

D-VHS® D-Theater™ Universal's "U-571" D-5 Studio Master Compared To D-VHS D-Theater Release

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GARY REBER

D-VHS® "D-Theater™" vs. D-5 Studio Master Format Comparison

This article is a continuation of *WSR's* exclusive in-depth reporting on the new D-VHS® D-Theater™ platform formally announced by JVC (Victor Company of Japan, Ltd.) on Thursday, January 31, 2002, at the JVC D-ILA® Theater Zone in Beverly Hills, California. As previously reported, the home entertainment divisions of four major Hollywood studios—Artisan Entertainment, DreamWorks Home Entertainment, 20th Century Fox Home Entertainment, and Universal Studios Home Video—have joined with JVC to support the new D-VHS D-Theater software platform for high-definition (HD) copy-protected prerecorded high-profile, high-value content. The support of these major content providers marks the next phase in the acceptance of HD as the new standard for home entertainment and television viewing. (Please see the 28-page coverage on this exciting new platform in *Widescreen Review* Issue 59, April 2002.)

For our continuing coverage, I lined up

Required Reading

When reviewing Editor-In-Chief Gary Reber's latest D-VHS® D-Theater® article, I could not help but ask myself the question made famous by Jack Nicholson's Joker in the first *Batman* movie, "Where does he get all those wonderful toys?" But leaving my drooling envy aside, I want to tell you that this article cuts as clear a picture on the immediate future of prerecorded HDTV programs as you will likely ever have the pleasure to find. Once again, Gary's passion for excellence has made a "must read" for all fans of the in-home motion picture experience.

Among those gathered around Gary's "wonderful toys of *WSR*" were industry leaders and a Universal Studios representative in support of the JVC D-VHS D-Theater platform. The feature event was a test between a professional record/playback mastering system—the D-5—and the D-VHS. "I think that D-VHS is very close to the D-5 master. I just thought it was incredible," said one of the professionals you will meet in the following pages.

Like a bonus on a DVD, Gary's let us in on a candid conversation among these articulate professionals at *WSR's* reference home theatre. Their comments are nothing short of enlightening.

I want to gush on about this article, but the better thing I can do is to urge everyone to read it from top to bottom, then pass it along to friends with the unalterable instructions to pass it on to two more, and those likewise. Why? One of the original premises that propelled broadcasters into the HDTV business was the threat that their audiences

would be lost to a prerecorded tape competitor. That fear lessened over the years as it appeared that the copy protection squabbles, cumbersomeness of distribution, and double inventory in rental stores were insurmountable. No more! That threat is made as alive today with D-VHS as the day it first shook up the networks.

The attractiveness of it will overcome any "cumbersomeness" and the double inventory is already an acceptable fact of life with DVDs leading. Innovators, like Reber, also have new kinds of marketing outlets for such distribution, as you will also read about. The cost of consumer electronics is always falling. It won't be long before these "wonderful toys" will be just as affordable as a quality DVD player is today. If this format wins big, even less.

Another thing I learned from Gary's piece is that this paranoia on our part—the one that believes the studios are unreasonable with maniacal demands made on debilitating copy protection systems is itself an exaggeration. "From the studio's perspective," said the representative from Universal Studios, "we are very happy about this. We've asked for and gotten everything we need in reasonable copy protection. And we are able to give people a good picture. We are able to put our software out in the best possible way to deliver it to your home, which is the best picture ever. I'm happy about it." So am I.

Dale Cripps, Publisher
HDTV Magazine
Widescreen Review's HDTV Technical
Contributing Editor

several industry insiders who met on Monday, March 18, with our review staff and me at the *WSR* Reference Holosonic™ Home Theatre Laboratory in Temecula, California (north of San Diego and southeast of Los Angeles). Representing Universal Studios was Mike

Fitzgerald, Vice President, Technical Operations, who brought with him a digital clone of the D-5 format studio master of *U-571* to compare to the D-VHS D-Theater release version using *WSR's* state-of-the-art 9-inch CRT projection system. Representing

JVC was Takao Asayama, Vice President of New Business Development, JVC America Corp., and Pete Zeidler, Director of Business Development, JVC Professional Products Company. They brought with them the preproduction DLA-G150CL D-ILA® CineLine Projector that Managing Editor Perry Sun and I saw demonstrated at the d-cinema ShoWest exhibition in early March, at Bally's Hotel and Casino in Las Vegas, Nevada. Bob Rosser, President of Ultimate Entertainment, a high-end custom home theatre installation company based in Scottsdale, Arizona, and James Wellnitz, a co-founder with Bob and President of Accurate Imaging Technology (manufacturers of high-performance video projectors and processors), brought the professional D-5 digital VCR used as our



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JVC HM-DH30000U D-VHS® D-Theater™ HD VCR

will appreciate, we have always appraised the 9-inch CRT projector as the "Cadillac" of projector technology, capable of resolving the highest contrast, deepest blacks, and shadow delineation possible today, with full 1920 x 1080 progressive resolution capability. While fixed-pixel display devices based on D-ILA and DLP™ technologies have improved dramatically over recent years, they are still no match for the high-resolution capabilities inherent with 9-inch CRT projectors. In the *WSR* Holosonic Home Theatre, both a Runco DTV-1101 projector coupled to a Runco VHD-4404 Ultra video processor and a Sony VPH-G90 coupled to a Faroudja DVP-5000 were used in the comparison. Primarily, we viewed the comparison projected by the Runco unit. The Runco and Sony projectors are regarded as truly state-of-the-art, each costing in excess of \$40,000. Projector switching between the two, as well as the JVC DLA-G150CL D-ILA projector, was accomplished with an Extron Matrix 128 HV/Crosspoint/Component Converter. The two 9-inch CRT projectors are configured for rear-projection in a direct no-mirror path projected onto a Stewart Filmscreen 84-inch wide AeroView® 100 screen with an aspect ratio of 1.78:1 (16:9). The AeroView 100 screen is fitted with Stewart's ElectriMask System, an electronically adjustable black felt masking system used to frame the picture's aspect ratio (for example, 2.40:1). For D-ILA (and DLP) front projection, the room is equipped with an 84-inch-wide Stewart Grayhawk® ElectriScreen System, which electronically lowers from above in front of the AeroView. Audio was not a consideration in this particular comparison, though the *WSR* Laboratory is equipped with one of the finest multichannel audio reproduction systems in the world.



Panasonic D-5 Digital VCR, JVC HM-DH30000U & Extron Matrix 128 HV/Crosspoint/Component Converter



JVC DLA-G150CL D-ILA® Projector

(For a comprehensive description of the *WSR* Reference Holosonic Home Theatre Laboratory, please see Issues 48 to 54 and refer to the Reference System credits at the front of the magazine.)

The source machines used were the Panasonic professional D-5 digital VCR (\$75,000) and the JVC HM-DH30000U D-VHS D-Theater digital VCR (\$1,995).

JVC's DLA-G150CL D-ILA Projector

The DLA-G150CL (\$17,995) is a new D-ILA (Direct Drive Image Light Amplifier) projector whose technology features a high-density, reflective liquid crystal structure that provides exceptional brightness, resolution, and color fidelity for big-screen projections.

The DLA-G150CL incorporates three high-density 1.4 megapixel (1365 x 1024 pixels) image reproduction devices. The projector is capable of a 600:1 contrast ratio. Color temperature and brightness are optimized with professional standard D65 gray scale reproduction and 1,000 ANSI Lumens at 6,500K.

The DLA-G150CL in the direct comparisons Perry and I witnessed at ShoWest rivaled the JVC professional d-cinema DLA-QX1G D-ILA projector (\$225,000) when the DLA-G150CL's image was projected on a 12-foot-wide section of the 40-foot-wide theatrical screen. The DLA-QX1G's resolution capability is 2048 x 1536 pixels with a contrast ratio of 1,000:1 and 7,000 ANSI Lumens of light output.

In the optimized and darkened *WSR* Laboratory environment, the peak white level of the DLA-G150CL was about five times brighter than the Runco and Sony CRT projectors. Unfortunately, we did not have a ND (neutral density) filter, which would have resulted in better black and shadow delineation in the picture projected onto our Stewart 7-foot-wide GrayHawk screen. Actually, in a darkened room such as ours, we were looking at about 1,000 ANSI Lumens, so for 12 foot-Lamberts of light output a 10- to 12-foot-wide screen



source machine for the A-B comparison. Both Bob and James are industry visionaries and high-end home theatre practitioners who are well-known and respected as industry leaders. *WSR* staff members present at this eye-popping event were Managing Editor Perry Sun, Film Review Editor Suzanne Hodges, Research Editor and Staff Writer Michael Coate, and yours truly.

This event represented the first time that a direct comparison of the D-5 studio master with the consumer release D-VHS D-Theater version was demonstrated to a media publication. Except for Mike Fitzgerald, no one at the event had previously experienced the comparison. For Bob and James, it was their first exposure to a D-VHS D-Theater prerecorded HD movie. Our readers should be thankful that Mike Fitzgerald and Jerry Pierce, Senior Vice President of Universal Pictures Technology, were able to obtain permission from the studio for this comparison. The clone of the studio master cost the studio \$900 to duplicate. Thank you Universal Studios for your support in this comparison.

The Reference System

As a preface to this article, I would like to briefly describe the *WSR* reference system and the JVC D-ILA used in the comparison. As long-time readers of *Widescreen Review*

would have been optimal. We are planning to install a 10-foot-wide Stewart Filmscreen just to accommodate high-light output D-ILA and DLP projectors. Had we used an ND filter, the picture probably would have been better delineated in the blacks. Based on our initial experience, I am recommending to JVC that they include a ND filter with the DLA-G150CL as part of the package.

The pixels were not visually apparent unless you put your eye up against the screen. As a result, the D-ILA projector has a more film-like quality with a smoother pixel rendering than the DLP projectors I have seen. (A review of this projector by Video Technical Editor Greg Rogers is scheduled for Issue 61, June.)

The D-ILA DLA-G150CL looked particularly good on bright scenes and in the *U-571* scenes with fireball explosions, though still the CRT projectors took the prize in absolute picture resolution, contrast (black level rendering and shadow delineation), and color fidelity. I think D-ILA will become a real performance contender to the CRT when JVC introduces to the home theatre market a 1920 x 1080 projector derived from the 2048 x 1536 chipset used in the



DLA-QX1G. What the DLA-G150CL is capable of now, in terms of true resolution, is limited to 720p. The other wish list item is for JVC to put a 16:9 aperture plate in the raster. The 1.78:1 aspect ratio is just so prevalent for home theatres. The existing D-ILA chipsets are 4:3 (1.33:1), which is dead for home theatre applications. People with home theatres want optimized widescreen presentations. Their television watching is secondary, if even watched on their home theatre system.

Comments During The Comparison

There was general excitement expressed by the level of blacks, shadow delineation, and resolution evident in both the D-5 and D-VHS D-Theater versions. As well, the consensus was that the whites are white, and color saturation is superb.

Some commentary was expressed about the absolute color temperature that would be optimal for HD projection. James Wellnitz noted that THX® figures their best effort is somewhere around 5,900K because the phosphors in CRT projectors don't meet the SMPTE 242M standard, as professional monitors used in telecine do. Bob Rosser said that every colorist will tell you that 6,500K "is dead, dead, dead wrong." They are not the same phosphor, nor do they have the same spectrum. Rosser said that



(Left to Right) Takao Asayama (JVC), Pete Zeidler (JVC), James Wellnitz (Accurate Imaging), Perry Sun (WSR) & Bob Rosser (Ultimate Entertainment)

one thing is true and that's 6,500K is wrong, but then again no one knows what's right. At WSR, we calibrate our display devices at 6,500K. When I commented on the incredible color saturation of the fireball explosions in *U-571*, Mike Fitzgerald said that at 5,900K the orange should be darker. But everyone agreed that even at 6,500K, the color saturation was exceptionally vivid and natural.

Wellnitz noted that with the JVC D-VHS HM-DH30000U you essentially have a self-contained theatre system in one box without an ATSC HD tuner. Fitzgerald said he was waiting for the D-VHS model with an ATSC HD tuner built in, and then he would buy several of those machines.

Wellnitz said that what is happening, "is this is a toe being placed by the studios into the pond of HD. If this goes over with any success, I see a whole new DVD standard rolling out in five years, that is compatible with everything now, and then we'll have HD DVDs with a new encryption standard embracing Motion Picture Association of America (MPAA) guidelines. And everyone has to rebuy all of his or her movies, which is a good thing for the studios."

Quality is always a good attribute, and the studios supporting this format deserve commendation. Columbia TriStar brought us more quality with Superbit DVDs. Who can criticize a studio for trying to have quality, and this is a trump-up on Superbit.

Fitzgerald said that every new format that comes out has got to be backward compatible. "There's no way an HD DVD player will not play back a regular DVD."

In Issue 59, I reported on the recent development related to the "Blu-ray Disc" format. Following that announcement the DVD Forum announced agreement to use a low bit rate codec such as MPEG-4 on a red laser-based dual-layer DVD-9 to achieve "acceptable quality" high-definition resolution. The term "acceptable quality" used in the DVD Forum announcement does suggest that the quality is not what it could have been. But at the time of the DVD Forum announcement, the details were vague.

Fitzgerald said that he had seen MPEG-4 for HD and that it looked wonderful at 7 to 9 Mbps, but acknowledged that it as a "cheat." He said that the picture did not equal the resolution of the D-VHS format.

I said to the group what I really thought. HD DVD is not mature yet. For HD DVD to succeed it will require a high data rate. It can't use MPEG-4 to cheat the bit rate. It has to exceed or at minimum equal D-VHS HD quality. MPEG-4 is barely suitable to fit a two-hour movie on both layers of a DVD-9. I think that if HD DVD is to be successful, it has to be a quantum leap over DVD. It's got to have at least the same capacity to fit a movie and the supplemental features that people have come to expect. I think what is really going on is that the DVD Forum is generating publicity as a knee-jerk reaction to the JVC D-VHS D-Theater announcement. The DVD Forum is politely giving consideration to low bit rate encoding and will study it, but in the end, will recognize and support the need for a "true" high-definition DVD format, which is at least three to five years away from becoming a standardized prod-



(Left to Right) Mike Fitzgerald (Universal), Suzanne Hodges (WSR), Gary Reber (WSR), James Wellnitz (Accurate Imaging) & Pete Zeidler (JVC)

Perry Sun commented on what he noticed about watching the CBS NCAA Championship games on HD broadcasts. "Broadcasters were complaining that the companies aren't putting out enough sets, and the companies were complaining that broadcasters weren't offering enough HD programming. But the companies who are putting out sets are the ones sponsoring the broadcasts. For at least one of the games, about half of the commercials were from Samsung, Mitsubishi, and Sears."

To laughter, Wellnitz said: "They get their little logo at the bottom though."

As we were nearing our lunch break in the WSR Bistro, a few comments were made relative to the picture comparison.

Rosser said that there was virtually no difference between the D-5 studio master and the D-VHS version. While acknowledging a little tiny bit of resolution difference between the two HD digital video formats, he noted the difference between upconverted DVD and D-VHS D-Theater was night and day. "D-VHS is D-5, slightly softer."

Wellnitz added: "It's a more fulfilling cinematic experience. It was worth spending money on this room to see the differences."

Fitzgerald said that he also noticed that it took a wide bandwidth display device in a state-of-the-art room to see any difference at all between the D-5 studio master and the D-VHS release version. "I'll bet if you took a Sony 57- or 65-inch rear projection set, or any other manufactures' HDTV sets, and hooked them up, you couldn't see the difference between the D-5 and the D-VHS."

Pete Zeidler noted: "That's probably true. Without this set up, we may not have seen the difference."

Rosser said that he has a Sony rear screen at home in the family room that he's going to hook up to see what it does. "And we've got 15 customers who want to know what it looks like."

Rosser further stated that as a matter of fact, as an installer, he probably has about 30 or 40 hours of re-engineered systems he's going to have to upgrade in the next six months with D-VHS.

Digital Visual Interface (DVI)

The conversation turned to DVI. Fitzgerald said that Universal Studios really liked DVI. "We like DVI because we really want a digital out to the display device."

Rosser agreed, but noted that DVI can only run about six feet. This statement surprised everyone.

"That's the dirty secret," said Rosser. "That's why every studio likes DVI, because you can't do anything with it, unless you put your DVD player or D-VHS VCR right next to your display device. At six feet, you'll need

uct, that consumers trust will not be short-lived. While the DVD Forum put the proposal on its agenda for consideration and the member companies voted on it, there were more abstentions than there were votes. Japanese manufacturers are all about consensus, and I suspect that there is not a consensus in the DVD Forum.

Rosser said that HD DVD should be recordable in SD. But Fitzgerald said that he didn't care about recordable. "DVD happened when we were able to get a system for recording a large bit rate, and the computer people helped DVD happen because they needed the bit rate to record and play back with; it was advantageous to them. I think that right now we are going to have to decouple writing bits onto a disc and let the computer people go nuts with that, from having content on a disc. I think we really have to wait."

Rosser followed with: "So, the real scenario is pretty much what Pioneer was eluding to...there might be something in five to seven years."

Fitzgerald revealed that the Blu-ray people have predicted maybe three (which means maybe five) years. "But I can't wait," he said. "Why not put out HD now on the D-VHS D-Theater format?"

Rosser added: "I think it is just absolutely beautiful that we're going back to tape for the best possible quality. After everyone has been running to disc, they'll say, 'You really want to see a picture? I'll show you a picture. And it's on good old retro tape.' The

quality is magnificent. Studios are releasing the software. Everyone is going to be happy in his or her home theatres."

Rosser said that to do an MPEG-4 disc you would have to have an entirely new player. You can't upgrade existing DVD players.

I noted that there is also the issue of licensing in which MPEG-4 could be more costly than MPEG-2, which in-and-of-itself could kill the idea.

Fitzgerald said: "Don't get me wrong, I like MPEG-4."

Rosser said that there is a movement at DirecTV® toward MPEG-4 in order to broadcast 1,000 channels. "You'll see that next year."

I think the real issue for the consumer is time. They want to know if HD DVD is just another year from now, and if it is, they're not going to invest in the D-VHS D-Theater platform. They'll wait.

To that statement Fitzgerald stated unequivocally, "No, it isn't. It's five years."

Rosser stated that five years was the minimum. "Even if it happened as rapidly as possible, what's the motivation? Every studio wants to fill up their coffers with content...you make money by reselling people the same thing. You sold them LPs, you sell them CDs, you sell them VHS, you sell them LaserDiscs, you sell them DVDs. Now you're going to sell them HD DVDs. You don't make money by coming out with new formats too quickly even as interesting and as dynamic as HD."

Fitzgerald followed with: "You can't sell HD unless you have HD sets."





Ultimate Entertainment's Bob Rosser Inserting Universal's U-571 D-5 Studio Master Into D-5 VCR

to convert it to an optical standard."

Wellnitz said: "That's what DVI is designed to do."

Fitzgerald reiterated: "The reason why we want DVI is because we want it digital. It isn't anything sneaky or anything like that."

I asked Fitzgerald if, with DVI, the studios are not going to eliminate the full-bandwidth, full-resolution 720p and 1080i compo-

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nent and S-video analog outputs?

"Why would we want to do that?" responded Fitzgerald.

I responded: "Because a lot of people fear that's going to happen."

Fitzgerald stressed that we should not look at it as a fear thing. "That D-VHS machine in your rack (pointing to the Billy Bags equipment rack) has an HD encoder for the analog outs. If that machine didn't have to have that, it would be cheaper. You have to have a digital..."

"Yes, I said, "but you have all of these projectors. You have all of this equipment out there that have only analog inputs."

"But, Gary," said Fitzgerald, "it's not like it is going away tomorrow. I mean this is years and years down the road. You're looking at a trend. The trend we have to push for is for a digital interconnect because it's better. The analog will always be there to some extent. I'm sure that 10 years from now you'll buy one with DVI out and you'll spend \$50 more for one with analog out."

Rosser said that, "If you have a DLP projector, the DVI makes sense because DLP is truly a digitally-addressed pixel imaging technology. For D-ILA, the signal is converted to analog before ultimately addressing the pixel structure. For a CRT, at some point, you're going to have to go to an analog base. But, nevertheless, you eliminate some stages there."

"Sure," said Fitzgerald. "That's why I

don't like FireWire®. You have to decode it. FireWire doesn't work for me."

Rosser said what he would like to see is DVI out of the D-VHS.

"That's exactly what I want," said Fitzgerald.

Zeidler pointed out that the JVC DLA-G150CL has a DVI input.

Rosser suggested that we'd probably be shocked with the picture difference if we could connect the D-VHS VCR directly to the DVI input on the JVC D-ILA projector.

"It's got to be better," said Fitzgerald. "It isn't like analog is going to go away. Or that we only have one more year of analog. No, it isn't that. It makes that (referring to the D-VHS VCR) more expensive."

WSR's Sun noted that there is talk among broadcasters about reducing the analog resolution for HD broadcasts as a measure of copy protection.

Fitzgerald countered with: "What machine out there records YPbPr HD? None. So that really isn't true. There's no such machine that records that way. Maybe your computer does in Final Cut Pro."

Perry clarified by saying: "I'm talking more about an issue for the installed base of DTVs out there that only have analog inputs."

"Then they'll be able to buy one of these [HD VCRs] with analog outputs," said Fitzgerald. "But I'm saying the D-VHS D-Theater HD VCR gets more affordable and the HD DVD players will be more affordable, and the connection and the picture will be better if we go DVI."

Perry said that he agreed. "It's a matter of maintaining backward compatibility."

"People think it's a sneaky move somehow," said Fitzgerald. "It really isn't."

When I questioned the DVI length issue, Fitzgerald said he did not know that.

Rosser said that he went to the SID [Society For Information Display] convention two years ago, and they had a prototype for DVI. "When I spoke to the engineers, they said it is designed to go no further than two meters. That's it."

Fitzgerald agreed that there is a major problem with that.

Rosser said that if you go to INFOCOMM or to NAB, you'll find people that do DVI converters. "You plug your machine into their box and then they can send it a few hundred feet. They convert the standard digitally. But each box is \$1,500."

Fitzgerald responded with: "That defeats the purpose. We want DVI to be a cheap way to get full bandwidth digital to your device."

Rosser noted that, "Now, on the average home theatre, we're dealing with a customer with a rear-screen, or a tube set, DVI could

make sense because everything is right there together. And two meters is fine. You can live with that, but once you start going up in dollars like this (referring to the WSR Reference Holosonic Home Theatre) equipment setup—projectors there, processors there, source machines there—we're in a different world. So, really it is the people who are spending the serious money who are creating these technological problems of getting signals from places to places that DVI doesn't answer. Think of this as the guy who's the temporary head of production for the studio screening room, DVI won't work. But then he doesn't care because DVI is well-protected. It's got a lot of controls in it."

I noted that there are three forms of DVI that causes confusion.

Fitzgerald said: "We'd insist on any digital out to be somewhat protected. But that's silly because it's a small hurdle since you can always get into something that isn't protected. It shouldn't be something that blocks the development or the enjoyment of the device."

Rosser said: "To me, what you're saying is that there is perhaps a pathway that the MPAA or the studios may eventually back, or be interested in seeing, given certain copyright restrictions. It is essentially digital from platform to display device at some point."

"It's got to be," said Fitzgerald. "There's got to be something."

"No one has come up with that yet," said Rosser.

"We think it is DVI," said Fitzgerald, "but you're throwing water on it right now."

"It could be DVI," responded Rosser. "Remember, the mass-market isn't the room we're sitting in. It's the consumer that could probably use the two-meter cord."

I stated that there are three forms of DVI—DVI/HDCP, DVI/HMCP, and DVI-CE. "What does the DVI connector on the D-ILA projector take? Is it HDCP or one of the other DVI interfaces? Is it the same connector with just different information being sent, or what is it? What are these three forms of DVI?"

To the group's chagrin, no one knew the answer, not even the representatives from JVC's Professional Products Division.

I noted that the input connection on the JVC DLA-G150CL is labeled "DVI-D." I presume that means digital. But what is the real interface? Does it have HDCP or HMCP, or is it DVI-CE? And do the different interfaces require different kinds of connectors? What does it all mean? No one really knows anything about DVI?

Rosser said that he has yet to run into a DVI expert.

Fitzgerald suggested that I phone Jerry

Pierce. But I said that I've already asked Jerry, and he didn't know. He couldn't get into the details of it.

"So," said Rosser, "that's the big question for NAB."

I followed with a nod, "But engineers are putting this connector here...what does that connector really mean? The electronics industry is doing a good job at keeping the knowledge about this 'secret' under wraps. But this scenario is reckless as it raises the question of who would buy a HDTV device if it could become obsolete in no time due to the uncertainty of the interfaces? And just because it has a DVI-labeled input, it may not mean it supports the 'right' interface"

Zeidler noted that the same connector is also on the d-cinema DLA-OX1G projector.

Fitzgerald followed with: "By the way, someone is coming out with a second DVI connector, a smaller one. The connector, they say, is too big, so they made a smaller DVI connector."

Well, this means to me that DVI connectivity is some years away yet, before it is standardized and becomes a reality. At the moment, having a DVI interface labeled on a product perhaps provides a level of com-



fort to the purchaser that the product won't become obsolete, but in

reality there is no agreement on a standard DVI interface assuring future compatibility.

Wellnitz noted that DVI inputs have been on single lens projectors for two years now.

I agreed, but stated that in reality, no one on the front lines, including the electronics salespeople who sell HDTVs and HD source devices, knows what it means.

The Round Table Discussion

(Following lunch in the WSR Bistro, the Girl Scout cookies begin making their way amongst the round table members...Thin Mint, anyone?)

Gary Reber, Widescreen Review: Let's talk about the main differences we saw in the D-5 studio master format versus the D-VHS release format for the consumer. So, what's the consensus?

Bob Rosser, Ultimate Entertainment: What the consumer is going to have for \$2,000 [for a player] is a remarkably pristine and perfect copy of the movie that they couldn't get in any other format. It is very close to a studio master. Not its equal, but considering that the studios are placing that in the hands of consumers, and that it is 1920 x 1080, it's remarkable.

WSR Reber: It looked just the slightest bit softer.



(Left to Right) James Wellnitz (Accurate Imaging), Bob Rosser (Ultimate Entertainment), Pete Zeidler (JVC), Michael Coate (WSR), Suzanne Hodges (WSR), Mike Fitzgerald (Universal) & Perry Sun (WSR)

James Wellnitz, Accurate Imaging

Technology: I think that it was comforting that we were able to see a difference. You pretty much stop believing in anything that's difficult if a D-5 looks no better than this new format. And the fact is that, yes, we went to extraordinary means to see the difference—the equipment, setup, and everything—to ascertain that there is a difference. That exercise was pretty astronomical. But there is a difference, we did see, but it was very slight. And outside of this level of equipment, I don't think you'll see it.

Rosser: Statistically, what you're looking at is that the D-5 format is a 4:1 compression. That's a data rate of 375 Megabits per second, roughly. We're looking at 28.2 Mbps on the D-VHS video. We're looking at a 15:1 ratio, and MPEG-2 compression employed on D-VHS and a proprietary system on the D-5—remarkably close for bit efficiency.

WSR Reber: What do you think is going to be the impact of this D-VHS D-Theater platform? Where is it going to impact the most in the industry?

Wellnitz: What I think it is going to help the most is that no longer will a consumer walk into his or her local store that sells HDTV displays and not get excited. Right now, literally from coast to coast, the picture in the stores does not look significantly different than the picture on a regular television set. No one gets excited. People walk away saying, "HDTV, I knew it was nothing." And that's because they're using pictures off of demo loops, some Sencore pieces [referring to a particular company's hard disk player that is loaded with HD demo clips], or DSS feeds. Movies shown on HD D-VHS are going to make an immediate impact.

Rosser: So, if you think that through, that if a store is going to demonstrate D-ILA with this D-VHS, it is going to raise the consumer's impression because he can't see that signal quality in any other medium. The

weak point of the D-ILAs and everything else is the scaler. You're buying the HDTV for \$5,000 to \$15,000, but you're not getting a state-of-the-art scaler like a Faroudja. You don't need that with D-VHS. You get a pure output of a very high resolution, so everyone is going to demonstrate on that. They're going to have a "wow" factor which they couldn't get before from a DVD with that type of a projection device. But CRT projectors I think will still be better, but nevertheless it is still going to raise the "wow" factor for low-end devices, just because you don't need a scaler now. You don't need to spend that \$15,000 or more for a good scaler.

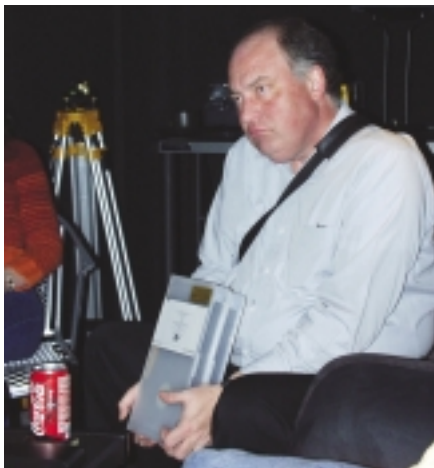
WSR Reber: I bet Faroudja doesn't want to hear you say that.

Rosser: Let's face it, with releases on this D-VHS D-Theater format, the less you need a scaler. If every movie came out on this, which won't happen, then why would you need a scaler?

Wellnitz: But that argument goes both ways because everything is not going to come out on this, so you could also have it the other way if you get used to watching this kind of picture quality. All of a sudden you'll throw stones at cheap scalers because they're not acceptable to what you're used to.

Rosser: People will now start to become MPEG artifact spotters very easily, once they've been exposed to a good picture. It's like when you read how to set up something correctly and you've done it and you go and see something...you've got knowledge. What you're doing is putting perfect picture capability into people's hands, so now they have a reference, so the question is: are they going to be able to match that?

Wellnitz: And that is the most important thing, putting it in their hands. They've got this HDTV at home but they've never been able to really "wow" anybody. They kind of know it looks a little better, but once they get one of these D-VHS D-Theater VCRs



Universal Studios' Mike Fitzgerald Holding U-571 D-5 Studio Master

and put a tape on, their friends and neighbors eyes are going to pop out. And that any consumer can pop that tape in and show a picture that will just knock your socks off.

Rosser: I think you'll agree that this is definitely better than broadcast HD.

Wellnitz and everyone: Absolutely.



Rosser: This is superior to any signal source the consumer can

have in his hands.

Mike Fitzgerald, Universal Studios: And that is why my studio is endorsing it. It's better than anything you can get off the air.

WSR Reber: And that not only applies to the picture but the audio too.

Wellnitz: In order to get that kind of picture before, you had to have a professional D-5 machine.

WSR Reber: How much is a D-5 machine?

Rosser: They're about \$75,000.

Wellnitz: But that's why some high-end consumers buy them because you can't get that picture quality any other way, until now.

WSR Reber: Where do they get the D-5 content?

(Long pause following Gary's audience-halting question.)

Fitzgerald: Not at Blockbuster!

WSR Reber: Let me hold that multi-million-dollar D-5 master.

Wellnitz: I thought it was going to be handcuffed to your wrist.

Fitzgerald: You're over-estimating the paranoia of these things.

Wellnitz: But those particular masters aren't nearly as valuable as others because you got something over here [D-VHS] that is just darn near as good. And as long as we have a D-VHS version, who cares about D-5?

WSR Reber: I remember the demo at

ShoWest. Pete [Zeidler] and Jack Faiman [Vice President, Digital Systems] of JVC interrupted their whole d-cinema presentation to playback D-VHS on a 12-foot wide section of the 40-foot wide screen they were projecting d-cinema material on. Boy, was the picture incredible! Talk about the "wow" factor, after experiencing the d-cinema version of the same material.

Perry Sun, Widescreen Review: JVC did a set up where they connected a D-VHS HM-DH3000U VCR to the DLA-G150CL and showed it on a big screen. Cinema people were coming over and saying, "This is a good picture." (Lots of laughter follows...Perry's quite the comic.)

Pete Zeidler, JVC Professional

Products Company: We're actually calling this projector the "Baby Q" because it really has some of the same attributes as the QXGA projector [referring to the DLA-QX1G D-ILA], but not the same resolution. It has the same look to it, so a lot of those people who came in and saw it, said it did look as good.

Rosser: The DLA-G150CL is also quieter than the previous model.

Zeidler: It is aimed toward home theatre, so quietness was obviously a feature that was high on the list. I'm not sure JVC knew what they had in D-ILA in home theatre, so the original projectors were really thought of more for office environments and not really home theatre. And then when it started catching on, they suddenly had a wish list of things to correct.

WSR Reber: JVC has done a remarkable job with this projector and is moving in the right direction to meet the needs of high-end home theatre.

Mike, why did Universal Studios get behind the D-VHS format? What's the inside story? Because from our point of view, the fear expressed by high-end home theatre enthusiasts is that the studios are resisting high-quality releases, that they're paranoid about it, but with D-VHS D-Theater you have a format that is unbelievable in picture and sound quality.

Fitzgerald: Frankly, it might be so at other studios, but there's no paranoia like that at Universal, or at least none I have ever seen. We had a number of things we wanted to see, like copy protection and quality, and we have been trying to talk to all of the manufacturers about what we would like to see, quality-wise and copy protection-wise. In talks with JVC about the D-VHS D-Theater platform, basically they satisfied the check list of stuff that we wanted; all the boxes were checked. They gave us the quality, they gave us reasonable copy protection, and it was all there. Why not? People are anxious for a high-quality



Universal Studios' U-571 D-5 Studio Master—
Part 1 & Part 2

source medium. It's going to be years until HD DVD comes, so why not tape? There's no down side.

WSR Reber: When interviewing the spokespersons from the four supporting studios, I got the impression that the pricing would be around \$30 to \$40 per movie. I think there is going to be a lot of demand for this, and you've got one title now for sure that you are going to release...

Fitzgerald: The first title.

WSR Reber: In terms of your library, where do you think this is going to go with respect to future releases?

Fitzgerald: I feel very positive about D-VHS. I think that, to me as a consumer, I want one. I want to see these tapes. They look better than regular broadcast HD. Looks better than what I'm seeing coming off of satellite. I want them. I don't know whether that thought, that urgency has extended its way all the way up to the home theatre video hierarchy. I think, as they say, the proof is in the pudding. When these things start flying off of the shelves, you are going to see more and more titles very quickly. I think they are starting out too conservatively, but I don't have to sell the tapes; I'm not in the marketing department.

To answer your question today, I don't know. I do know that we're going to launch with the U-571 title. I don't know what the other ones are going to be. They're deciding that now and sending them to JVC to master.

WSR Reber: Universal Studios has such a vast library of high-profile titles that could easily showcase the quality, picture and sound, of this format, such as *End Of Days* and *Backdraft*, for example.

Fitzgerald: I don't know what the marketing department is going to do. We did give them a wish list of all of our favorite HD masters, and asked them to go ahead and do it. I don't know what criteria they're using when they pick these.

WSR Reber: But is Universal prepared for the demand? If they did have a rush on demand, which I think they will, are you pre-

pared? Do you have the masters in 1080i?

Fitzgerald: Yes, we have been mastering in 1080i for a number of years. We have recently gone to 1080/24p mastering.

WSR Reber: Do you have to do anything extra to them to make them suitable for D-VHS format?

Fitzgerald: No.

WSR Reber: Can you actually just take the master out of the vault and it's ready to use?

Fitzgerald: Take the master out of the vault, lay back the soundtrack to it, and that is it. And synchronize the closed captions. End of story.

Wellnitz: It stirred up sort of a hornet's nest with Mitsubishi, this whole D-Theater thing. I learned more about D-Theater by reading why Mitsubishi didn't like it...

Fitzgerald: Why don't they like it?

Wellnitz: They claim it's JVC's proprietary encryption system that nobody else can use and can only play back on their decks, but of course they turn around and they have a D-VHS [without D-Theater capability] deck that only plays back on their televisions. I really didn't understand them calling the kettle black.



Takao Asayama (JVC) Next To Mike Fitzgerald (Universal) With U-571 D-5 Studio Master

that basically a regular DVD does. It also carries the extra encryption of future devices, which we're very interested in too. JVC insured that all the [wish-list] boxes were checked.

Rosser: So, there's a future to this format?

Fitzgerald: Of course. We are not going to back something that we think is going to be obsolete or short-lived.

Rosser: And there's other studios that are sharing your enthusiasm for this format and are tentatively investigating releasing software titles?

Fitzgerald: Absolutely.

WSR Reber: There are three other studios that have formally announced titles. Actually Fox has got a slate of around 11 initial titles including *X-Men*, *Fight Club*, and *Independence Day*. Artisan has got about four, including two *Terminator* titles. And DreamWorks initially will release *Galaxy Quest*, *The Peacemaker*, and *The Haunting*.

Fitzgerald: We all have titles in the slot, but they change before they go for mastering. We have several over in Japan waiting to be mastered. I don't know if one is going to come out or not. I'd love to tell you our next title but...

Rosser: To clarify, when you say "mastering," are you talking about the duplication of the tape taking place in Japan?

Fitzgerald: Let me tell you how it happens. We send a D-5 to Japan. The Lt/Rt [left-total/right-total matrix mix] is compressed on channels one and two with Dolby E on three and four. Dolby E contains the 5.1 discrete soundtrack mix of the film.

They then take that, and synchronize it with a close-captioned disc file that we have synchronized to our NTSC source, so that the linear speed is the same. They decode the Dolby E audio, re-encode to AC-3® [Dolby Digital] using the meta-data that's in the Dolby E bitstream, and they run everything into a modified Devicom encoder that is set to put out an ATSC bit stream at 28.2 Mbps. They run that onto a DLT [Digital Linear Tape]. They take that DLT and run it through a computer, which puts the encryption on it and puts all the keys on it. It produces another DLT. The DLT is then run real-time to slaves to make the final release product. That's how it goes. So, there's an authoring process in there.

Rosser: And there is some consideration that DTS may or may not be feasible as an alternative?

Fitzgerald: That is totally up to the JVC people. I would like it to happen. The two-channel PCM standby track, the Lt/Rt, could be found to be totally useless. So to convert that to a DTS track or some other track is something I'm looking forward to.

WSR Reber: My understanding is that JVC has committed to DTS soundtrack capability, that they've already had meetings with DTS representatives, and that it is definitively going to happen. With respect to the first generation HM-DH3000U D-VHS VCR, it will require, according to JVC sources, a software upgrade, which could mean that the machine will have to be sent back to JVC for the upgrade.

Fitzgerald: Really?



Fitzgerald:

Has JVC licensed this? Or has anybody got a

license?

Zeidler: I don't know if anyone else does.

WSR Reber: It's an option to any manufacturer licensing D-VHS. I would think that JVC is in the business of making money on licensing...

Wellnitz: JVC has it, so Panasonic has it.

WSR Reber: According to my sources, JVC's intention is not to restrict this to JVC—they're out to license this to the whole world, as they have successfully done with VHS.

Rosser: The essential point here is D-Theater is the only D-VHS format backed by software, which makes it useful in a home theatre, which is what we're all sitting in right now. Without the D-Theater playback capability, D-VHS is useless...sure you can record and playback HD but what's the content? The primary visceral level of why people are spending money is movies. People want the movie experience, and this is the only format that is delivering HD software.

Wellnitz: And there is nothing that can be done with the [prerecorded] tape. If you have two machines, it doesn't record at a lower resolution, it just doesn't record at all.

Fitzgerald: Yes, it does record...

WSR Reber: But it won't record HD quality D-Theater releases.

Fitzgerald: It has Macrovision on the analog outputs, for whatever barrier that counts as. But it has all the copy protection



Matthew McConaughey, Harvey Keitel, And U-571 Crew In Lifeboat

WSR Reber: It will be totally achievable when that happens. And they're rushing that because Fox is one of the studios that adamantly said they wanted to release with a DTS soundtrack. Jerry Pierce at Universal, once he realized that opportunity was there, told me that he wanted to release in DTS too. It is going to happen. The sooner the better.

Rosser: There is one other key advantage to this format. You put it in, and it plays.



You can skip the Interpol warning. And that alone makes it worth-

while.

WSR Reber: Mike, you mentioned that you thought that HD DVD is off by several years. What is your perspective on that?

Fitzgerald: We have been in dialogue with all the manufacturers as to what we would like to see in HD DVD. And we are of the opinion that HD DVD should be a special leap forward in technology. It should not be an enhancement to DVD. It should be a major quantum leap in technology as well. So we have been trying to downplay any manufacturer that is coming across with a quick fix to HD going onto a regular DVD-9 in favor of trying to go for a longer wait to let the technology mature, and come up with something special. Who is going to buy it if it is not special? It has got to be special. It has to be super. It has to be a great picture.

WSR Reber: If the DVD Forum truly adopts a short-term enhancement, won't it be limited to just the film? As I understand the proposal, there won't be enough data capacity to handle any extras that people expect with DVDs today.

Fitzgerald: That's what we see.

Wellnitz: D-VHS is also a good test market to see if HD DVD is worthwhile. If D-VHS D-Theater takes off like a rocket, then there may be more interest in HD DVD. But right now DVDs are doing pretty well. Why change it?

WSR Reber:

If a short-term extension to HD DVD doesn't measure up to D-VHS quality, then that is going to be a big disappointment, isn't it?

Fitzgerald:

We've seen MPEG-4 run HD. Think of it this way. All of the functionality of DVD—branching, multiple angles, etc.—is all a func-

tion of how much data is captured in a given area. I am unsure that MPEG-4 HD will have room for features such as multiple angles. If you have MPEG-4 running at a different rate, with smaller amounts of data, you might take away the function of branching. You might be taking away a lot of functions that people are already used to. You're not going to be able to give it to them in HD. So the whole system has to evolve before anyone should commit to it.

WSR Reber: That's why it's better to wait longterm and have a real quantum leap in the level of performance.

Fitzgerald: Wouldn't you rather wait longer for something better?

WSR Reber: Yes. (The group nods in agreement.)

Wellnitz: Especially since this is not exactly having to wait and suffer. You're getting what you want now.

Rosser: D-VHS is just something to tide us over.

Fitzgerald: People who want movies in high-definition, can get movies in high-definition now. They don't have to wait.

WSR Reber: Does anyone think the stigma attached to tape is going to hold this format back?

Rosser: I think it's neat that we've got retro tapes now beating out digital technology. I think there's a certain humor in that. Everyone is trying to kill off VHS. I think that the latest thing from the Video Software Dealer Association (VSDA) was Blockbuster switching over to DVD rentals. Everyone is trying to kill off tape, and here it comes.

Wellnitz: Tape is better than ever. And it gives you something you can't get, which is HD movies.

Fitzgerald: What does everyone else think?

WSR Sun: A knee-jerk reaction from most journalists that I've spoken to is, "I can't believe they are going back to tape."

Fitzgerald: How about people? Do they think it's retro?

WSR Reber: We don't have enough input to read what consumers' views will be. Some readers' letters we have received, since we broke this story in the April issue, are enthusiastic about the D-Theater platform, while others have said that when all is said and done a tape is a tape whether it be VHS, S-VHS or D-VHS. They see D-VHS as a step backwards. They don't think there should be a hurry to get to 720p or 1080i. DVD 480p is excellent, they say, and they are patient to wait until backward compatible HD DVD arrives. Those that see the exceptional high-performance that D-VHS delivers to the home are ecstatic, and can't wait for the D-Theater movies to be released.

Rosser: I think the word "digital" should be mentioned more in the promotion of this D-VHS VCR. I think it is the real catch word.

Fitzgerald: High-definition. I think high-definition is more of a selling point than digital or VHS or D-VHS or D-Theater.

WSR Reber: The labeling on the JVC D-VHS D-Theater VCR reads "full-spec HDTV-compatible."

Fitzgerald: The HDTV part on the VCR reads "HDTV" in raised orange letters, and that is for a reason. That is what is going to sell it. You're right, "digital" is another buzz word.

Wellnitz: I don't think the name itself is going to sell [HD D-VHS], I think that the consumer has been hit with so much "high-resolution" and "digital HDTV" that hasn't been what the claims are. The only thing that is going to sell HD is what we saw. Initially I thought it was going to be a little better than a DVD, but I just couldn't believe what I saw.

Michael Coate, Widescreen Review:

Many consumers think that with DVD they are getting high-definition images because companies put "mastered in high-definition" as a bullet point on the jacket. And that's misleading.

Fitzgerald: Most DVDs come out in anamorphic now...

WSR Coate: And that's misleading, too. Many believe they are seeing the higher resolution 16:9 enhanced "anamorphic" images simply because the jackets state such, even though they're playing the DVDs on standard 4:3 monitors.

Rosser: And you have every manufacturer quoting, "One thousand lines of resolution" and "digital compatible." Then, I'm waiting for the digital HD rabbit ears, which by the way, someone has an HD-compatible sticker on a pair of rabbit ears. So, we're using that word too much.

Wellnitz: All of the Radio Shack antennas have "HD Capable" stickers on them now.

Fitzgerald: I hope consumers will not

think tape as retro, as I'm sitting here holding a master that's a tape.

Wellnitz: All of those people probably have VHS machines in their homes, and their experience has probably been favorable.

Rosser: And this is compatible with VHS and S-VHS, both in record and playback modes.

Wellnitz: The biggest problem is people who are going to take one of these [D-VHS D-Theater] tapes and stick it into a non-D-VHS D-Theater VCR. What will happen?

Fitzgerald: Nothing. It would look like there's nothing recorded on it.

Wellnitz: It fits into the slot, the carriage drops down, and it would cycle, but nothing comes out.

WSR Reber: Could a person record over a prerecorded D-VHS tape?

Fitzgerald: Yes. If the record tab isn't taken out, they certainly could.

WSR Reber: The record tab is removed on prerecorded tapes?

Fitzgerald: We buy the tapes with the record tab removed.

Wellnitz: I don't think Blockbuster will be renting these anytime soon.

Fitzgerald: I don't know. I hope you're wrong. I hope that they do embrace D-VHS D-Theater. I hope everyone embraces it.

Rosser: If Paramount releases titles on D-Theater, they'll rent them.

WSR Reber: I'm hoping to offer D-Theater titles on two of our Web sites, www.WidescreenReview.com and DVHSMovieGuide.com.

Fitzgerald: I think you should.

WSR Reber: We have the perfect audience to embrace this format.

Fitzgerald: I firmly believe that the demand for these titles will be in excess of what they are predicting. They will need to have distribution so that people will be able to go some place and select from all of the titles.

WSR Reber: That's what we plan to offer.

Fitzgerald: That's a perfect idea.

Wellnitz: Do we know anybody who is planning on distributing these, like Ken Crane's DVD Planet or Dave's Video?

WSR Reber: The studios have not announced any marketing plans whatsoever. The official launch date for this is late spring or early summer. I'm guessing June.

Suzanne Hodges, Widescreen Review: What's going to sell this is the consumer seeing the quality, but where are they going to see the quality? Is it going to be demoed?

Wellnitz: I think the problem with broad-based merchandisers, who have been trying to show off HDTV using DSS feeds and

Sencore boxes, is that the Sencore box demos are things that people never watch. It's like, "What movie is that?" So, it falls flat. With D-VHS, you play a movie, something they can identify with, that is sharper and clearer with better color than they have ever seen before, and then all of sudden they will have a different attitude.

Rosser: I think that the real thing for us, being in the industry, is that we have the CEDIA EXPO (Custom Electronic Design & Installation Association) coming in September, and I can pretty much tell you that every major home theatre or picture demo is going to use this format. It's going to make D-ILA and DLP look better than it should. And it is going to make a CRT look absolutely incredible. The CRT displays will have the best "wow" factor.

WSR Hodges: So, starting at the trade shows, you get word of mouth, and then suddenly people are demonstrating in other stores and so forth.

Zeidler: The D-VHS is actually a consumer product, so it should get pretty good mass distribution. Our projectors are JVC Professional.

Fitzgerald: Really? The D-ILA projectors are not marketed in the same division?

Zeidler: Right, there is not a "consumer" D-ILA product.

Fitzgerald: That's too bad.

Zeidler: D-ILA is sold in the same groups that sell the high-end broadcast D-9 equipment.

Fitzgerald: You should throw a D-Theater deck in with the D-ILA, and throw a tape of this in with it.

Zeidler: I think the combination, the D-VHS and D-ILA, is something that is going to be pushed pretty hard because of the benefits for the dollar amount and the impact you're getting.

Rosser: Best Buy has been wired for distribution so that they can distribute HD video in their stores. Circuit City is rewiring and remodeling and will be distributing HD in their stores. Right now all they have is Sencore boxes. I think that where D-VHS is going to have its biggest impact is at that level. So, many people who just missed HDTV, will have a second chance to look at it.

WSR Reber: As far as CEDIA is con-



Scene From *U-571* Exhibiting Incredible Shadow Delineation And Subtle Resolution

cerned, any manufacturer not using this as a source machine and using DVD only, will be outclassed. They'll feel embarrassed and wonder why they weren't informed of this.

[Do I dare suggest that manufacturers should be reading *Widescreen Review* to stay informed of such technology launches? I will.—Editor]

Zeidler: With the d-cinema DLA-QX1G, the images with the QXGA resolution are phenomenal. In a way, you still are scaling. You're downconverting to 1080i.

Rosser: And that's the projector that's doing the 1080 native, so you're getting dot-for-dot on the screen that you are not even getting with a CRT. You're maxing out your CRT on your horizontal at around 1,600 lines. And the DLA-QX1G will do all 1,920 lines.

Zeidler: As you know, we've got a lot of people who suddenly want a QXGA DLA-QX1G projector in their homes, and animation studios that want to see every pixel they've created, not an approximation of it. So, again, having D-VHS to drive a D-ILA is a good parent.

WSR Reber: With the software launch in June, by CEDIA in September we should safely be able to assume there will probably be somewhere around 50 titles in D-VHS D-Theater format.

Rosser: Is that possible?

Fitzgerald: Possible? Absolutely. Is it going to happen? I wish I could tell you.

WSR Reber: I do know from my interviews with other studio spokespersons, they will all be high-profile titles, like *U-571*, *Terminator 2: Judgment Day*, *Die Hard*, *The Haunting*, etc.

Rosser: For *T2* they'd have to go back and do an HD transfer.

Wellnitz: Is *The Fifth Element* going to be released in D-Theater?

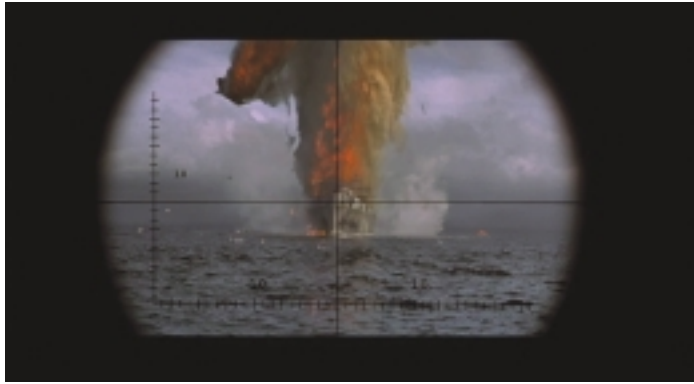
WSR Hodges: Columbia TriStar isn't in yet.

WSR Reber: That's a good point.

WSR Hodges: They are not supporting



embraces it.



Periscope Sight From U-571 Of Torpedo's Direct Hit On German Destroyer

this format at the time, and neither is Warner Bros. Paramount has yet to say anything.

Rosser: What about Disney?

WSR Reber: I think Disney will move to support the format, especially when DreamWorks releases *Shrek*, which would be a smart move. I'm betting that Paramount will come on board. MGM hasn't said anything.

Rosser: What has Columbia TriStar said, just no?

WSR Hodges: They're just not in yet.

WSR Reber: I think it is still very early in the game. After the first titles are released I think we will begin to see action on the part of the other studios. The demand and praise for the format will become too great for them to just sit on the sidelines. The scenario will unfold similar to the fledgling DVD launch.

Rosser: They [Columbia TriStar] have Superbit.

WSR Hodges: Exactly. But Superbit can't compare to the picture quality of D-VHS D-Theater.

Rosser: This is more Superbit.

WSR Sun: This is real Superbit.

Rosser: This is three and half times the bits. This is "Megabit."

WSR Reber: This is like the early days of DVD where you had two or three studios who initially announced, and some held off for a year and a half. I think that market pressure will force them to get involved. It's just too good of a format for a studio not to want to release in. The revenue generated will be all incremental.

Rosser: Look how far we've come. DVD was launched in 1997. I remember going to one store in San Francisco that had the first DVDs. Then people were doing it online because you couldn't find them. So, I think Gary's idea of buying them off of *Widescreen Reviews*'s Web sites is a great idea.

Fitzgerald: Absolutely. We used to have to drive to the store to see what was new.

WSR Reber: For our readership it a perfect opportunity to be informed of every D-

Theater release. We will make available our extensive searchable and interactive database expertise applied to D-Theater titles.

Wellnitz: DVDs really started in the same specialty stores that were selling LaserDiscs.

WSR Reber: And the pricing for this, \$30 to \$40, is better than LaserDisc

pricing.

Wellnitz: I think it is more reasonable.

Fitzgerald: Do you think your readers will miss the commentaries, the branches, and the trailers?

Rosser: They can still get those by buying the DVD.

Fitzgerald: I like that answer.

Rosser: The D-VHS HM-DH3000U is a movie machine. It isn't an aficionado, let's look-at-every- nuance format, compared to DVD.

Fitzgerald: People sometimes throw a tremendous amount of garbage on the DVD, so much so that they have to lower the bit rate on the original programming, for this silly thing called the movie. So we are constantly trying to encourage two discs. You get more bits that way.

Wellnitz: I like it that way, too.

WSR Reber: I see an opportunity here for the studios to release the D-VHS D-Theater movie and in the same packaging, the supplemental DVD.

Wellnitz: With all the extra stuff.

WSR Reber: Customers have their DVD player for the extras, and their D-VHS D-Theater player for the movie. Wouldn't that be something?

Wellnitz: Then JVC can license players that do both!

Fitzgerald: ...and in sync, so you can go back and forth.

Rosser: Just buy the DVD. If they spend \$2,000 on a D-VHS D-Theater machine, they probably have a rear screen for at least \$5,000 to \$7,000, and a home theatre for \$7,000 to \$10,000—that's the market. There are 1.2 million homes in the U.S. now with a value greater than \$1 million. That's a huge market, and those are the people who have rear-screen TVs, receivers, and 5.1 systems. That's the market. The \$2,000 is nothing compared to what they already spent. It's a little bit more than the VHS, but actually the quality you get off of this in terms of even standard VHS is far better than the cheap

one you are going to be buy right now. We have problems as installers with VHS pictures rolling and sinking, and screwing up Faroudjas and all sorts of things, because the VHS VCRs have gotten so commodity-driven, and the tuners are crappy, and the pictures they generate are noisy. All of that is probably cleaned up in the JVC D-VHS D-Theater machine, so this would be a very desirable unit from that aspect.

WSR Reber: This JVC unit does actually play back a better picture with standard VHS than with a regular VHS player.

Rosser: And let's face it, if it lists for \$1,995, you can probably go to Fry's and get it for \$1,500.

Fitzgerald: You can buy it at Best Buy for \$1,390.

WSR Reber: And this is the first generation. JVC has already indicated that there's another deck to follow that will be less money.

Rosser: Oh, really?

WSR Reber: Yes, within this year. Perhaps at CEDIA JVC will introduce it.

Rosser: I remember all of the S-VHS decks were always \$750 to \$800, and now they're down to \$200.

Wellnitz: And then JVC came up with a S-VHS ET VCR that doesn't need special tapes.

WSR Reber:

This JVC D-VHS will record and play in S-VHS ET format as well.

Rosser: To wrap this up, I want to go back to the comment I made earlier which is I think any studio that uses a marketing idea of quality should be commended. There's a lot of other people out there that are doing things, but to say, "Okay, we're going to do this, but we're giving you something that is quality-orientated, and it is going to greatly enhance the viewing experience," is on the right track.

WSR Hodges: I agree. (Everyone nods in appreciation.)

Fitzgerald: This is nice to hear.

Rosser: I think this has more to do with furthering HDTV than anything that has been done so far. This will help to sell HDTVs.

WSR Reber: I completely agree. Let's go back to the picture to conclude. What are the outstanding differences in picture quality that you experienced today?

WSR Hodges: The D-5 definitely had the subtle details in hair or background definition or textures in clothing, but I thought that the D-VHS was very close. Overall, when we're doing comparisons, we can see those differences, but I think the consumer would be thrilled comparing DVD and D-VHS. I think that D-VHS is very close to the D-5 master. I just thought it was incredible.

Wellnitz: I think that the big thing is that



you can immediately see the difference that HD makes. To many people, HDTV means more definition, but to me it means totally different color. There was a whole lot more prevalence to the color and a lot more shades to the color in HD, compared to the DVD. Between the D-5 and the D-VHS, they seemed to have the same palette of rich, full colors. And that's what I really like about HD. There is a small difference in detail that we can see with this [WSR's Reference Holosonic Home Theatre Laboratory] system, but I don't think you'll see it on any direct-view CRT, rear-screen, DLP, D-ILA, or plasma display that consumers use. It will be tough for people to see the difference between the D-5 studio master and the D-VHS D-Theater release version.

Rosser: I think the D-5 and D-VHS are so close that I don't think it would ever motivate anyone to buy a D-5, even if they could afford one, unless they were on the top of the Forbes' 100 list. With DVD, no matter what scaler you use with it, you're not going to have the same picture quality. By virtue of the DVD having a lower bit rate, you have artifacts like reference frames, mosquito noise, all these things that are now gone.



You have detail in the background, and you have a greater sense of

three-dimensional depth. So with DVD versus D-Theater, there is no comparison. But in comparing the D-VHS to the D-5, they are so close. D-VHS D-Theater is a gift. We really shouldn't even be complaining about the differences as they just are not significant.

Wellnitz: But Bob, you do have customers that have D-5. There are customers who want to see the differences.

Rosser: That's a small niche market, and those people...

Fitzgerald: Did anyone see 720p play on [the JVC D-VHS D-Theater player]?

WSR Reber: No.

Fitzgerald: Does it?

WSR Reber: Yes, it does 720p.

Fitzgerald: I think all of the D-Theater tapes are going to be 1080i. I'm just curious as I've seen some 720p tests.

Rosser: From a HDTV tuner unit you are able to record onto D-VHS VCRs and play back.

Fitzgerald: Yes, when you put an ATSC tuner in the VCR.

Rosser: When the second box comes out, it should be connected with the FireWire, so you can use it to record HDTV and play back.

Wellnitz: But that picture still won't meet the 28.2 Mbps quality of this format.

Rosser: No, at best it will be the 19.3 Mbps data rate, and there's subtractions

from that.

Fitzgerald: Right.

Rosser: Then, too, there is the issue of whether the over-the-air HDTV content provider is really giving you the full bandwidth? So, nothing will compare to this for me.

WSR Reber:

Bob and James, this has been your first exposure to D-VHS D-Theater, and I can tell that you are pretty excited about it..

Rosser: I think what it does is give motivation to people instead of trying to trick technology into making DVDs look good. We've got the original source now. We have the original quality picture, which is going to put home theatres that are at the high-end much closer to film. As you know, Gary, one of our endeavors has been that if you are running literally the print next to our picture, our picture would be very close to the print. That's cheating because we're taking the DVD off the negative, and the print is four generations down, but that was still a very lofty goal three years ago. But we don't have bob and weave and other projector artifact stuff. Well, D-VHS is taking it a step further. I think if you ran a print right next to this D-VHS D-Theater release title, you would probably like the D-VHS better than the print.

WSR Reber: I agree.

Rosser: So, what has JVC just done? They've given a home theatre greater presence than a theatre, except for the involvement of the people and the theatrical scale.

WSR Reber: How do you want to wrap it up? What's the summation here?

Fitzgerald: From the studio perspective, we are very happy about this. We've asked for and gotten everything we need in reasonable copy protection. And we are able to give people a good picture. We are able to put our software out in the best possible way to deliver it to your home, which is the best picture ever. I'm happy about it.

WSR Reber: ...and sound.

Fitzgerald: ...and sound.

WSR Reber: I wouldn't want anyone to discount the sound because it is really terrific, and exceeds that of DVD-Video format.

Fitzgerald: I'm very happy about it, Universal Studios is very happy about the opportunities, and we're very happy that you've agreed with us that there is not much difference in looking at the master versus looking at the D-VHS.



Incredible Fireball Explosion Resulting From U-571 Torpedo Hit On German Destroyer

WSR Reber: What's been your experience with the overall reaction of cinematographers and filmmakers to D-VHS D-Theater?

Fitzgerald: This is so new, so there hasn't been much reaction. I don't think any cinematographer, other than Allen Daviau, who has actually looked into this that closely. Once they do though, I'm sure they will be thrilled about anything that makes their picture more faithful to the master. That is certainly something they want. It achieves a goal.

Wellnitz: The artistic creation will come through a little truer because it is not being scaled and it's not being stepped on.

Fitzgerald: Absolutely. Any closer to what they see at the telecine is a win.

Wellnitz: From an equipment manufacturer's standpoint, it has always been the case, in both audio and video, that equipment has far exceeded the capabilities of the software that was available, so a lot of companies have gone to taking broadcast equipment to trade shows to show off the capabilities. The natural frustration if someone says, "Gee, that's terrific. I'll take that picture," is "Well, you can't have that." Now you have the capability to close the loop. You actually have software that can run with the equipment.

WSR Reber: Any other comments?

Rosser: I'd like to thank you and your staff for having us over. This is our first trip to your theatre, and it is very impressive.

Fitzgerald: Yes, thank you, Gary. It is very impressive. ■

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