patterning becomes quite noticeable. Some people find this distracting and it would be nice to see it eliminated eventually.

Essentially though, the CLD-1050 is a step forward in picture quality in all but the one respect of the transparency of dark areas of the picture, and for the reasons stated, one is tempted to contemplate the possibility of this being a deliberate tweak. We couldn't find a disc to show up any crosstalk whatsoever - the player tracked everything with ease (and with extreme mechanical silence). Even a 'nicely' warped specimen (that the 600 can just about track only at the expense of losing colour synch) played faultlessly on the 1050 without any audible murmur from the tracking mechanism.

Player Noise

Just to round off the point about mechanical noise of the player, it's fair comment to say that, as far as aural distraction from the workings of the machine is concerned, you can just about forget it. Even with CAV discs (that are always running at top speed)

CD Clip

● **Functions available during video track play**

Function	Sequence of remote control key operations
PAUSE*	PAUSE ▮▮
Chapter/time display	DISPLAY
Chapter skip (Track search)*	⏮ CHAPTER SKIP ⏭
Forward/reverse scan*	◄◄SCAN , SCAN ►►
Time number search	CHAPTER·FRAME/TIME DIGIT (min/sec) SEARCH/MEMORY
Chapter number search	DIGIT (chapter number) SEARCH/MEMORY
A–B repeat	Beginning point REPEAT A, end-point & repeat begin REPEAT B
Memory repeat	Beginning point REPEAT A, beginning point search SEARCH/MEMORY
Chapter repeat	REPEAT B
Side repeat	REPEAT B after chapter repeat
Chapter program play	PROGRAM DIGIT (chapter number) SEARCH/MEMORY
	DIGIT (chapter number) ..... SEARCH/MEMORY PLAY►
Program correct	⏮PGM CORRECT
Program repeat	During programming or after program input: REPEAT B PLAY►
Switch to audio tracks	SEARCH/MEMORY

CD Clip

● **Functions available during audio track play**

Function	Sequence of remote control key operations
PAUSE*	PAUSE ▮▮
Track number/time display	DISPLAY
Track search*	⏮ TRACK SEARCH ⏭
Forward/reverse scan*	◄◄SCAN , SCAN ►►
Track number search	DIGIT (track number) SEARCH/MEMORY
Time search	DIGIT (track number) TIME DIGIT (min/sec) SEARCH/MEMORY
A–B repeat	Beginning point REPEAT A, end-point & repeat begin REPEAT B
Memory repeat	Beginning point REPEAT A, beginning point search SEARCH/MEMORY
Track (1 program) repeat	REPEAT B
Side repeat	REPEAT B after track repeat
	(Note: The player returns to the beginning and repeats audio track play after playing all the audio tracks to the end.)
Track program play	PROGRAM DIGIT (track number) SEARCH/MEMORY
	DIGIT (track number) ..... SEARCH/MEMORY PLAY►
Program correct	⏮PGM CORRECT
Program repeat	During programming or after program input: REPEAT B PLAY►
Switch to video tracks	SEARCH/MEMORY

the noise level is extremely low. These comments apply for a player within arms length of the viewing position (ie. very close - why get up to change discs?). Even the new Clip CDs, where the motor is thrashing away at up to 2250rpm, it was very quiet. Surprisingly, when the player was moved across the room to a position next to the TV, the whir of CD-V Clips did then become audible - but this was when there was no sound output from the speakers. (By the way, have you been thinking your hearing has been declining this last year or two because your old VP600/700 doesn't appear to be making as much noise as it used to. Well, it's probably not a case of failing faculties but the improvement in the disc pressings these recent years that don't put such heavy demands on the hardware. The players are just as noisy when you put an old pressing on, especially if it's warped or has a lot of dropout.)

Audio Performance

The audio improvement with analogue LV discs is significant - if flawed; the range is greater, with deeper and better-defined bass and similarly clearer and more extended high frequencies. Discs sound less strained than before. There is a price to pay for this which may be too high, though. The player is very unforgiving to pressing dropouts (as far as they affect the audio signal) and all manner of previously 'acceptable' titles begin to manifest the odd pop and crackle where before there sounded to be nothing. Some discs manage a fairly consistent low-level spitting which will sound familiar to some readers as a criticism often levelled at German-pressed discs. Such German discs are even more severely affected by the clearer audio reproduction which, considering where the player is going on sale first, makes for the worst possible clash of events. No very recent German-pressed discs were on hand to pursue the matter further. The UK-mastered-but-German-pressed titles we've recently been getting seemed better, but these may not be a good comparison.

The player is certainly very revealing of the usual sound defects that crop up on film transfers. ***A Room With A View*** managed a few extra passages that showed distortion of various sorts and ***The Colour Purple***, with its quivering treble, became more than uncomfortable to listen to for any sustained period. This is actually a good sign for the fidelity of the player, but practically it is showing up our film transfers. It made sense to try a CX-encoded title to see whether the spitting carried through to such discs; it does. Only the ***Maze/Happy Feelin's*** was available at the time, which is a live recording and so little in the way of quiet passages occur, but the spitting was there in a more noticeable way on the usually silent lead-in.

The most significant improvement in the sound was the elimination of the low burble you always get with LV discs. It has cropped up on every PAL & NTSC player so far auditioned. In the best examples it is not usually too intrusive, but it's always there. (Just try putting on a disc and turning up the volume on the lead-in, before any sound output proper comes through the speakers.) For some reason this audio distraction is no longer there on the 1050 - just a low (very low) hum, set far further down in the audio signal and effectively of no consequence in relation to the level of the analogue signal. This is good.

Let's move onto the digital side of things. Digital audio on PAL discs is similarly free of the burble that crops up on the NTSC players so far reviewed. As commented on in the review of the ***Dream Academy*** disc (LDR-13), the same burble you hear on analogue sound has tended to creep into the digital audio of LV discs in NTSC. You do really have to crank the volume up high to hear it, but the digital track on NTSC audio has, so far, not been heard with the same clarity as the players manage with CDs. It's as if the players can't eliminate some sort of 'beating' from the analogue video (or audio) signal - a problem that does not occur (obviously) with sound only CDs. This beating noise does not crop up on PAL digital sound discs, with this player anyway.

For the review, only a couple of live concert discs (***Style Council/Showbiz*** and ***Level 42/Live At Wembley***) and the ***Classics*** sampler were on hand for audition, none of which one would ideally like to make judgements on. (Because the first two have little in the way of 'silence' in them and are recorded under non-studio conditions - well, not the ***Level 42*** maybe, but who's to tell what was dubbed in and what wasn't! - and samplers are always a bit suspect on matters of fidelity. Additionally most of the sampler is analogue originated, often quite vintage stuff.)

Having said that one can make no major criticism of the sound from the discs. There were no distracting noises; the passages that were meant to be silent were. The ***Level 42*** disc had some apparent dropouts in a couple of songs that seemed to be instrument failings on stage rather than in the recording or the pressing.

Playing a bunch of CDs proved a more reliable guide to the merits of digital audio. Inspite of what the Golden Ears might try and tell you, some discs sound great - even if others don't. The 1050 tracked every CD tried on it (including one we've found that mutes momentarily on the Yamaha CLV-1) without fault. In the time allowed for the review it did not prove possible to detect significant differences between the 1050 (with its 16-bit, 2x oversampling) over the earlier CLD-7 clone - which is without such increasingly popular output stages.

It's very difficult to endorse the views of those who resist the move to digital audio, even though there may be some theoretical advantages to the old technology. Practical experience suggests that digital is better. Recording engineeers manage to screw up both. The bottom line has to be the absence of noise - in all its manifestations.

Just to show openness to persuasion, though, this little test might brighten up the mood of the 'Back To Analogue' brigade. The three PAL digital discs we had, we had in both PAL **and** NTSC. So, although a straight comparison between analogue and digital in PAL was not possible (because there is no analogue track on the PAL disc), it was possible to run the analogue track on

the NTSC disc in synch with the digital PAL disc.

A personal judgement would tend to have favoured the analogue sound on the NTSC player as the short excerpts from the ***Classics*** sampler were played through! All those things you hear about digital being "tight, nasal, lacking air" etc started to ring true. The analogue really did reveal a certain sweetness and airiness that just didn't

seem to be there on the PAL digital disc. But, while still good compared to standard quality PAL analogue discs, the analogue track was hissy and noisy in comparison with the 'silent' digital disc.

But then it gets more complicated. Come track 7, the thunderous opening chords of the ***Otello*** excerpt, and the PAL digital disc really opened up, leaving the analogue sounding wimpish in comparison. The analogue track needed some volume boost to cope with its lost dynamic, but even then it still sounded clouded and less exciting.

When you go into all the variables further it does, of course, become impossible to reach a firm conclusion. For example, you can bet that the master tape for everything started out in digital; the NTSC analogue sound also had to survive the side-effects of the CX noise reduction; and how consistent would the two disc transfers be anyway? That said, the exercise does make one aware of the supposed loss of musicality that is supposed to occur with digital. Analogue does seem to put a roundness to the sound (that may be no more than the ear being confused by the ambient noise of the recording) that is absent on digital signals. However, at the end of the trial, the long-term conclusion would have to be to go with digital.

Timings

Not all these timings will be that important to one's potential enjoyment of the player. Some we do to monitor developments in the hardware, and others in response to the apparent slowness or speed of operation.

The CLD-1050 does seem a bit sluggish dealing with Clip discs. If you've just been playing a movie and decide to round the evening off with a pop video the player needs just a bit longer to change motors and access the video track on the Clip. It takes 26 seconds from the time you push Play and the open drawer commences its load cycle. If you have already got the CD motor in position (after playing a CD or another Clip) the time comes down to 20 seconds. Jumping from the video track to the audio takes 9 seconds, switching back to the video from the audio takes 12 seconds.

On a long audio CD it takes about 6 seconds to do a Track Search to Track 27 (about 67 minutes of disc space). A Track Search back to Track 1 is again about 6 seconds. A Search to Track 10 on the same disc (about 46 minutes in) takes less than 3 seconds; back to Track 1 again takes slightly longer, 4 seconds. (With these timings one is dependent on the exact positioning of the Track mark on the disc in relation to the music start - the player is actually slightly faster than these times would suggest.)

On an LV disc in CAV, going from Frame 1 to Frame 54,000 in Search mode takes 7 seconds, both directions. On a CLV disc a Time Search to the 59.00 point took 13 seconds, 12 seconds when going back to the start.

Side change times on LV (ie. the length of the gap in the movie between the end of side one till side two can be got up on screen) takes between 26 to 28 seconds, depending on how much of a fumbler you are. Dedicated practice with the player could probably trim a second or so off this time.

The Scan speed of the player with LV discs is 40 seconds for a full side, start to finish. This is a reasonable compromise between visibility and speed of access. Scan times are usually longer on machines that have more comprehensive search facilities - and rightly so.

Conclusions

Putting all this into some sort of conclusion is fairly easy. There is only one aspect of the machine about which there are any significant reservations - the noise on the analogue sound of LV discs. This won't matter much to the German buyers who come to the machine without any previous involvement in LV and restrict their purchases to digital discs. It's only those readers who are sitting on a large library of analogue discs who are likely to be troubled by this aspect of the machine, and ideally, should try and get to hear it playing some of these discs before comitting themselves to a purchase. (It would have been nice to have got hold of another sample of the player to be absolutely certain we weren't dealing with a sample fault, but this wasn't possible. If anyone who ends up with a 1050 can add further comments about the sound, please let us know.)

Although the CLD-1050 is our first PAL Combi player it does have to stand comparison with previous NTSC ones - from both Pioneer and Yamaha. The 1050 does not have quite the comprehensive control functions of the Yamaha CLV-1, even though it does more than any previous PAL LV player. In relation to CDs, some may find the 1050 a little short on facilities. With the programming, for example, even if few people actually routinely programme more than 10 tracks on a CD (even if, like the disc illustrated opposite, they can easily have over 25 tracks) many cheap current dedicated CD players offer twice the number of programme selections. But essentially, the 1050 is an LV player that also plays CDs - not the other way around.

It's an easy machine to use, even if you don't fully understand all the various controls first off. (The intruction manual is in German/English.) It's eminently sensible to have the one machine to play all the discs presently available, and even though the CD-V function is something that has been added during the production run of this player, the machine copes quite well with it. It could maybe have been just that bit more athletic in the speed of the mechanical handling. The other aspect of the machine's established run of production is that is has an assured feel about it when undertaking any task. It may be new technology to this part of the world, but it's fairly evident there are several years of accumulated expertise behind its design.

CD VIDEO

SPECIFICATIONS

Pioneer CLD-1050 LV/CD/CD-V player, PAL 625-line standard

Price(in Germany): DM. 1,998-.
Disc Types: LV (20 & 30cm), CD Video (12cm), CD Audio (12cm).
Dimensions: 420(w) x 120(h) x 411(d)mm.
Weight: 11.5kg
Power Consumption: 44 W.
Power: 220/240 V (Switchable), 50/60Hz.

VIDEO
Output: 1Vp-p nominal, negative synch, terminated.
Impedance: 75 ohm unbalanced.
TV Output: PAL-G (IEC jack).
Connections: BNC, Scart/Euro(Composite).
Bandwidth: 440 lines, horizontal.

AUDIO
Connections: Phono L & R, Scart.
Analogue Output: 200mVrms(1kHz,40%).
Digital Output: 200mVrms(1kHz, -20dB).
Digital Audio Characteristics(EIAJ) -
Frequency Response: 4-20kHz (+0.5,-1.0dB).
S/N Ratio: 98db.
Dynamic Range: 95dB.
Channel Separation: 92dB.
Total Harmonic Distortion: 0.005%.
Wow & Flutter: ±0.001% Weighted Peak or less.

clips in view

Having the CLD-1050 for a few days meant a chance to experience the CD Video Clip format first-hand. Not only from the point of view of whether they work technically, but also whether they do the business on an artistic/ entertainment level. A round total of 10 discs was amassed from various sources - some of which were genuine production samples, others possibly not likely to appear in exactly the same form as we were given them.

All the titles conformed to the same basic track layout; one video, followed by between two to four audio tracks. There were no major embellishments to any of the discs over and above that. Indeed, the video portions were sparingly presented in the extreme. None had opening or closing credits. Just an occasional one had a copyright declaration on the closing black. Most of the information that would crop up in such credits was included in the sleeve notes, often even on the disc surface.

The convention with Clip discs is, as far as we understand it, for the video to play first - which the 1050 does. The picture-starts on the discs were very abrupt - to the extent that you almost felt you might be missing the first second or so. None had a black lead-in to soften the immediacy of the start.

Picture quality varied, as would be expected. None of the discs was a real specimen quality piece. Those from Curiosity Killed The Cat, Visage, Swing Out Sister, Hubert Kahn and Level 42 were the most immediate and clear-looking. The complexity of the production of many current pop videos mitigates against good picture quality to a degree. Most of those effects involve a generation of signal loss, so consequently - the more 'creative' - the more grainy and noisy. Also, at a guess, there was an element of NTSC/PAL standards conversion involved. Out of the 10 discs it would have been nice to have come across just one that was a straightforward PAL video-originated piece. One suspects these are going to be rare beasts.

Several of the videos looked to have been 35mm film originated. The Curiosity Killed The Cat certainly fell into this category, but the ultimate resolution of the picture was limited by some onscreen patterning, done either for that purpose or as a means of reducing the contrast in the video transfer. Either way, as with many a feature film transfer, the effect was clearly visible.

On the engaging Swing Out Sister video, with its vivid colour scheme, there was a lot of turbulence in the bright red and blue colours which would appear to have been in the master, rather than being a limitation of the format or the pressing quality.

In the context of being video '45s' these discs aren't likely to receive such critical appraisal in their eventual owners' hands - at first, at least. People tolerate a scratchy vinyl 45s so maybe the same attitude will apply to the Clip discs.

In respect of the pressing quality, the discs (which were all PDO, Blackburn pressed) appeared to have a satisfactory signal to noise ratio. Without comparing with the mastertape one can only make such a guess. (The stories you may have encountered from other sources commenting on the poor picture quality of some of the Philips player demos would not appear to be anything to do with the discs.

Out of the 10 discs, about three had blue speckle dropouts that would put them in the reject category as far as readers of this magazine are concerned. This could be taken both ways when it comes to estimating the tolerance of such defects by the new disc buyers who CD Video is being aimed at. They could be **more** critical. After all, one of the big selling points of digital audio is that you leave the pops and clicks of vinyl behind. So, to take them back on board for the pictures might be a development they find difficult to understand. Another couple of the discs were 'averagely spotty' - ie. you'd tolerate them and probably not bother trying to get a replacement. One disc declined to reveal its video portion at all, the machine whirred away, seemingly to several thousands of revs more than it was supposed to function at, but inspite of various attempts to trick it into play the screen stayed resolutely blank. That leaves just under half doing OK, with a couple of the discs being very clean indeed. At this stage, when the discs have been in production only a few months, this is probably not a bad result, providing when they start cranking them out in quantities, the standard rises slightly, rather than falls.

Most of the discs had the audio version of the Clip track as the first track on the disc. That means that when the screen goes blank after the video has finished you hear the same song all over again, though in the majority of cases in a slightly different version (say a longer dance mix). The Go West disc (the only one in the bunch from Chrysalis) was an exception and put the audio track last - the result being a gap of fifteen minutes or so before you hear the song you have just watched. Thus, if you're really barmy over the thing, you can just re-start the disc after the last audio track has finished and hear and watch it all over again. This is the most logical track layout.

None of the videoclips had a chapter assigned to them, and as a result, if the player was capable, could not be incorporated into a programmed sequence of audio and video. You can presently only have either programmed audio or the video - but not a combination of the two. (We'll leave it to others to decide whether such a feature is desirable.)

This aspect of Chapters caused some confusion initially. All the discs had the video track listed as having a Chapter number assigned, but the discs were bereft of such coding. One suspected a player malfunction, but not so. Presently, there seems to be a difference of opinion over how the CD-V track/chapter coding specifications should be interpreted. CDs have 'Tracks', LaserVision discs have 'Chapters'. The video part of a Clip disc might be considered to have a 'Chapter' assigned, not a 'Track', and this is where the confusion appears to lie. The situation will no doubt resolve itself in time.

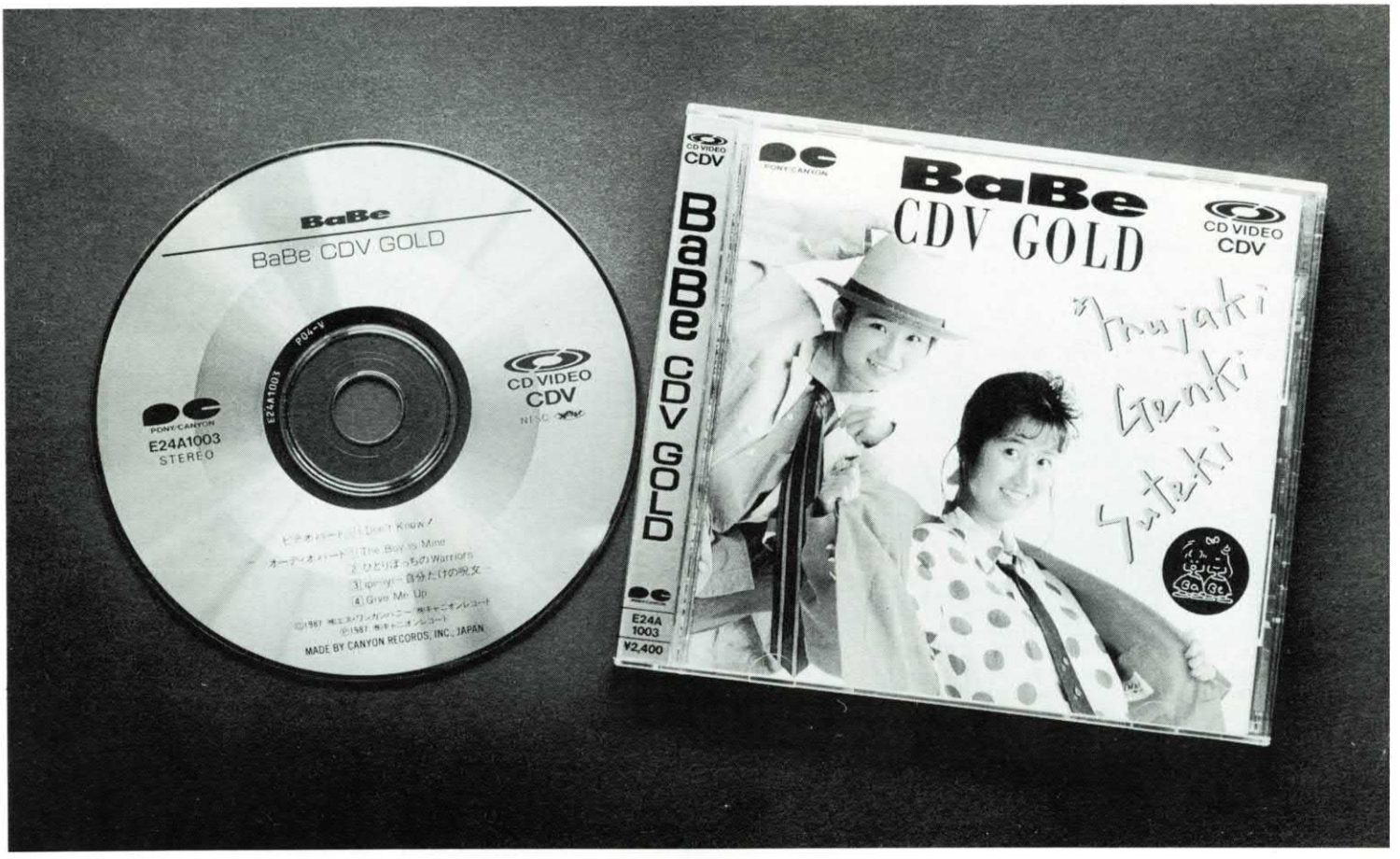
It's unlikely it will be possible to switch between the left and right audio of the video portion of a CD Video Clip - as one would expect it to if it were true to the LaserVision standard. The Table Of Contents (TOC) present at the start of every CD lead-in (that tells the player what to do) identifies the disc as "stereo", and as a result renders the left/right switching inoperative. When someone comes along with a dual-language CD-Video Clip (which will, of necessity, have to be in mono), then the TOC will identify the disc to the player as such, and the audio will then be switchable. (Obvious question - so why not tell all CD Video Clips they are dual language and let the end-user play around with the sound for themselves?)

That was the PAL Clips taken care of then. It would have been nice to have gotten hold of both PAL and NTSC machines together and run a side by side comparison, but it could not be organised so. However, a week or two later, an opportunity arose to see the Marantz clone version of the NTSC Pioneer CLD-70 (the Japanese equivalent of the 1050) which Marantz sells there as the LV-11CD.

For this we have to thank Bob Tomalski who had the machine to review for his Prestel video magazine ***Looks Great.*** [In fact, Bob runs two magazines on Prestel - the other is more concerned with audio and is called ***Sounds Great.*** Both can be accessed for the mere cost of a phone-call. If you have a Prestel terminal the number to dial up is "*448682#". By the time the old technology used to get this magazine out onto the streets cranks into gear the review of the Marantz Combi player may have come and gone, but no doubt some other interesting current video topic will have replaced it.]

Bob had a similar number of NTSC Clip discs, both alternate titles and the same titles as in the LDR PAL selection. Also, to make the trip even more interesting, Marc Comfort had by this time dispatched a Japanese Clip disc - thereby enabling us to see how things were being handled back East.

This Japanese disc, by the local recording duo BaBe (pronounced "Bay-ber"), is one of ten listed in an initial release batch on the Pony/Canyon label. It is pressed in Japan and a slightly different hue of gold and possibly more 'metallic-looking' than its Blackburn counterparts. The difference in



appearance is not dramatic, but noticeable. The disc bears the generic logo "CDV GOLD" - they don't seem to be using the word Clip in Japan.

The box and packaging is a bit different, though. It's a standard CD jewel box, but with the back half made in clear plastic. The spine is covered with a gold foil stick-on label that also carries the track listing. This packaging may not continue in exactly this form - the stick-on label, though remniscent of the manner in which LV discs have a loose paper 'flash' wrapped over the left side of the sleeve, does not look well-suited to the demands of mass production. (Unless, of course, the Japanese already have a machine specially designed for such a task - always a distinct possibility.) The disc insert contains an explanation of the CD-V format - in addition to acquainting purchasers with the CD-ROM and CD-I formats. Also there is a lyric sheet of the five songs on the disc.

To be different, the BaBe disc contains five different songs. The video track ***I Don't Know*** is not duplicated on audio. (And that is how the song title appears on the disc, in English, as do several other phrases and verses in the songs.) The video track is a little strange. It features the girls lip-synching their song in conventional fashion. The location is a Western-style fast-food outlet, Dennys, and they serve diners while singing their song. But, at several points in the song there are spoken vocal intrusions that result in the whole thing coming over as more of an advertisement than a piece of music you can involve yourself in. Interesting.

Picture quality is fairly good. It's video-originated, and while not up with first-league Japanese originated LV material, it's OK. The colour was slightly off. There was noise in the picture. The video segment runs not much short of the five minute maximum NTSC Clips can manage (as opposed to PAL's 6 minutes) and this may have something to do with it. The actual disc pressing was fairly clean - a few dropouts - but the disc was not significantly less spotty than the better of the Blackburn-pressed titles.

The disc is priced (as are all the others) at ¥ 2,400 - about £10, and two-thirds the price of regular audio CD (which would be ¥ 3,200).

Playing through the selection of NTSC discs Bob had, plus the handful of additional titles from the LDR library, showed the better of the NTSC Clips to be not far short in picture quality of their PAL equivalents. The main difference would be in detail, which was usually better in PAL. Colour there was no real difference. (Bob has recently acquired a 27" Sony Profeel and so one was looking at exactly the same model and size TV for both formats.) In some ways the loss of definition on NTSC was not such a bad thing. The various patternings visible on the PAL discs were less noticeable and, with titles such as the Go West disc (which looks to have been originated on 35mm film for the main video and 16mm for the documentary inserts) there was not the distracting variation in picture quality between the two sources. The PAL disc makes the difference distractingly apparent.

The highlight of the NTSC group of discs would have to be Kiss's ***Lick It Up*** which one suspects, on a slightly better performing player, would result in a picture hardly distinguishable from the mean standard of the PAL Clip discs. This is not to say that the potential difference is **that** slight, but practically, the PAL Clip discs so far seen would appear not to be showing as much in the way of picture detail as is achievable.

The quality of pressing of the NTSC discs proved pretty much comparable to the PAL batch. Some good some bad. By a stroke of good fortune the Kiss disc was a particularly clean sample.

Soundwise there is little to comment about the Clip discs. There is tonal variation between them, but in more than 20 samples auditioned (in PAL and NTSC) there was not a sound fault to be heard. Bob had some criticism of the sound quality of the LV11CD combi player compared to that of a fairly basic Yamaha CD Audio player he has, and it was not at all difficult to find oneself in agreement with him that many of the discs sounded more detailed and open on the CD player. The way CD Video is to be promoted (as an audio plus video medium) will mean audio performance will count for more in many puchasers' minds than the absolute performance of the picture.

For that it will probably do if the Clip discs are no worse, in master quality than they are now. When people get their hands on Super-VHS VCRs, though, and see the considerable narrowing of the gap between disc and tape they might (rightly) expect just a bit more.

There is certainly a need to embellish the Clip discs a bit, to give more of the feel of 'a production' and no doubt this is something that will develop. Although the many thousands of people who bought the Level 42/***It's Over*** disc don't know one way or the other at the present moment, the extra 30 seconds tacked on the end of the video (of the camera panning around the desert - without any aural accompaniment) is probably a bit less than they would like to discover in due course to make the Clip format sufficiently appealing in the long term.

But it's a start.

Sales tales

Few established LV dealers managed to obtain copies of the Level 42 disc mentioned in this article - the first PAL CD Video Clip to go on sale. Distribution was not effected through normal channels, which is often the case with regular CD Audio singles.

However, readers did report some measure of success in tracking down copies in conventional record outlets. The price variation was wide. The only occasion the disc sold at £4.99 would appear to have been to the handful of people who bought them from the Covent Garden stand at the Heathrow Penta.

Typical prices elsewhere were £5.49-£6.99. In a league of its own was Tower Records - charging £11-49 (and quite proud of the fact apparently, even after someone took to querying their considerable mark-up). These CD Clips are definitely going to be promoted as collectables - but not that collectable!

THE WRONG DISC in THE WRONG PLAYER

Left: The acceptable face of Kiss? This off-screen photo is from an NTSC Clip disc of ***Lick It Up*** played on a PAL CD-V player.

In our continuing endeavour to do things completely the wrong way round, and before anybody else has a chance to (a precedent established way back in LDR-5 where we detailed a series of attempts at putting NTSC LV discs into PAL players and vice versa), the advent of CD Video has opened up a whole new vista of untried possiblities in this area worthy of our usual diligent investigation.

Digital LV Disc/Analogue Player

But the first compatibility question you'll be keenest to know the answer to is - "What happens if you put a PAL LV disc with the new digital soundtrack into a current analogue-only PAL LV machine?" Well, picturewise, everything is as usual - it's sharp, stable and the picture signal is every bit what you would expect of an LV image. The sound isn't. You hear a constant "whooshing", with no discernible audio modulation whatsoever. The sound is reminiscent of that achieved when putting an NTSC Digital Sound disc in an analogue PAL player. So, it looks like they've got us over a barrel when it comes to **having** to buy a new player.

LV-ROM Disc/Digital Player

On to the new CLD-1050 Combi player now. One 'special' digital disc - one of the ***Domesday*** AIV discs was worth trying on it for starters. The disc started off by turning the CLD-1050's 'Digital Sound' indicator light on, and a stream of data pulses was clearly audible coming off the disc. Then the "Domesday" logo came on-screen. This is accompanied by a brief piece of music - in analogue - that is audible on any conventional LV player. While this music was playing the 1050's Digital Sound light went off. Thereafter the digital pulses returned and the indicator light came back on.

NTSC Clip/PAL Player

Some NTSC Clips were put in the Pioneer CLD-1050. What is supposed to happen is the player reads the disc's Table Of Contents (TOC), identifies the disc for whatever it is, and then (in this case) switches off the video function and plays only the audio portion of the disc - as though it were a regular audio CD. You lose the video track - both the video and the audio (which is encoded in with the video signal). Or at least you should do.

Everytime we tried one of the NTSC Clips the machine blundered into the video track - a little way after the start - generated a perfectly sharp and stable black and white image, and (surprise, surprise!) put out half-decent audio that was quite intelligible, but sounded as though it had been recorded underwater - it had a sort of 'burble' to it. It was only possible to play the Clip discs in short 2-3 second cycles before they would jump back to where they started. It was necessary to scan the discs forward to hear a different part of the disc, and once you had gone forward, it was not possible to get back to the beginning again. It was also not possible to access the later parts of the video track, the scan function would just not provoke it past a certain point.

It seemed worthwhile to try and ascertain why this was happening - whether it was just a machine sample fault or a problem with the software. The first person we spoke to up at PDO, Blackburn resorted to words of four-letters when advised of the problem. This suggests some sort of unintended incompatibility. (It would have been nice to have had one of the Japanese Clip discs to hand to see how that fared on the 1050, but unfortunately they didn't arrive in time.)

PAL Clip/NTSC Player

When it came to doing things the other way round - putting a PAL Clip on an NTSC player - you guessed it, the same thing happened. Perfectly stable black and white picture, burbly but discernible sound, and the same reluctance to play the disc all the way through without the additional stimulus of the scan button. As a bonus we even got a colour signal of some description. This colour effect has been achieved on previous NTSC LV players when playing PAL LV discs. You get a a series of vertical colour stripes across the screen, totally unrelated to the luminance signal. However, **some** of the colour signal **was** prepared to attach itself to the appropriate part of the image (although it was very washed out and of the wrong hue).

These experiences suggest that there may need to be some additional harmonisation between hardware and software for the CD Video Clips in order for them to perform as they are supposed to. But, the remarkable closeness to playability of both types of disc in the wrong machine does again beg the question as to why a multi-standard disc player can't be developed?

CD players and discs · PAL & NTSC

	player & disc compatibility						
	12cm DISC CD AUDIO	12cm DISC CD VIDEO (NTSC)	12cm DISC CD VIDEO (PAL)	20cm DISC CD VIDEO/ LASERVISION (NTSC)	20cm DISC CD VIDEO/ LASERVISION (PAL)	30cm DISC CD VIDEO/ LASERVISION (NTSC)	30cm DISC CD VIDEO/ LASERVISION (PAL)
CD AUDIO PLAYER	AUDIO	AUDIO	AUDIO				
CD COMBI PLAYER (NTSC)	AUDIO	AUDIO VIDEO	AUDIO	AUDIO VIDEO		AUDIO VIDEO	
CD COMBI PLAYER (PAL)	AUDIO	AUDIO	AUDIO VIDEO		AUDIO VIDEO		AUDIO VIDEO

Above: This table shows what should happen with PAL/NTSC discs and players.

日本の報告

From
Our Correspondent In Japan
MARC COMFORT

New hardware introductions continue in the wake of the premiering of CD-V at the recent Tokyo Audio Fair. The illustration is of the new Pioneer Combi player that replaces the CLD-70. There are two models in fact. The top priced CLD-99S features a digital picture memory that allows still frame and other effects off of CLV discs. There is a variable-speed jog/shuttle scan feature and 20 track programme memory. Basic control functions are on the machine, and the jog/shuttle feature is on both machine and remote. The price is ¥158,000 - a touch more than the model it replaces, but a lot less than the near double the price LD-S1 that doesn't even play CD/CD-Vs. It's obviously much better value for money. The resolution spec is up too and 420 lines horizontal with the same 46dB S/N figure is quoted. The ¥129,800 CLD-77 does not have the digital picture memory feature. (NEC, for one, is also selling these new machines under its own brand name.)

Also from Pioneer is the PD-707V CD Audio & CD-V Clip player. It comes with a remote and sells for ¥79,800. Both this machine and the Combi players bear the CD Video logo on them, but as with other manufacturers, there is a tendency to use the term CD Video for the new Clip format and stick with LaserVision/Laser Disc for the larger formats.

Another manufacturer with a dedicated Clip player is Yamaha, that is selling its CDV-S100 (pictured in LDR-14) for ¥69,800. Their CDV-1000 Combi machine (also pictured last issue) sells for ¥119,800. This is much cheaper than any previous Combi player. (All prices quoted are 'list' - discounts of 20% are not unusual, which at ¥240 to the £, means the Yamaha Combi can be bought at between £350-£375!)

No details yet of the new Sony Combi, the MDP-AV1, but it lists at ¥124,800. Hitachi's VIP-35C Combi player lists for ¥139,800. This machine looks to be the same as the model mentioned on two previous occasions (under different model numbers), but the spec now being quoted is 425 line resolution with 46dB S/N.

There is a ten title batch of CD Video Clips from Pony/Canyon on sale already, but these have not shown up in the monthly LaserDisc release sheets put out by Pioneer. The latest of the Pioneer lists mentions two discs (both running less than 20 minutes) under the 'LD Single' banner that seem to be a sort of 8" format conjured up to compete with the Clips. Their price is ¥3,000, slightly more than the ¥2,400 the Clips are selling at.

But to go back to the September release sheet, this proclaimed the release of a near-unbelievable 5,000 LV titles. It was only at the beginning of the year that 4,000 was being boasted of. It is difficult to have a month where at least 60 new titles are not announced.

A new barber/hairdresser's shop in Tokyo has a special service - watch your favourite movie on laser disc in stereo (via aircraft type ear-plugs) while having your top-knot pruned.

November was scheduled to see the release of ***Golden Child*** on both disc and in Super-VHS! No word of a Super LaserVision version, though. This anticipated 500 line format does not appear to be being mentioned too much at the moment.

U.S.A. REPORT

The American Disc Scene - Seen From The Other Side Of The Counter

LDR keeps in touch with what goes on discwise in the USA via three main sources. The ever-reliable monthly ***Laser Disc Newsletter*** is always a good source for the latest news and reviews, and is available to all. On a more direct level news arrives at LDR from Chicago via correspondent Dwight R. Decker and, on the West Coast, Craig Hyland. Craig actually spends part of his life working at a major laser retail store in Seattle, Videophile, and on a recent trip to London last September, he took some time out to describe the realities of the videodisc scene in the US.

Seattle is a city of 1,000,000 or so people, situated in the north-west corner of the United States, confusingly for non-Americans, in the state of Washington. (The capital city of Washington, better known to foreigners is, in fact, some thousands of miles further east.) The Videophile shop is located above street level (on the first floor) of a shopping area. It's not exactly a shopping mall. It has its own entrance and window frontage opening out on to a balcony-type area.

The store has been established some five years or more. Eighty percent of the floor space is given over to disc (video), and the rest to VHS cassette. The cassettes are for rental and for sale. The sale cassettes are predominantly the more recent low-priced releases intended for the sell-through market, and as such, are selling in progressively healthier quantities by the week as this sector of the market is nurtured by the video companies. Some of the sales of VHS cassettes are to (primarily) disc customers, who frustrated by the non-arrival of the disc version, settle for a VHS copy of a movie as second best. According to Craig - "Customers are always coming up to the counter rather begrudgingly if they find themselves buying the tape, when the disc has yet to appear. Or they'll come up to you with the tape and say 'Have you heard if this is coming out on disc yet?' hoping that you'll say 'yes', because they're going to have to buy the videocassette if we say otherwise".

Stock - Out of the 2,000 titles in the Pioneer catalogue Videophile carries about 1,000. They would carry more if every back catalogue item was readily available (which it isn't), but not so as to have the complete 2,000 title inventory. The sort of titles that would not be re-stocked after the initial release would be things such as ***Summer Camp Nightmare***, a title Craig plucked out of the air as one that the store had yet to sell even one copy of (and he suspects never even made the cinema circuit before disc release). The market is mainly for movies - and fairly evenly divided between recent premium cinema releases and older collector/classic movies. It's a sophisticated market in comparison to the general home video market. Videophile stocks various movie catalogues and books that customers are free to investigate to help guide their choices.

Music - Music does sell too. Opera sells well, though the price is sensitive. Pioneer has recently hiked the price of opera titles from $49.95 to $54.95, even $59.95. In itself this is bad enough, but the very variation is a disincentive to sales. Customers are rightly confused as to why one opera disc is $5.00 more than another. Pioneer's attitude to disc pricing is presently rather confused altogether. Single-sided discs that would have in the past appeared at $24.95 have been showing up at $29.95 when the whole thrust of the market would tend to suggest a lowering of prices. It may be the company is savouring its final moments of isolation (and hence lack of competition) in the market before the CD Video promotion inevitably pushes prices down.

The 8" disc hardly sells at all at Videophile. It could be because the music market is not yet properly established. Most of the store's customers are upscale and the selection of titles on 8" does not reflect that market. Disc buyers tend to be (presently) 25 and upwards. Says Craig - "We have very few kids in here buying discs. If they do, it's with their parents normally. They get to pick a title out while their folks are buying something. Something like one of the ***Friday 13TH*** films".

One of the reasons pop music titles don't sell is that they are invariably late into the market on disc. The new 12" music Compact LaserDiscs would undoubtedly have done better, according to Craig, if they were more timely. Not months after the tunes were out of the charts.

[The current Pioneer catalogue now lists over 2,000 LV titles.]

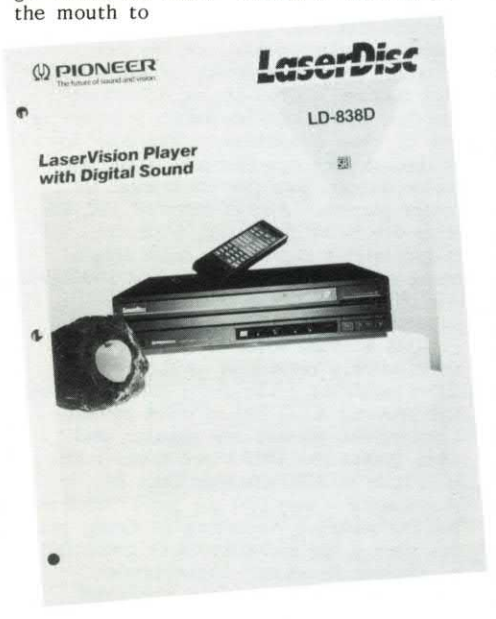
Hardware Sales - Player sales are healthy at the moment. Videophile had three of the CD-V capable CLD-1010s delivered the week after the Chicago CES, one of which became a store demo machine, the other two being sold straight away. Ever since, the new combi machine has been going out the door almost as soon as new supplies have arrived. (A report elsewhere suggested that Pioneer shifted around 10,000 of the new combi players within a month or two of their availability. The company is talking very aggressively of making major inroads into the US market with combi players. Annual sales of 100,000 units are being projected, with the magic million cumulative sales figure being achieved sometime around 1990/1991 - a tripling of the present player population.)

This buoyant level of sales is not necessarily a reflection of the recent CD-V publicity. The store could not keep the previous CLD-909 in stock either. Combination players are popular, and what makes the 1010 more popular still is that it is $100 cheaper than its predecessor - and you get more features for the money. According to Craig, price has been a big disincentive to potential purchasers all along. Videophile's proprietor, Court Attinger, maintains

that a $299 player is what will turn the market. And at that price it wouldn't need to be a combi unit - just a basic LV player.

Pressed to suggest a price at which the combi payer would be be going out the door left and right Craig picked - "Anything under $500. That's the magic price. The present price is $800, which means we sell at $699. I'd like to see disc players priced to take into account the fact they don't record. This is the point of conflict you find when customers are potentially interested in the product that prevents them buying - the fact that it appears to offer less for more as far as facilities are concerned. Your average price on a VCR these days is around $500, so a disc player should be proportionally lower than that. I don't know whether you could determine a definitive relative price, though. After all, a VCR can't give you digital sound".

The most surprising aspect of the arrival of the 1010 is that Videophile's customers are not harassing the store for supplies of the (presently) non-existent Clip discs. "No-one seems to be that excited about them, at least not on the basis of the title list we were given. Customers look over the list and go 'Mmm, oh well'. Nobody's foaming at the mouth to



get hold of anything in particular. With a few exceptions, the existing 25+ market is not going to be really interested in the Clip configuration. It's definitely more a kids' market. What sells the new player is the **capability** to play such discs rather than anything deeper".

Flat discs? - "The other bonus of the 1010 (and the 838 LV) player is that they both track warped discs with ease. There is no such thing as a flat disc from Pioneer in the US. It doesn't exist. That comment in LDR - in the review of the Sony LDP-730 - about the window in the drawer revealing how warped our discs are got a big laugh from people who read it. That was the part that everybody could relate to. Amen. Everytime we open a disc in the store, sure enough, I can slide a quarter under the rim at one point. They're not getting any better - they almost seem to be getting worse. And yet, the new players play them as though they were flatter than pancakes. There is no indication on the screen that there is anything wrong with them. We used to have customers who were continually bringing 'faulty' discs back and, out of exasperation, have bought one of the new players to rid themselves of the problem. It's not unusual to get a phonecall right after they've got the thing home to say that it will play discs they had previously considered unplayable. It seems a rather backward way of doing it. It makes more sense to start out with a flat disc than to modify the player to play, you know, garbage".

Spots - In reponse to the question - "Are American discs clean enough?" Craig was not at any loss to come up with a suitable reply - "No. No. We take back quite a bit from our customers. Spots are the major defect. It is pretty horrendous at times and a fairly consistent problem. We don't get any significant rejects of 3M-pressed discs. Japanese-pressed discs are also virtually flawless". (Craig, at this point, commented how he took out a copy of ***Soul Man*** at random from the shelves after reading the LDR review in LDR-13. In his opinion the copies he'd seen of the Blackburn pressed disc were above the local average.) One of the things he does find slightly annoying about US pressings, in that they **can** make good discs, but fail in making them **consistently** good.

Videophile's customers tolerate the erratic nature of the local pressing though, predominantly because they believe they won't get a better copy by replacing it. Says Craig, in respect of his personal disc purchases - "I tolerate it to an extent, although it has definitely limited my purchases. It's got to the stage that, even if I really like the movie and yet it's pressed in the US, it's not good enough reason for buying it. I know I will be disturbed by the visual quality, the number of dropouts".

Inspite of all this Craig believes there is no real threat to disc from Super-VHS (which is already on sale in the US) as far as the pre-recorded market goes - "The disc always has the feature of instant accessibility - once you've **got** the disc!".

A lot of Videophile's customers are actually disc only - they don't have a VCR. Craig believes that even many VCR owners do not really appreciate the recording facilities of their machines and use them predominantly to watch pre-recorded movies, rather than as a time-shift device. Videophile rents disc players and finds that a percentage of customers can't get the machine to work fully. It's therefore easy to understand the problems people might have with VCRs. Ease of use counts for a lot with a disc player and Craig was fully in agreement with the suggestion that a good percentage of customers made no use of many of the disc player's facilities. - "We have customers come in with defective discs, but can't say where the problem occurs because they haven't yet got to grips with the time display function even. A lot of people just don't use the controls - they are intimidated by them. The remote is too complicated, so they don't use it". Craig spoke positively of the 1010's remote in respect of the large play and scan buttons.

Japanese Imports - This is something that Videophile has been dabbling in during the last year or so with some reservations, a consequence of the erratic, and usually declining, value of the $ against the Yen. "The hottest sellers are the CAV special editions in letter-box format with digital sound - *2001* and ***Star Wars*** particularly. ***Empire Strikes Back*** would be up there too if we could ever get enough copies in. We had an order for 20, but had it cut to 5 by the importer who was similarly supplied short. All the copies we did get were pre-sold. Such discs are obviously a specialised sector of the market, but the people who want these sort of things really want them. We were selling *2001* for $150. We did a chart of all the cinema aspect ratios and put it on the wall. Customers are beginning to realise more and more what they are missing on normal film transfers".

"Because of the previous non-availability of Thorn/EMI product in the US we've had some demand for their titles on import too. Things like ***The Hitcher*** and some Agatha Christie things. There are some Disney cartoon packages in Japan you can't get in the US also".

Earthquake - Craig speculated on the imminent re-release of ***Earthquake*** by MCA - a title long deleted since the days of DiscoVision. The hope is that the Sensurround track will be included in some manner. Sensurround films were done in different ways when they were in vogue. "There was a signal on the film

of ***Earthquake*** that tripped a sound generator that randomly put low frequency sounds into the special speakers, so literally, every performance was different. You weren't getting the same rumblings at the same time in the theatre." Craig has fond memories of his first encounter with this particular movie - "I had gone with a friend whose dad owned a theatre up in Oakharbour, Washington. We had no idea it was going to be in Sensurround. All I knew was that we were going to see this movie with Charlton Heston. We got to the theatre late (the picture had just started) and we missed the disclaimer at the beginning that the presentation was in Sensurround. We didn't want to be obnoxious and go sit down the front after the movie had started, so we just sat in a back corner without interrupting anybody's view, not even noticing this huge speaker right behind. The first earthquake scene came on and I just jumped out of my chair. I just didn't know what was going on. I thought the theatre was going to come down around me. It'll be quite spectacular if they manage to mix that track in on the disc".

There were other Sensurround movies - ***Midway***, ***Rollercoaster***, ***Buck Rogers In The 25TH Century***. These, according to Craig, were done slightly differently from ***Earthquake*** and had low frequency sounds actually on the soundtrack, DBX encoded. "There will be a lot of disappointed people if ***Earthquake*** doesn't come out on disc with its Sensurround track included. It's its only shining attribute. It's an excruciating film to sit through. It's got some of the worst performances".

On the $2,000 LDS-1 with its digital frame store - "We sold only two, both within the first week it came out. They just sit now. Everybody comes in and looks at it and they're very impressed. But it's the price. It scares them away. We're giving away $200 worth of free laser discs if you buy it, but even that's not enough".

The LDS-1 is making many of Videophile's customers rethink their attitudes towards CAV, having as it does the ability to produce a still frame just about anyhwere you'd want it on a CLV disc.

"Without any provocation on our part people say 'Oh, I guess I don't have to buy CAV discs any more'. And really, there is no need for CAV unless you have a still-frame photo or text file on the disc. Most of our customers complain about the discs being $34.95, so the $80 or so many of the CAV special editions go for tends to limit their appeal to the absolute buffs. Now the LDS-1 is out, and people can see what the machines will eventually be able to do, removes the need for many people now to buy CAV discs. Customers really enjoy the improved scanning performance of the LDS-1 too. The first company to put the digital frame store in a regular-price combi player will clean up".

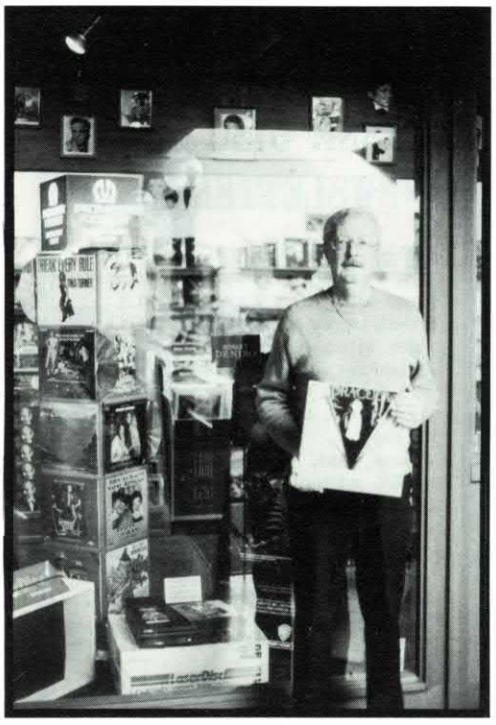
(Although Craig does not enjoy the use of an LDS-1 at home he is presently 'minding' a Sony LDP-730 LV player that has a digital frame store for a friend. This player is not generally available in the US. To substantiate the review of the machine in LDR-11, his sample of the player also exhibits the same problem with intermittent line dropout across the screen, thus tending to indicate a design fault in the machine rather than just a 'luck of the draw' sample fault.)

Titles on disc - It's fairly obvious from reading the US release schedules that the movie collector is far better catered for in the US. One of the pre-eminent companies is MCA, who understandably (because of its long involvement and sharing of the patents on laser videodisc with Philips) has done more than its share of issuing mixed CLV/CAV editions of movies - often from restored prints and including still frame files and trailers. Craig was scathing, however, of a recent lapse in taste on their part in respect of the titles released under the 'Gene Shalit's Critics Choice...' banner, where some rather prominent photos of the mustachoied film critic are splattered all over the front-of-sleeve movie artwork. Film collectors don't need, nor want, this sort of downmarket presentation. Beyond that, though, Craig has mostly good things to say about MCA's general approach, and enthused about the recent ***Palm Beach Story*** print they used for disc release.

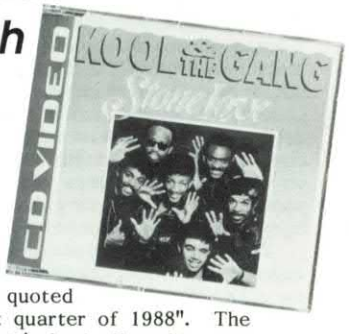
Craig is less happy about the general appearance of many other recent movies, many of them looking too grainy, and cited ***Crocodile Dundee*** and ***Big Trouble In Little China*** as two examples.

CD Video - The store is getting ready to carry CD-Vs (Clips). At present they do not stock CD Audio, and there are no immediate plans to alter this policy. A recent development in marketing in the US is the emergence of 'laser' stores that carry both CD Audio and LaserVision products, a concept Videophile is presently not considering competing with. Seattle's outlet of this type is called Silver Platter, and elsewhere in the country there are franchise chains such as those under the LaserLand name.

One of the compensations for Craig of having to return home after two weeks of visiting the sights of old England was that there were no less than 24 new LV discs to greet him on his return to the store. In the same period, in the UK, we managed the grand total of two.



CD Video Launch News



The CD Video launch is now being quoted for "the first quarter of 1988". The story is that it's basically taking longer to organise than was originally allowed. Obtaining discs of sufficient quality and quantity is one of the reasons given for the delay.

A new source of Digital Sound discs has arisen in the last month. 3M is now able to make them and their pressing of

Top Left: A general view of the interior of Videophile.
Bottom Right: In the Classics section - whole rows of Hitchcocks, Marx Bros etc.
Top Right: Videophile's owner, Court Attinger, with DiscoVision collectable.

A Nightmare On Elm Street 3 for Image Entertainment was the first to hit the stores. It was also one of the first discs to bear the CD Video logo - but not at the expense of the old LaserVision logo which is still being used. One slight flaw in this development is that the disc was marked on the sleeve as stereo which does not appear to be the case - it's a slightly hissy mono soundtrack!

The Island (again on Image) has also appeared as a Digital Sound disc with the CD Video logo - this time pressed by Pioneer in the US. Pioneer's pressing of ***Bullitt*** for Warner was done in the US too, and at 114 minutes exceeds the previous 55 minute maximum per side for Digital Sound discs. Pioneer's revamped US plant is now supposed to be capable of producing 4,000,000 LV discs a year.

Recent Warner LV discs have been showing up with revised sleeve artwork. All the text is pushed over to the left-hand side, with about a one-third vertical area of the right-hand side of the sleeve being a neutral grey. Looks like the design was done to harmonise with the new CD Video packaging - the blank area on the right to give way to a view of the disc.

Treasures Of The Smithsonian is a book at present, but plans are afoot to transfer some of its contents to a CD-I disc during 1988. The disc will concentrate on 300 of the museum's artefacts (including the Apollo 11 space capsule). The production is being done through American Interactive Media in conjunction with the Smithsonian Institute.

Recent LV Releases

New titles for October - November are listed below. All information comes from Pioneer/LDC and Image Entertainment Release Sheets and should be regarded as provisional. Eventual release specifications may well alter.

Some new software company names appear in the list this time. One of these, Nelson Entertainment, is the new name for Embassy Entertainment and applies to all their product released after August 15th.

All titles are 30cm/CLV/Mono unless otherwise indicated. Abbreviations used are 'Di' - Digital Audio, 'S' - Stereo, 'CX' - Analogue Noise Reduction, 'CC' - Closed Captions, 'Subs' - Subtitles. '(XXX)' indicates a Porno title likely to prove incompatible with the aesthetic values of H.M. Customs & Excise.

OCTOBER

Dead Of Winter - CBS/FOX 5147-80 $34.98 - S,CX,CC
Stranger Than Paradise
- CBS/FOX 6896-80 $34.98 - CX,CC
Journey Of Natty Gann
- Walt Disney 400AS $34.95 - S,CX
Lady & The Tramp - Walt Disney $34.95 - Di
Lady & The Tramp - Walt Disney $44.95 - CAV
Sleeping Beauty - Walt Disney $44.95 - S,CC,CAV
Ghost Fever - Embassy 902096 $34.95 - CX
Toby McTeague - Embassy $34.95
Back To School - HBO Video TVL2988 $29.95 - S,CX
Code Of Silence - HBO Video TVL2985 $29.95 - CX
F/X - HBO Video TVL3769 $29.95 - S,CX
Haunted Honeymoon - HBO Video TVL3911 $34.95- S,CX
Three Amigos - HBO Video $34.95 - S,CX
Something Wild - HBO Video $34.95 - S,CX
An American Tail - MCA 40536 $49.98 - S,CX,Di,CAV
Earthquake - MCA 10002 $39.98 - S,CX,Di,CLV/CAV
MacArthur - MCA 15003 $39.98 - S,CX,Di,CLV/CAV
Never Give A Sucker An Even Break
- MCA 22015 $29.98 - CX,CLV/CAV
The 3rd Monty Python's Flying Circus
- Paramount LV 12545 $29.95
The 4th Monty Python's Flying Circus
- Paramount LV 12560 $29.95
Various Artistes/Video Love Songs
- Pioneer Artists PA-87-192 $19.95 - S,CX
Best Of The Superstars: Dick Clark
- Vestron $29.98 - S,CX
Everytime We Say Goodbye - Vestron V9961 $34.98
Light Of Day - Vestron V5200 $34.98 - S,CX
Toxic Avenger - Vestron V9953 $34.98
Hanoi Hilton - Warner 37068 $39.98 - S,CX,Di,CC
Lethal Weapon - Warner 11709 $34.98 - S,CX,CC
The Song Remains The Same
- Warner 1300AS $39.98 - S,CX,Di

NOVEMBER

Don Johnson/Hearbeat
- CBS/FOX 3991-80 $24.98 - Di,S,CX
Raising Arizona - CBS/FOX 5191-80 $34.98 - S,CX
Miracle On 34th Street
- CBS/FOX 1072-80 $34.98 - CX
Amadeus - Saul Zaentz LV1791 $44.95 - Di,S,CX
Hoosiers - HBO $34.95 - S
Platoon - HBO TVL0040 $39.95 - S,CC
P.K. & The Kid - Image ID5155 $36.95 - Di,CX
From The Hip - Image ID5156 $36.95 - Di,CX
Street Smart - Image ID5157 $36.95 - Di,CX
Natural States - Image ID5159 $29.95 - S,Di,CX
Desert Vision - Image ID5160 $29.95 - S,Di,CX
Deadline - Image ID5158 $36.95 - Di,CX
American Ninja II - Image ID5161 $36.95 - Di,CX
Best Of Chevy Chase - Image ID5162 $29.95 - Di,CX
Swimming To Cambodia - Image ID5163 $49.95 - Di,CX
Lust On The Orient Express - Image 10036 $49.95(XXX)
Legends Of Porn - Image 10039 $49.95(XXX)
Sweet Charity - MCA 17003 $44.98 - CLV/CAV,Di,CX
Doors/Live At Hollywood Bowl
- MCA 40592 $29.98 - CLV/CAV,Di,S,CX
The Seven Per Cent Solution
- MCA 11008 $34.98 - Di,CX
The Eiger Sanction
- MCA 12002 $39.98 - CLV/CAV,Di,CX
Yellow Submarine - MGM/UA 101170 $34.98 - S,Di,CX
Solar Babies - MGM/UA 101027 $34.98
The Philadelphia Story - MGM/UA 100059 $34.98
The Bandwagon - MGM/UA 100103 $34.98
Burke & Wills - Nelson 90214 $34.95
River's Edge - Nelson 76906 $34.95
Slumber Party Massacre II
- Nelson 76886 $34.95 - CX,CC
The Whistle Blower - Nelson $34.95 - CC
Fire & Ice - Nelson $34.95
The Red Shoes - Paramount LV12572 $34.95
Barbra Streisand/One Voice
- Pioneer PA-87-204 $29.95 - Di,S,CX
Royal Ballet/The Nutcracker
- Pioneer PA-87-202 $39.95 - Di,S,CX
Windham Hill/China
- Signature PS-87-021 $24,95 - Di,S,CX
Ishtar - RCA/Columbia 60849 $29.95 - S,CX,CC
Native Son - Vestron VL9963 $34.98 - S,CC
Gothic - Vestron VL5215 $34.98
Evil Dead II - Vestron VL5212 $34.98
Andrew Wyeth/The Helga Pictures
- Videodisc Publishing $59.95 - CAV
The Graduate - Criterion $79.95 - CAV
Hard Day's Night
- Criterion $79.95 - S,CAV
It's A Wonderful Life - Criterion $89.95 - CAV
Outlaw Josey Wales - Warner $39.98 - Di
The Outsiders - Warner $29.98 - Di
Excalibur - Warner $39.98 - Di
Who's Afraid Of Virginia Wolf
- Warner $39.98 - Di
Burglar - Warner 11705 $34.98 - Di,S,CX,CC
Over The Top - Warner 11713 $34.98 - Di,S,CX,CC
Police Academy 4
- Warner 20025 $34.98 - Di,S,CX,CC
Who's That Girl - Warner 11758 $34.98 - S,Di,CX
Superman IV - Warner 11757 $34.98 - S,Di,CX,CC

Made in Blackburn

part two

Before going on to the actual disc pressing part of the process some points about disc mastering need to be cleared up. It can be seen that, during the transition from the silvered glass master to the nickel sheet stage, only one stamper is achieved. It is the convention in vinyl disc pressing (on which many of the principles, if not the actualities of LV manufacture are based) to produce a family of stampers, for reasons of both insurance as well as enabling the production of larger and/or quicker press runs. Stampers can become damaged and they certainly eventually wear out. An approximate figure they work to at Blackburn is 25,000 pressings from a stamper before it needs to be retired.

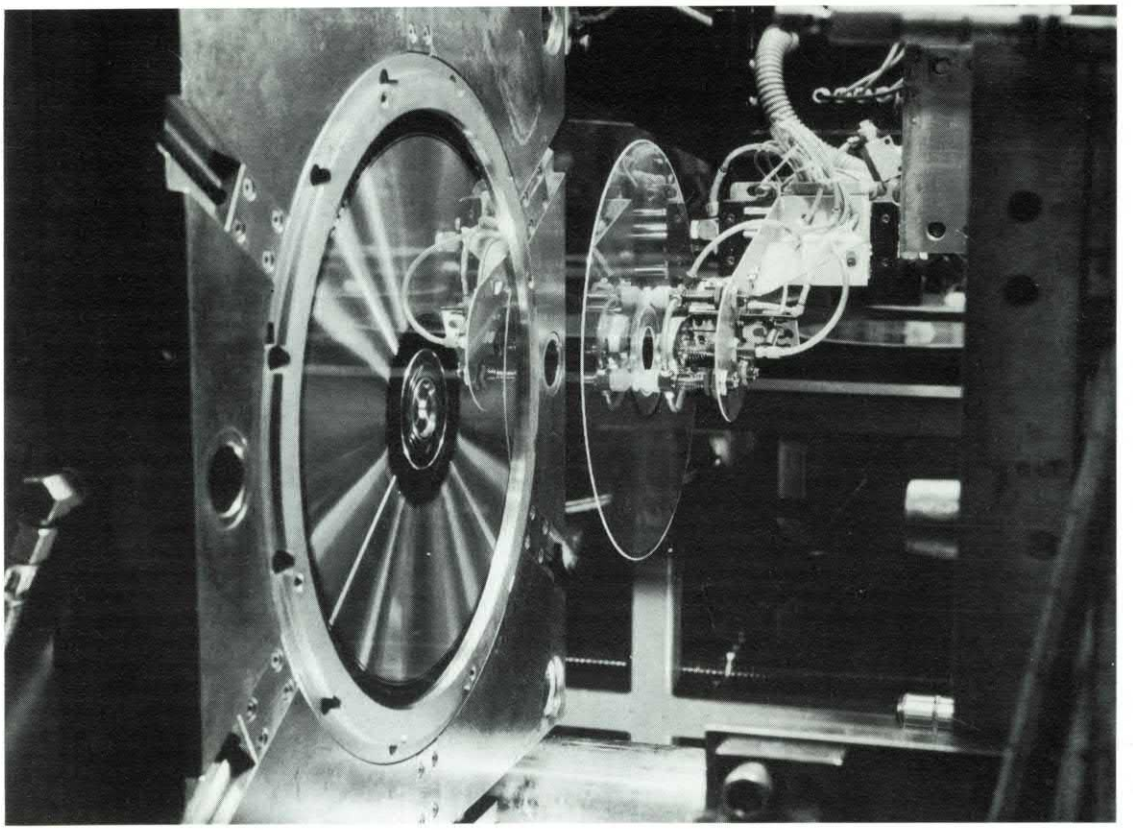
But rather than run off sub-masters beforehand (that would involve treating the first nickel stage as a 'father', growing a 'mother' from this, and then producing a series of 'sons' - two extra process stages) it is presently the practice to avoid the family making sequence and the subsequent signal losses involved. What can be accommodated within the vinyl process does not necessarily hold true for the 60 fold greater density of information recorded on a laser disc.

Things may change. They almost certainly will if disc prices are ever to achieve the sort of low levels promised before anybody ever got to the stage of actually making optical discs in production quantities. Ten years ago the big incentive for going with disc was the promise of discs being bashed out of presses at a rate of knots comparable with vinyl manufacture, and at a cost of "pennies". This idyllic vision has clearly not come to pass. Optical disc production remains a comparatively high price operation, as yet some way from achieving vinyl price levels. To cope with the problem of family making, as well as considerably reducing the cost of mastering overall, a new mastering and stamper making process is currently being developed for videodiscs at Blackburn. [This wasn't how we originally wrote this new development up and what is printed is the amended copy as received back from PDO. Readers anxious to know more specific details of the new process are advised to contact the Editor personally. But be warned, we're talking a briefcase-full of crisp fivers here!]

Disc pressing (replication) is a totally separate process from the mastering and stamper making. It goes on in a different building. (Even if the other building is only a short walk across a service road away.) While this is still a clean room environment, there is less of a requirement for special clothing and the general level of activity is noticeably higher. Or maybe it's just that it's a lot noisier.

When the Blackburn plant was established it was with a different disc pressing process to the one used now. Known as the 2P method (the '2P' standing for Photopolymerisation) it was persevered with for several years before the current injection moulding method was adopted. Injection moulding is by far the most common method of pressing optical discs worldwide. The reason for changing from 2P has much to do with the very practicalities of volume production. Injection moulding allows continuous flow production rather than the batch working of the 2P process; quality control is more effective (for example, it is possible to start monitoring the output 15 minutes or so after the presses start running, rather than the period of hours that would be

An exterior view of part of the PDO, Blackburn plant.



On the left is the nickel stamper mounted on a massive steel backplate, one half of the Meiki injection-moulding press. A moulded disc-half is seen being withdrawn by a robot arm that places it on a conveyor behind.

involved before), and shifting into the production of larger quantities of discs is also easier.

Come this pressing stage, raw granules of polymethyl methacrylate (not quite as obscure and exotic a material as it sounds, it's usually better known under one of its branded manifestations such as Perspex or Plexiglass, or can be referred to in abbreviated form as PMMA) are heated and forced under pressure into a mould consisting of two halves that are pushed together at the same time.

The Blackburn injection-moulding machines are pretty massive pieces of equipment compared to the size of the disc they have to handle. But such are the enormous pressures involved that their bulk is a necessity. They operate in a horizontal mode and are rather like oversize bench vices - the two halves of the disc mould being where the jaws would normally be, and behind are the shafts that push the two faces together as the granules are injected. The presses are made by the Japanese Meiki company. The nickel stamper is mounted on one 'jaw' face, backed up by a very precisely engineered steel support plate, for which there is a matching back plate on the opposing jaw. The two faces are brought together and the molten granules fed in between them, via a cylinder that comes through the back of one plate, through where the spindle hole of the disc will be. The heated plastic fills the mould as the plates are forced together and the press visibly heaves off the ground in the process. As the jaws of the press are pulled apart a clear plastic disc is left between them with the recorded signal embedded into one of the faces.

A robot arm dives in between the jaws and lifts the disc out, placing it on raised support pins on an adjacent conveyor belt. The speed and temperature of the press governs the flatness of the discs as well as maintaining the integrity of the recorded signal, and it is after the discs are removed from the press that monitoring for flatness can be carried out and adjustments made accordingly. The age of the players mostly in use in the UK demands that discs be made with as little warpage as possible, such is the inflexibility of their tracking mechanism.

(The photo of the Meiki press unfortunately does not convey a very good impression of its considerable bulk. As with the new disc making process and several other aspects of current disc production, PDO is understandably sensitive about giving away too many secrets to the competition. In itself the Meiki press is not on the restricted list, but the manner in which it is connected up on the production line is. Hence the limited view of the photo. What you do see is, on the left, the metal stamper mounted on its steel backplate with the just-pressed disc being withdrawn by the robot arm. Although it may not be clear in the reproduced photo, behind is the conveyor on which the discs are placed.)

The conveyor belt transports the disc halves through to the next stage - the addition of the reflective coating. It is this coating that allows the laser in the player to read the pattern of pits on the disc and is what differentiates the LV family of discs from the transmissive type developed by the French Thompson company (where the laser passes through the pattern of pits on a transparent disc). By implication, such transmissive discs can only be easily made single-sided.

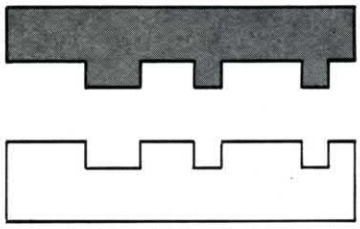
The reflective coating stage did at one time used to be a batch process also, with the discs placed in a cylindrical chamber and spray coated, but this has now given way to the use of a horizontal, continuous coating enclosure. The discs go in one end transparent and come out the other end metallised, with the signal side coated in silver. (This is another change in procedure. The coating material used to be aluminium, but this metal has fallen from favour in recent years and silver is now routinely applied to discs. Unfortunately the quantity needed to coat a disc is not sufficient to give your collection a bullion value beyond the worth of the programme contents!)

At this time, one of the adjacent presses has been producing an equivalent number of other sides to the disc, and the output of the two lines can be brought together and the separate faces of the disc bonded to each other. For this a toffee coloured hot adhesive is applied and the two halves sandwiched together, information sides facing inwards. A conventionally playable disc results, needing only the addition of side labels (which, because the laser reads from underneath, need to go on the 'wrong way round' ie. Side 1 label is actually on side 2 of the disc).

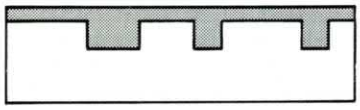
Some additional finishing goes on, with the disc having its outside rim shaved smooth and given a slightly bevelled profile. This is mostly a cosmetic step now. When the 2P process was in operation there was an element of balancing involved in this stage - rather in the manner any fast spinning 'wheel' might need to be balanced. The same principle applies for a disc player where a comparatively heavy disc spinning at up to 1800rpm needs to be kept as true-running as possible. However, with the current disc moulding process, the outer edge of the disc can be finished much more accurately in the pressing stage and this rim shaving continues only for reasons of finished appearance. (The inner spindle hole edge remains as is.)

There is a bank of specially modified players which monitor the signal quality of the disc at end of the line. The surface of each disc is also checked carefully for any visible faults that may affect playability. This area is close to the bagging and sleeving department where plastic and cardboard meet, receive their baptism in shrink wrap, and go on their way to meet the outside world.

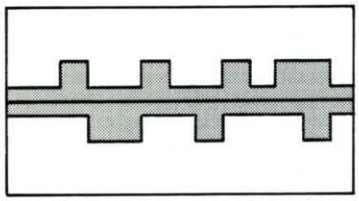
Disc Replication



The nickel stamper is mounted into the moulding press and copies made from it in a PMMA compound.



A reflective coating of silver is then sprayed on in a metallising chamber.



The two halves of the finished disc are brought together and bonded with a liquid adhesive. A playable disc results. Finishing and labelling follows this stage.

Know Your Pressings

It is possible to tell which of the discs in your collection are made by the various processes described in the accompanying article. And you can even tell whether they were made in another pressing plant altogether with the aid of a few simple visual clues.

There are only four possible sources of PAL discs likely to show up on your shelves. Excluding the handful of Japanese pressed discs on the Pioneer label, which are understandably no problem to identify, discs are made by either Philips (now PDO) in Blackburn and Eindhoven, or by Sonopress in Germany.

Most UK discs are of Blackburn manufacture and come in three main types; early pressings on the 2P process that are very silver in colour; later period 2P pressings that are noticeably golder in colour; and the present injection moulded types. 2P pressings always had a bar code sticker under the label of the disc, and though you obviously can't see the sticker, you can see the small raised ridge it causes under the disc label. Look for a little rectangular bump about 2-3cms across.

The change in disc colour of the 2P discs comes from the reflective coating underneath. In practice the later 'gold' hued pressings invariably have a stronger image than the earliest 'silver' discs, though not necessarily for that reason. (Now that, with the CD Video Clip, we have 'true gold' discs we are going to have to find some different way of describing these earlier pressed discs!)

Anything without this bar code label is almost certain to be a later injection moulded pressing (made since 1984). To be certain, there is another clue to help you decide. Blackburn's 2P discs all had a mirror finish surface. If you look at one of the current pressings you'll see, however, that as you look across the surface of the plastic it is not perfectly smooth - there is sort of pond ripple effect on the surface. (To our knowledge this is a characteristic unique to Blackburn injection moulded discs. Every disc produced by a similar process from other manufacturers has a totally smooth surface finish.)

It is this ripple effect that gives away injection moulded discs made by Blackburn and those made by Sonopress. Usually it is no problem to detect Sonopress discs; they have smaller centre labels (much sexier!), do not usually have the outer rim ground off (Ouch! look out for sharp edges), come in thicker cardboard sleeves (when they do come in their own sleeves, not always the case) and, for the Watsons among you, often have "Made In Germany" printed on the sleeve, disc and inner bag. But there are quite a few German pressed discs that have been specifically designed to trick unsuspecting investigators. Sometimes Sonopress discs end up with UK labels on them, or in UK sleeves - so beware! Until such time as either factory changes its methods the surest way to tell current Sonopress and PDO, Blackburn discs apart is this ripple effect on the plastic surface.

Note that we've yet to get round to Philips, Eindhoven pressings. As far as is known not many production discs are made in Eindhoven. The only one in LDR's possession that lays claim to being made there appears to be a 2P type and would be difficult to identify as an Eindhoven (as opposed to Blackburn) disc without its source of manufacture being stated on the label.

New CAA LV Discs

Blackburn has a new mastering machine and some rather interesting-looking new LV discs are coming out of the plant as a result. The first of the newly-mastered discs to appear (in PAL) was ***Friday 13TH***. If you look at the surface of this disc you'll see that it appears to have a normal CLV pattern to the signal, broken up by a whole series of spoke-like lines running out from the centre of the disc to the edge. You have to hold the disc at just the right angle against the light to show the feature up, but when you do you'll see what appears to be a CLV and CAV disc rolled into one.

Rotating the disc shows the 'spoke' lines to change their angle. Sometimes they'll take the shortest route to the disc edge, but turn the disc another 1/4 turn or so and they seem to be coming out of the centre at a wildly different angle. It's as if the CAV pattern is trying to stay in synch with the irregular, staggered position of the CLV recorded frames.

But these new discs are not CAV discs (even though the spoke lines add up to 625). They are CAA discs, of which we have talked about on previous occasions. The CAA stands for Constant Angular Acceleration. (CAV is Constant Angular Velocity, CLV Constant Linear Velocity.)

In a CAV disc you do not get any crosstalk of the type that disrupts many a CLV disc - the effect of which manifests itself as a faint, wriggly black line of interference that runs vertically across the screen. It is a problem that is most prevalent on long-running discs, where the 'grooves' are more closely spaced. Many readers experienced trouble with ***The Empire Strikes Back*** for this reason. Recording discs using the CAA method should diminish the problem of crosstalk considerably.

On a CAV disc the first track (revolution) contains 625 lines, as does the second, and so on out to the edge of the disc. These are divided into two main sections, the two fields that go to make up a single TV picture frame. Between these two field sections are the smaller blanking periods, where the synch pulses for the signal reside. These synch pulses occur in the unseen black area of the video signal, the part of the TV picture you don't get to see on the screen.

Because CLV discs use up all the available space on a disc, by recording each frame directly after the other in the next available space, these synch pulses soon get out of alignment. As a result, if the track pitch of the disc is tight (ie. the 'grooves' of the disc are very close together), they start showing up in the **picture** area of an adjacent frame.

The solution to the problem is to resort to a sort of 'stepped' CLV signal, rather than a gradual one. The number of lines is kept (in CAV fashion) to 625 per revolution at the beginning of the disc, until such time as it is possible to fit on 626 lines per revolution, then 627 and so on. This way the synch pulses are kept approximately aligned and the risk of crosstalk substantially reduced as a result. The black of the blanking phase is always going to end up nearly in the same place, as with a CAV disc.

The new Blackburn CAA discs look quite unlike those that have emanated from US and Japanese plants (where CAA has been the order of the day since 1981/2), but in their respective ways they are both variations on the same theme. The reason NTSC discs have been in CAA for such a long time is due to the greater packing density of their CLV discs which contain 108,000 picture frames per 60 minutes of playing time, compared to the 90,000 of a 60 minute PAL side.

Logically, that means the advent of CAA on Blackburn's PAL discs should mean not only an elimination of crosstalk on long long-play discs, but also the possibility of discs running past the current 60 minute theoretical maximum. Although there are some 'frustratingly-just-over-two-hour' titles presently scheduled, it probably won't be till next year, and the advent of the new hardware, that attempts to extend playing time will be put into effect. But at least, and at last, the technology to do it is in place.

[Further information on the differences between CLV and CAV coding of discs appears in LDR-8, p.30.]

TOUR

One of the terms wafted about in the world of interactive video is "surrogate travel". The concept seems a bit uninspiring to be quite honest. Quite why anyone entombed in a two-up/two-down in Manchester would tolerate a disc-full of scenes of sun-kissed tropical beaches as some sort of substitute for the real thing is a vision pretty difficult to comprehend. But then surrogate travel can take on different forms from those that spring most immediately to mind.

Even the fortunate few winners of the Philips/SDC competition who toured round the PDO, Blackburn LV pressing plant didn't get to see quite everything they might like to have. There's a limit to how many people you can have traipsing through a super-clean-room environment (if you want it to **stay** a super-clean-room environment!) and so putting the disc making process on video (and on a disc) is a fairly good way of seeing something you can't physically get a squint at. Although it may not be surrogate travel on the scale of the famous Aspen road-map disc, the promotional videodisc produced by the 3M company featuring their pressing facility in Menomonie, Wisconsin in the USA, makes for an interesting trip to be taken from the comfort of one's armchair.

Titled *The 3M Scotch Laser Videodisc... An Accessible Resource* the disc is designed primarily as a sales aid. Along with the insight into how they make their discs, it also contains the sort of promotional puff that you would encounter on many an audio-visual presentation at an exhibition or somesuch. There are five chapters:

1) Videodisc Introduction
2) Mastering & Replication
3) Research & Development
4) How To Order
5) Marketing & Technical Service Info

The disc is in NTSC format and, usefully, in CAV (all on one side). The disc is not sold or distributed in any way, but if you should come across it at a show anytime this is what to search out if you can lay your hands on the player's remote control.

Chapter 2

Chapters 2 and 3 are the ones to access. Chapter 2 has fairly complete coverage of the disc making process, especially the earlier stages of writing the master and processing it. You wouldn't get this close on a regular tour. Human beings, however well-scrubbed, spew off an endless stream of particles (between 2 - 200 million a minute!) that are one of the biggest contaminants in disc making. It is for this reason, as much as efficiency, that robotics are becoming increasingly important to the production of discs. It allows the 'dirty' people to be got out the way.

3M uses the 2P process for manufacturing discs and is now probably unique amongst videodisc manufacturers in doing so. 2P discs are more dimensionally stable and the process better suited to low volume production. 3M is mostly known for supplying discs to commercial customers rather than large quantities of consumer discs, though it is making an increasing number of these lately too. Commercial customers often require both small numbers of discs pressed from their masters, and they often want them very quickly. The 2P method suits this requirement ideally.

The 2P pressing process differs from injection moulding in that it actually starts with a blank piece of plastic pre-cut to the approximate dimensions of the finished disc (including having the centre hole already cut out). This acts as a base on which an additional resin coating is poured that then has an impression of the stamper's image embossed upon it.

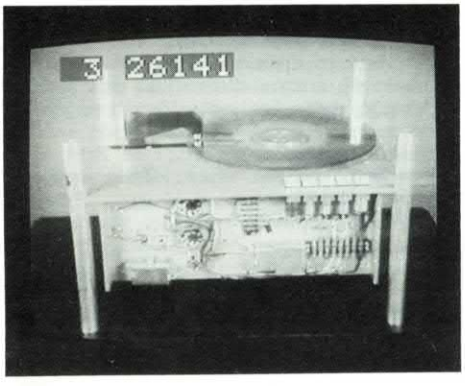
So, on the video, you see these transparent, blue-tinged (the colour resulting from the ultra-violet-sensitive polymer resin) disc blanks going along a conveyor to be fed to the pressing machine.

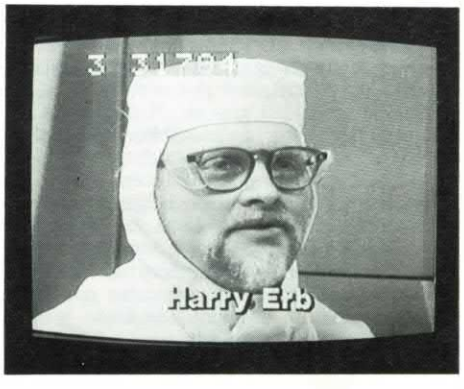
The programme gets a bit vague at this point and you don't get to see the disc being actually formed, but the commentary describes what is happening. After the plastic blank has been embossed, by being brought into contact with the stamper, it is exposed to ultra-violet light for 10 seconds or so which cures and permanently 'fixes' the image.

Following that, the now-recorded discs are transferred in batches of six to a long vacuum metallising chamber where they are sputter-coated on the signal side with the reflective coating.

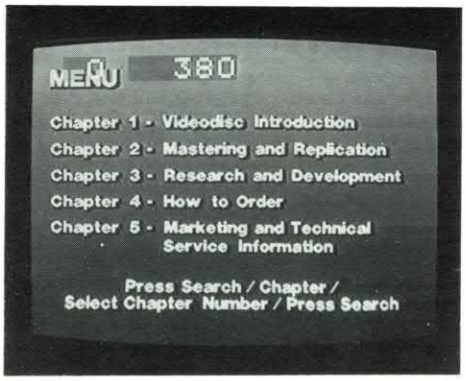
The manner in which the two disc halves are bonded together is interesting. Knowing the way it is done might ease the minds of some readers who can't understand why their 3M discs appear to be 'decomposing' on the inside thus accounting for the gooey nature of the disc edges. It's not what you think it is!

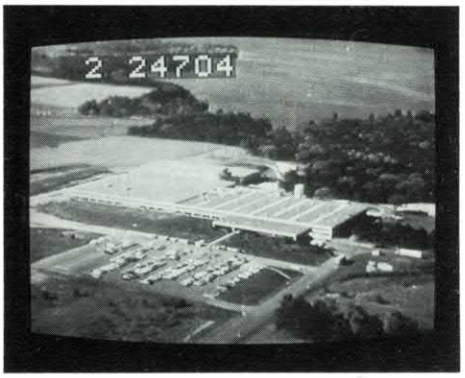
The real reason for this tackiness is that 3M uses an adhesive in the form of a roll of heat-sensitive film or laminate, the two sides of the disc being sort of 'ironed' together, causing the adhesive to melt and bond. Although 3M discs go through an edge finishing stage afterwards, there is always some tiny remnant of this adhesive clinging to the disc edge when you remove your new disc from the inner sleeve. (A recently received Japanese Pioneer-pressed disc exhibited this similar sticky edge characteristic, so maybe 3M is selling them its adhesive laminate too.)





BY DISC





Chapter 3

Chapter 3 has a few interesting tidbits in it. It commences with the intriguing statement "Scotch laser videodisc technology is perfected". But they follow this up by suggesting it is an evolving process, and one which they are are doing their bit to help evolve.

You get to see a picture of the original 3M prototype disc player, the result of a 3M-funded research project in the early 1960s - apparently many years before the technology is generally held to have been established. But then there is no mention as to whether the machine employs a laser reading device or a more conventional optically-focussed one. They do say, however - "3M created the first workable videodisc - but we waited nearly twenty years for technology advanced enough to really make the disc concept work. It wasn't until laser technology and controllable impression coatings came about that 3M research led to today's disc technology".

Aspects of quality control and life-expectancy testing are then given a mention. Discs are seen being loaded into a Tenny Humidity-Temperature Chamber for the latter purpose.

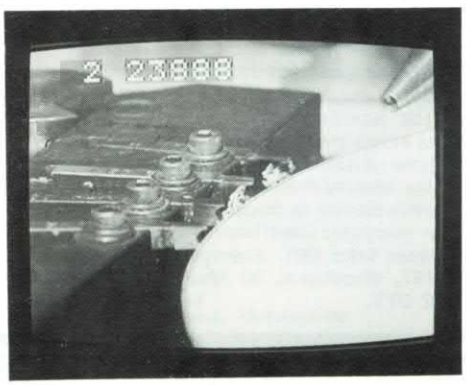
Chapter 5 has some useful schematics illustrating (on still frame) various aspects of tape preparation - film to video transfer and how to avoid flicker on CAV discs. Certain of these parts of the presentation are flawed by the detail of some of the text being insufficiently legible.

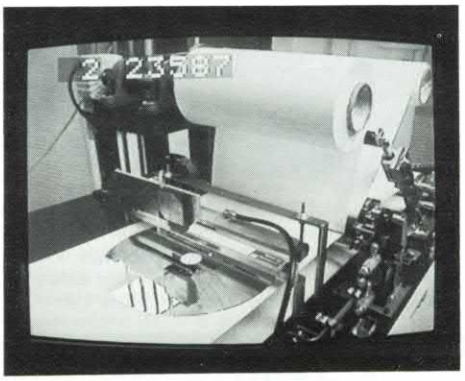
The overall approach of the disc, though, is sound. The picture quality is good (it's all videotape originated) and the CAV facility allows you to scan back to the bits you didn't quite catch the first time round. All the talking heads you see are genuine 3M employees who have been captured in an engaging, candid manner talking about their involvement in the production of discs. They seem just as much at ease as the soundalike Jack Nicholson commentator who provides the professional voice-over commentary to the programme.

It wouldn't do to finish this off without one small complaint - which is that the autostops on the disc played havoc with the Chapter Skip function on the Pioneer-made combi player used to view the disc. However good they may be in isolation, possibly someone should talk to someone else about harmonising their technologies a little more.

Still Frames

380 - The Contents Menu at the start of the disc.
24704 - The 3M plant at Menomonie, home of 3M's rather quaintly-titled "Optical Recording Project".
11039 - In the disc mastering suite Jerry Pichotta underlines the need for customers to pre-check their tapes thoroughly.
13673 - David Keenan explains the unseen parts of the process and points out how human beings give off millions of contaminating particles each minute.
15112 - The extensively cleaned glass disc is seen being readied for spin-drying, before it can be coated with the photo-resist.
23587 - The disc halves are bonded together with an adhesive film.
23888 - The bonded disc has its outer edge smoothed and finished.
31784 - Harry Erb drew the short straw and had to model the 3M clean-room outfit for the benefit of viewers.
33932 - Back in '51, when 3M recorded the first black and white picture on videotape, dress standards were obviously more liberal.
26141 - 3M's original '60s prototype optical disc player.





Atari CD-ROM

To coincide with the appearance of its new CD-Audio/ROM player at the UK's main computer event, the September Personal Computer World Show at London's Olympia, the Atari Corporation issued the following press statement:

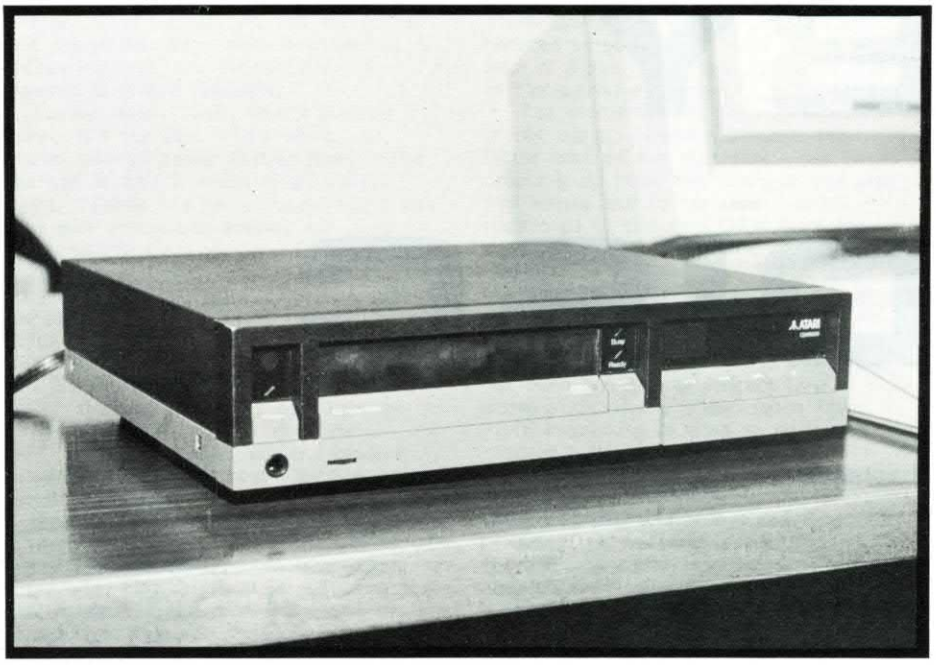
"In 1985 Atari demonstrated a CD-ROM connected to the ST computer and running a sophisticated database retrieval system. It was mentioned at that time that Atari would offer it to the public when it was available at the right price. Advances in manufacturing technology have now made it possible to make this product available in the UK for an end-user price of approximately £399.00".

"A CD-ROM is a Compact Disc that can store up to 600MBytes of data. The unit has random access capability and information from it can be transferred to the ST computer at 1.5Mbits/sec. Recent developments first demonstrated at the Microsoft CD-ROM Conference by RCA has demonstrated the capability of CD-ROMs to store and play back a full 60 minutes of video programmes. The Atari version of CD-ROM also allows the end-user to play audio Compact Discs on it. Atari CD-ROMs will be shipped before the end of 1987".

What this means is that Atari is going to put on the market a CD Audio player (with a detachable remote control, the bank of switches on the right of the facia) that will also read CD-ROM data discs. At the price it will do the latter function at about half the cost of presently available hardware, which because of its price and the severely limited selection of software, is not even sold into the consumer market. CD-ROM technology is presently limited to the business/educational sector, but Atari obviously plans to change that.

The new player, the CDAR-500, is made by a Far-Eastern manufacturer (Chinon) and looks a little different from the usual front-loading CD player. In fact, Atari had two machines at the show, and the working prototype that was available for photography looked (cosmetically) a little less compatible with the Atari range of hardware than the other (non-working) machine they were showing. The player that turns up in the shops may therefore not look quite like it does here. There is a headphone socket on the front of the machine and the player/drive connects directly into any Atari ST computer. It doesn't play CD Video Clips discs, though an expansion of its capability in this direction makes much more sense than expanding a conventional CD Audio player for this purpose. (Because the player will already be connected to a monitor screen.) The mention of RCA's Digital Video Interactive (DVI) video-disc format should be read with caution by potential purchasers of the drive if they are expecting to be seeing Laser-Vision quality pictures off such discs in the near future at anywhere near an affordable price.

Atari was using the ubiquitous *Grolier Academic Encyclopaedia* to demo the drive and suggesting that there was interest from US sources to provide



further software more suited to the consumer than the present specialised (and rather dull!) commercial databases.

Further Info: Atari Corp (UK), Atari House, Railway Terrace, SLOUGH, Berkshire SL2 5BZ. Tel: (0753) 33344.

Domesday Goes Floppy

In response to the needs of commercial users particularly, BBC Enterprises has announced the availability of some floppy disc based software to enable users to update and combine their own data with that on the *Domesday* discs. Since introduction, the *Domesday* package (which includes the Philips VP-415 LV player, the two LV discs and the BBC/Acorn AIV Computer) has sold in the region of 1,000 units, the major proportion of which (about three-quarters) having been sold into the educational market. There were plans to re-edit the two discs to make a single disc more suited to business user needs, but the prohibitive additional rights payments required from the various contributors to the original package made such a project financially impractical.

So, BBC Enterprises has now made available their *DataMerge* software which comes in the form of three floppy discs, plus a comprehensive user guide. *DataMerge* has three components - *DataEditor*, used for inputting new data, updating data values, or their transfer from another computer; *DataFormat*, for converting down-loaded data from the video-discs, data from another machine, or the input of fresh data; and *DataDisplay*, an enhanced version of the *Domesday* software with the ability to access data from the floppy disc as well the video-discs. All data input to the *DataMerge* package can be via the AIV Computer keyboard, the RS423 link, or directly from IBM format MS-DOS files.

Users of the *DataMerge* package will now be able to combine their own sales and other statistical data with all the general data on the videodiscs for the purpose of planning marketing and promotional schemes. All areas of the *Domesday* discs are supported by the new floppy disc package which has also been garnering some interest from the tertiary educational sector. The cost of the package is £399-00 plus VAT.

At £57-00 (+ VAT) BBC Enterprises has also introduced *Domesday Display*, a two-floppy disc set for the purpose of editing the *Domesday* discs to provide programmed audio-visual presentations in the manner of a slide show, but utilising any of the data also on the discs. New captions can be created to customise programmes which, depending on their length, can run from a few hundred frames upwards. Classroom applications are obviously envisaged for *Domesday Display* (although sales presentations could also be done with it). A series of seven *Resource Booklets*, produced in consultation with educational establishments throughout the British Isles, also comes as part of the package. These booklets are based on classroom-trialled projects using the *Domesday* discs and are intended to aid teachers expand the application of the videodiscs.

BRITISH BROADCASTING CORPORATION
aiv
ADVANCED INTERACTIVE VIDEO

Several new AIV videodiscs are anticipated before next Summer to further enhance the appeal of the AIV system which looks to be tied to the existing BBC/Acorn computer for the forseeable future. An Acorn representative present at the late September launch of the *DataMerge* package maintained that, inspite of the vastly improved performance of its new Archimedes RISC machine, there were no current plans to bring the new computer into use with videodisc.

Further Info: BBC Enterprises, Room A3157, Woodlands, 80 Wood Lane, London W12 0TT. Tel: 01-576 0521.

More Funk Stuff

Following our gross-out on CD Video at the Berlin Funkausstellung last issue, here, as promised, is a round-up of the other bits and pieces encountered while travelling between the various disc displays. Manufacturers showing worthwhile products, but unthinking enough to do so within close proximity of any manifestation of the optical videodisc could therefore find themselves missing a mention. They would be well advised to take such geographical considerations into account when booking space for the 1989 show (which will be held August 25 - September 3). As for 1987, the 410,184 visitors who attended the event could well have encountered.....

HDTV

This falls into two categories; what works and what doesn't. Highlight of the show was Hitachi's demonstration of 1125 line/60Hz HDTV (to the Japan NHK specification) in **digital.** Regrettably Hitachi took to showing this little gem in their private demo area, and as a result, it remained unseen by the mass of the show's visitors.

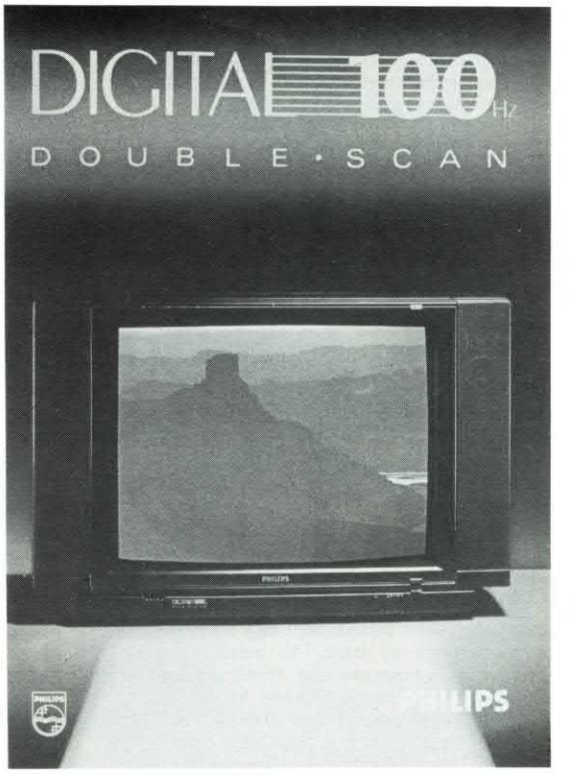
Hitachi's Japanese engineers had set up a 50+" rear-projection TV display that was fed from three separate sources. One was conventional LV disc. The second was the same disc again - but routed through a large memory device (the usual filing cabinet-size job) - thus enabling twice as many scan lines to displayed. Finally, the HDTV source - a 25mm reel-to-reel VTR. The specs quoted for the HDTV system gave the usual 21MHz luminance/9MHz chrominance bandwidth with a signal-to-noise figure of 56dB. The quantisation was given as 8-bit. The audio was 16-bit, 48kHz sampling.

Viewers could experience the three formats on the same screen at a distance of about two metres. The LV disc was typically good. The doubled-up line version was noticeably 'smoother' by virtue of the 'lost' scanning lines, although there was the occasional momentary faltering of the picture refresh. (Hitachi is currently reducing the size of this memory circuitry to exploit the technology for large screen displays, though not for domestic application because of the inevitable high initial cost). When the HDTV signal was fed in, one was transported to a whole different world of picture quality that owed more to traditional photographic values than the characteristics of conventional video.

The way the Japanese seem to be approaching HDTV is for NHK to set a specification and then leave the various electronics companies to get on with developing their own approach to it. Come the day of judgement, the best technology will presumably be chosen. (We have a thick wadge of information kindly sent to us by NHK in Japan that will form the basis of a future article about their back-to-basics approach to devising a new TV standard. Maybe not next issue, but soon.)

HDTV is not solely the preserve of the Japanese. Under the patronage of the EUREKA programme the Europeans are countering with the MAC HDTV system. Superficially this is a better approach, enabling a series of upgrades that retain compatibility with existing TV technology. At Berlin there was a carefully organised showing of the development of the format so far. It was restricted to specially invited journalists and representatives of the various manufacturing companies. One fellow journalist cast some doubt on the whole manner at which attendance at the demo was being so carefully vetted and suggested an element of hype was involved.

But you couldn't help admit that the eventual showing of MAC HDTV turned out to be a moving experience. You couldn't. As soon as the lights in the (apparently) bare auditorium went down, and the audience plunged into pitch darkness, there was an almighty whirring and rumbling from beneath and the entire section of seats (plus bums affixed thereon) was rotated en masse to face the screens and hardware we'd been brought to see.



Some interesting technology (specially **filmed** footage) was brought into use to compensate for the fact that the real hardware was not yet in existence. The organisers did admit to this when questioned, but one was left with the distinct impression that there was a lot of catching up to do if the system is going to stand any chance at the next CCIR meeting - where a decision on future TV standards could well be made. Regardless of which way the decision on the broadcast standard goes, the bet is that the **video** standard for the world of tomorrow will be the Japanese HDTV format. Prove us wrong.

CD-ROM

If you normally switch off at the mere mention of CD-ROM and "anything to do with computers", just stay awhile this time. This isn't really CD-ROM. Because Denon couldn't presumably think of any other way of describing their non-standard CD Audio format, they resorted to calling their 'Quadra' four channel audio system a variation on CD-ROM (so as not to confuse people into thinking the technology was compatible with current CD Audio hardware?).

Instead of a basic 4-speaker corner arrangement, the Denon people have been making four channel recordings - but with the intention of ending up with all four speakers at the front. So you get a pair of speakers in conventional left/right locations, plus an additional left/right pair situated at the extreme left and right of the room, and slightly forward of the main pair. The specially recorded CDs contained four totally discrete sound channels (which judging from a glimpse at the various electronic boxes present was done by resorting to 4 and 8-bit coding, as opposed to the conventional 16-bit CD standard. (And

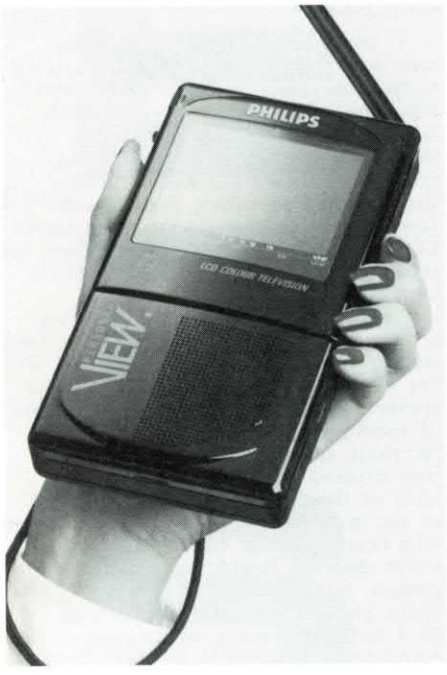
this may have accounted for some rather distorted sound heard from one of the speakers at a certain point.)

The demo consisted of two significant pieces of music. A large-orchestra classical piece that sounded average when played in conventional two channel mode, but grew into a convincing 'live' experience when the side speakers were switched in (adding the hall acoustic and instrument reverberation); and a small-group jazz recording that, quite frankly, sounded better from just the two main speakers. When the outer pair were switched in it just moved some of the instruments sideways, without adding any additional clarity or realism to the experience. But deficiencies in the original microphone placement could be a the fault here.

TV

On the TV front two trends were in evidence. Small colour TVs based on LCD technology (that, from the way Philips describe them, are but a step on the way to big screens based on LCD technology), and conventional tube TVs using memory devices to eliminate the 50Hz picture flicker. The Philips Double Scan brochure promises flicker-free 100Hz picture displays but is woefully free of detailed information (and even company names and addresses). This would tend to substantiate a report from elsewhere that such enhancements to domestic viewing are still awaiting the production of the requisite chips and it may be a year or more before the finished product actually hits the stores.

The LCD development, from Philips especially, is of most immediate interest in the context of CD Video and one could well envisage what this TV would look like with the addition of a small 'Walkman' style disc drive attached to it. Philips also claims to have built a 21" laboratory prototype LCD TV (not shown at Berlin) that, one presumes, is aimed at eventual home use.



Recordable Discs - Who Needs Them?

They're all at it. Trying to make optical discs that record (which are available now) and discs which will go through a series of record/erase cycles (which are imminent). Philips, Hitachi and 3M are just some of the names involved. Even Pioneer has been getting into recordables of late.

But you should disregard press comments that the domestic erasable videodisc is just round the corner. By the time they make the recording capacity sufficient to hold any practical length of programme, we'll be looking to new TV standards making even greater demands on the media.

Where erasable discs will strike first will be (and is) in data storage and similar applications. There might be room for an erasable audio CD in time, and this was probably somewhere at the back of Philips' mind when it announced the results of some recent research at its Eindhoven labs.

The essence of the Philips news is the claim to have identified some new materials - Gallium Antimonide (GaSb) and Indium Antimonide (InSb) that have been doped with other (unspecified) chemical elements for use in re-recordable 'phase-change' discs.

Presently most of the action in erasable discs is going on with the magneto optical variety - where the laser heats the sensitive layer in the disc in the presence of a magnetic field, causing the polarity of the pit being magnetised to be reversed. This can then be read by a lower-power laser and the signal subsequently erased by reversing the record sequence.

In a phase-change disc the sensitive layer is altered from a crystalline to an amorphous (non-crystalline) state, and then back again in the record/erase cycle. The crystalline state of the material is the more stable and is chosen as the start of the cycle. The recording laser heats the material to slightly above melting point, causing it to solidify. A change in reflective value results. The process is suited to both on/off digital recording (data or digital audio), as well as the more demanding analogue recording (LV) where pit length and spacing is of importance.

Philips' new materials discovery suggests the components are capable of up to 1,000 record/erase cycles - which, to make the development suited for data use, will need to be increased. The new materials are also claimed to have a long shelf life and good temperature/humidity stability. One of the bonuses of phase-change recordables is that only minor hardware modifications over existing products are involved. A drawback of magneto-optical discs is that additional magnetising coils and transports are required - thus adding to both the complexity and cost of the player.

Small Ads

SMALL ADS are printed free of charge, so please keep your entry concise and to the point. List details clearly on a separate piece of paper from any other correspondence. Deadline for the next issue is January 7th, or sooner.

☐☐☐ FOR SALE - Over 350 LV discs, many deletions. SAE for a full list.
C. Holdstock, 10 Maes-Yr-Afon, Dee Hills Park, Holywell, Clwyd CH8 7HP

☐☐☐ FOR SALE - Philips VP600 + 2 films. £150 - P.Mason, 43 Beverley Road, St Nicholas, Stevenage, Herts SG1 4PP.

☐☐☐ WANTED - Contact with American multi-standard LV owner (preferably East Coast) for mutual PAL/NTSC disc swaps . Bert Collier, 12 Coronation Drive, Leigh, Lancs UK, WN7 2UU.

☐☐☐ WANTED - Dutch & German LV discs - A. Tomasone, 55 Wesley Street, Cleckheaton, W. Yorks BD19 3PB.

☐☐☐ FOR SALE - Pioneer LD700, black, ex. condition, 18 months old - £150.
B. Warner, Tel: (061) 707 6009.

☐☐☐ FOR SALE - Chariots Of Fire £10, Xanadu £12, Thing £12, King & I £15, Philadelphia Experiment £15, Cabaret £20, Sea Wolves £20, Kelly's Heroes £25, Alien £30, 2001 £30, Jaws (offers). Tel: 01-656 1684.

☐☐☐ FOR SALE - Mint LDRs 1-5. Spetters, Seduction, SOB, Raiders of Lost Ark, Guys & Dolls, Mike Harding, Python 1, Python 2, Cat On A Hot Tin Roof, Wedding, Carpenter's Sport, Painting, Furniture, Mariner, Dvorak New World, Perlman. Best offer for the lot to - Iain Hughes, 2 Crown Office Row, 2nd Floor, Temple, London EC4Y 7HJ.

☐☐☐ WANTED - Collector willing to pay handsomely for Jaws. - Mr Davis, St Clares. Tel: Oxford 52031.

The Laser Calendar

NEW LV RELEASES NOW AVAILABLE

BIG TROUBLE IN LITTLE CHINA [DS] - CBS/FOX 1502-70 £19.99
HOWARD...A NEW BREED OF HERO (DS) - CIC LVG 1225 £19.99
YOUNG SHERLOCK HOLMES [DS] - CIC LVG 2198 £19.99
PRETTY IN PINK (DS) - CIC LVG 2199 £19.99
FRIDAY 13TH - PART 3 - CIC LVG 2211 £19.99 [With cuts]

FORTHCOMING LV RELEASES

MOSQUITO COAST [DS]* - CBS/FOX 5060-70 £19.99
ALIEN [DS] - CBS/FOX 1090-70 £19.99 (Single-disc re-issue)
FRIDAY 13TH - PART 2* - CIC LVG 2035 £19.99 [Re-issue with cuts!]
FRIDAY 13TH - PART 4 - CIC LVG 2216 £19.99
HEARTBURN - CIC LVG 2214 £19.99
LEGAL EAGLES [DS] - CIC LVG 1253 £19.99
RAIDERS OF THE LOST ARK [DS] - CIC LVG 2070 £19.99 [Re-pressed & re-priced]
THE MISSION [DS] - WARNER PEL 11639 £24.99
HEARTBREAK RIDGE [DS] - WARNER PEL 11701 £24.99
LITTLE SHOP OF HORRORS [DS,Ch] - WARNER PEL 11702 £19.99
LABYRINTH [DS] - EMBASSY ELV7666 £19.99
BRITISH GARDEN BIRDS [CAV/TELETEXT/DUAL AUDIO] - BBC V1005L £13.99 [Re-issue]

PREVIOUSLY ANNOUNCED, NOW CANCELLED

CROCODILE DUNDEE [DS] - CBS/FOX 5105-70 £19.99
PEGGY SUE GOT MARRIED - CBS/FOX 3800-70 £19.99
SHORT CIRCUIT [DS] - CBS/FOX £19.99

Titles marked 'S' are in Stereo
Titles marked 'DS' are Dolby Surround and Stereo.
Titles marked 'CAV' are in Active Play. Otherwise all titles are in CLV.
Titles marked 'Ch' are scheduled to appear with Chapters.

The above specifications are confirmed when put in brackets thus ( ).
The condition of forthcoming titles can only be anticipated and they are marked provisionally by the use of [ ] brackets.

The above Forthcoming LV Releases are not scheduled in any particular order. When they arrive, they arrive. Those marked with a * are possible early arrivals.

DELETIONS

The following titles have gone out of stock and there are no plans to re-press them at present - FAWLTY TOWERS 3, BOB MARLEY, ASIA/IN ASIA, NEW YORK CITY BALLET, QUADROPHENIA, GREEN ICE, CAPRICORN ONE, SATURN 3, JAGUAR LIVES, HELLO DOLLY, TORA TORA TORA, DAMNATION ALLEY, PLAYERS, LITTLE BIG MAN, STATUS QUO/LIVE, CLIFF RICHARD/VIDEO CONNECTION, YOUNG WARRIORS, UNDERFIRE, ENGLEBERT HUMPERDINK, GIGI, POLTERGEIST.