

By Bill Hunt

Introduction

As the editor of **The Digital Bits**, I'm proud to present you with **The Ultimate Guide to Anamorphic Widescreen DVD (for Dummies!)** - the Everyperson's bible to DVD's most important video quality feature.

You may remember the first editorial I did on this subject back in 1998: *The Big Squeeze: The ABCs of Anamorphic DVD*. Lots of you have let me know that the editorial helped you to better understand just exactly what anamorphic is and how it works. But we still get tons of e-mail from puzzled readers asking questions about it. I recently did some research of my own, and started looking at the various resources available on the subject (both online and in various print publications).

What I discovered, is that while there are lots of good articles on anamorphic widescreen, most of them are written in very technical terms and are difficult for even reasonably savvy DVD consumers to understand. Given the vigorous position in support of anamorphic widescreen that we've taken here at **The Digital Bits**, I decided to assemble what I hope will become the most clear and easy-to-understand guide on the subject. And it will always be just a click away, easily accessed by pointing your mouse at the familiar Anamorphic Widescreen logo found on every page of the **Bits**.



In the pages that follow, you'll learn EXACTLY what anamorphic widescreen on DVD is. You'll discover how it works and (more importantly) you'll learn why you should care about it. We'll also give you a primer on film aspect ratios - how they came to be and what that means for DVD. My hope is that by the time you're through reading this, you'll know everything you need to know about the subject. And whether you own a widescreen TV or not, you'll want to call, write or e-mail the Hollywood studios, and insist that all your favorite widescreen movies on DVD be anamorphic-enhanced.

One note before we continue... in the text of this **Guide**, I'm going to be referring to the terms widescreen TV and Digital TV almost interchangeably. You CAN get analog widescreen TVs that take advantage of anamorphic DVD. They are very common in Europe and parts of Asia (Europe has had anamorphic for years). But here in the States, they aren't so common. Most peoples' first experience with a widescreen, anamorphic-ready TV here, will be when they eventually purchase a Digital TV. So to avoid undue confusion, that's what we'll focus on. Just FYI.

So let's get started...

Why Anamorphic?

If you've looked at the back of a DVD case these days, you've probably seen all the bewildering terminology: 16x9, anamorphic widescreen, enhanced for widescreen TVs... the list goes on and on. They're all referring to the same thing. Simply put, anamorphic widescreen is a special feature of DVD, that means that the video on the disc packs the most resolution possible by the TV standards of today and the near future. Mind you, we're not talking about high-definition television-like resolution. While there have been technology demonstrations of HD-DVD (High-Definition DVD), most industry experts believe that such a format is more than a decade away, at the very best case.

There are several reasons for this. First of all, it will likely be years before the DVD Consortium (the industry alliance that oversees the DVD format) agrees to an official HD-DVD standard. Second, bringing HD-DVD to the consumer marketplace at affordable levels will require breakthroughs in blue-laser technology, which are only now beginning to happen in the laboratories of the major electronics manufacturers. Finally (and probably the biggest roadblock), there are VERY serious digital piracy and copyright concerns that must be addressed on behalf of the Hollywood studios and other content providers before they'll feel comfortable releasing movies on disc in high-definition. This has become a particular concern in light of the recent hacking of DVD's current CSS encryption scheme.

But here's the cool thing about current DVD technology: by mastering widescreen movies on DVD using the format's anamorphic feature, content providers can ensure that today's DVDs will look great even on tomorrow's Digital TVs (which are starting to become available now). So in the same way that consumers will enjoy even greater audio quality from their DVDs by upgrading to Dolby Digital and DTS 5.1-capable audio equipment, they'll get better video quality too when they buy a new widescreen TV. And even if you don't have a new widescreen TV, you can still enjoy some of the quality benefits of anamorphic right now on your current TV (as we'll discuss later in this Guide).

To knowledgeable DVD fans, seeing the terms "16x9" or "anamorphic" on a disc is like having the **Good Housekeeping Seal of Approval**. It tells them that in today's blistering consumer electronics marketplace, where change and obsolescence can happen in the blink of an eye, the DVD they're spending their hard-earned cash on is at least a little future-proof. And that's important.

But Why Widescreen at All?

Before we get into how anamorphic widescreen works on DVD, we need to know something about the nature of widescreen. As most of you know by now, the vast majority of films made today are shot in widescreen aspect ratios, meaning that the shape of the film image itself is much wider than the screen of your current TV. The reasons for this date back to the 1950s and are quite interesting from the perspective of film history. But the result of it all, is that filmmakers (and particularly the Hollywood studios) face some tough challenges when working to bring widescreen films to home video so that you can all enjoy them in the comfort of your living rooms.

For years, there have been two major choices available when transferring widescreen movies for home video: pan & scan or letterbox. In a pan & scan transfer, the video camera "pans and scans" back and forth across the film image to keep the most important action centered on your TV screen. The problem with that, is that as much as 50% of the film's original image can be lost in the process. And the beauty of the artistic composition of objects and movement within the frame is destroyed.

Our position here at **The Digital Bits** (and it's a position shared by the vast majority of serious film buffs) is that it's ALWAYS preferable to view a movie at home in the aspect ratio that the film's director originally intended it to be seen. That means that we prefer to view widescreen movies in the letterbox format (in which the ENTIRE film image is presented, and black bars fill the unused screen area at the top and bottom of the frame). To us, pan & scan is as bad as colorizing a black & white film - it amounts to artistic butchery. But that preference for letterbox viewing has always come at a steep price - a loss of vertical picture resolution. After all, if those black bars are going to take up part of the screen on your TV, that leaves less picture area for the actual film image. Thanks to DVD's anamorphic widescreen feature however, that problem will soon be a thing of the past.

For the sake of this **Guide**, I'm going to assume that all of you share our opinion as to the proper way to view widescreen films at home. But we understand that lots of consumers don't understand this issue, or may not even be aware that there's an issue at all. So we've prepared a special primer on aspect ratios, that will explain exactly why films come in different shapes than your TV, and how it makes a difference when you watch them at home. And believe us... it's a HUGE difference (as you'll see). I've taken actual freeze-frames from several new and classic movies on DVD to illustrate things for you in an easy to understand way. And when you're done, you can jump right to the next section of the Guide, and we'll continue our explanation of anamorphic widescreen (you won't miss a thing).

So for those of you who want to learn all about aspect ratios, be sure to read **Widescreen-o-Rama!**



And for the rest of you, let's continue on to the next page...

Anamorphic DVD At Last!

All right - here's where we get to the meat of anamorphic widescreen. As most of you know, those of us here in the U.S. have a Digital TV in our future, like it or not. The reason for this, is because the Government has mandated a full conversion of American television broadcasting to Digital TV by the year 2006 (although the realities of the marketplace will probably mean that the actual conversion will take as much as a decade longer). Digital TV (aka DTV, as determined by the Grand Alliance - the industry consortium which decided upon the standard) is really some 18 different formats labeled under one umbrella term. Some of these formats are Standard definition (SDTV - meaning that they use the same 525 lines of picture resolution that current analog NTSC does today) and some are High-definition (HDTV - broadcasting at a full 1080 lines of resolution). All are fully Digital, which should result in much better reception quality - with a DTV, you'll either get a perfect picture, or no picture at all (gone are the days of watching electronic snow on your TV). Some of the DTV formats don't even deliver video at all, carrying instead simply computer data, for such things as live stock quotes, sports scores, Internet access and more. In fact, one of the big controversies at the moment, is that the major TV networks want to use the extra bandwidth that DTV provides to broadcast MORE channels of SDTV, instead of the HDTV we all expect (you see... by broadcasting MORE channels instead of better channels, they can sell more advertising).

But I digress. You all want to know what Digital TV has to do with anamorphic DVD. Here's the deal: one of the cool things about DTV is it's aspect ratio - 1.78:1 (also known as 16x9). In other words, the future of TV is widescreen. Surely, you can already imagine how much easier that will make it to bring widescreen movies to home video. No longer will TV's aspect ratio require the butchering of widescreen films.



Ah... but it gets even better. Digital TV is "anamorphic ready". Which means that if a widescreen movie on DVD is recorded in the anamorphic format, a Digital TV can "unsqueeze" the video image contained on the disc, so that it fills the full width of the TV screen, while retaining a LOT more vertical resolution. In other words, the video's vertical resolution will blow a standard letterbox transfer away. The image you'll be seeing will contain a LOT more lines of vertical resolution (still not fully high-definition, but much more than on a Standard TV), so the picture will be clearer and cleaner than you've ever seen it before... and you'll still be seeing the original widescreen aspect ratio as the director intended you to. And all this is with the current anamorphic DVDs that you all have in your movie libraries today - there's no need to buy new discs. How do you like them apples?

So How Does Anamorphic Work?

Given all of the early foot-dragging by the Hollywood studios toward anamorphic on DVD, you're probably convinced that it must surely be an expensive and time-consuming process. You couldn't be more wrong. All that's required from the perspective of the Hollywood studios, is to request an anamorphic transfer during the telecine stage. I've done some digging, and discovered that this generally costs no more than it does to commission a standard letterbox transfer, as long as the proper film elements are available (extra costs are usually only incurred if the original film elements are in need of restoration). The best possible film transfer would, of course, be a high-definition anamorphic transfer. That will run you several thousand dollars more... but there are advantages to it. The most obvious of these is the higher video quality an HD transfer will afford you. Also, you'll get a digital master of your film that can sometimes be digitally cleaned up and restored to better than original theatrical quality. This master can be stored to preserve the film for future generations in pristine condition (the data won't degrade like film will). Better still, this master can be used to originate the film on every home video and broadcasting format currently available today, from VHS and Laserdisc to DVD and HTDV.

Anamorphic DVD At Last!

Once the transfer is done, and you've got a digital master of your film in hand, all that's required in the DVD authoring stage is to tell the technician that you want the widescreen video to be in anamorphic mode. The tech simply goes into his authoring software, and presses a button to insert the necessary flags onto the disc (so that the DVD player and DTV will recognize the anamorphic signal). That's it. That's as hard as it gets.

Okay... so your disc is anamorphic, and you've got your DVD player and DTV ready to go. I'm sure by now you're all wondering how anamorphic works after you pop the disc into your player... and more importantly, how it looks. I'm more than happy to explain it to you. In fact, it's probably easier if I just SHOW you. Below you'll find links to demonstrations I've put together using actual video from a pair of films that are available on DVD in BOTH anamorphic widescreen and standard letterbox (non-anamorphic). I'm using two films as examples, because I want to show you the difference between films in Academy Flat (1.85:1) and Anamorphic Scope (2.35:1) aspect ratios. So go ahead and click over to those (first one, then the other), and by the time you come back here, you'll know exactly how anamorphic on DVD works.

Anamorphic vs. Non-anamorphic (1.85:1 Film)

Anamorphic vs. Non-anamorphic (2.35:1 Film)

Okay... if you've come back after checking out the two demonstrations above, you no doubt know that the widescreen video signal on an anamorphic DVD appears to be "squished". Here's an interesting side note on this before I continue: This squished picture is why a lot of people early on thought their DVD players were defective. Many of the early players shipped from the manufacturers in Japan preset for widescreen TVs, and unknowing consumers here in the U.S. simply hadn't told their player that they had a Standard TV instead. And it wasn't just consumers making this mistake - you could walk into almost any Best Buy or Circuit City early on and see the same problem right on the sales floor. Go figure.

I Don't Have A Digital TV - Why Should I Care?

So you don't have a Digital TV yet - you're not alone. Some of you may be wondering why you should give a rip about anamorphic if you plan on keeping that Standard TV for quite a while to come. That's a question I get a lot, not just from consumers, but from the studios as well. Believe me - you'd be amazed how many studios execs use that as an excuse not to go anamorphic.

The bottom line is this - doing a new anamorphic transfer is almost always going to result in better quality, even if you still only have a Standard TV. The reason for this, is that today's telecine processes are fully digital. The state-of-the-art in film transfer technology is much better today that it was even a few years ago, especially with high-definition transfers being done more and more. When a studio simply re-uses an "off the shelf" laserdisc master (done even just a few years ago), you're going to see unnecessary edge-enhancement and all kinds of other NTSC and analog artifacts in the video. A new digital transfer will be clean and crisp, with vibrant and correctly timed color. It may even have been digitally cleaned, with little spots of print damage, hair and dust actually having been digitally erased from the image altogether.

And remember how much money you're all spending now to replace your VHS collection of movies on DVD? Do you really want to have to re-purchase all your films again when you get that new Digital TV? Of course not. Making sure to buy anamorphic widescreen DVDs now, means that your money is well spent. You can rest easy, knowing that your current DVD library is a least a little future proof - your discs look great now, and they'll look even better on that new widescreen TV you buy in a few years.

So doing anamorphic on DVD is a win-win situation for everyone, right? Sure. But there was a time, early on in the history of the format, where the studios were reluctant. In many cases, they simply didn't understand the anamorphic feature of DVD. You'd be surprised how many studio executives in charge of DVD that I had to explain it to early on. And some were concerned that all that electronic "squishing and unsquishing" of the video signal would degrade the picture quality on current TVs. To be fair, some early players weren't so good at the process. But that problem has long since been resolved. Current DVD players almost universally render amazing widescreen images from anamorphic DVDs.

All said, it took a couple of years for some studios to finally make the move to anamorphic widescreen on DVD. Buena Vista and Fox have only recently started doing anamorphic transfers for their discs (**Tarzan** is anamorphic, for example, as will be

Fox's upcoming **Fight Club** disc). But some studios have been doing right by DVD straight out of the gate, like Columbia TriStar, Warner Bros., New Line and DreamWorks (once they finally hopped on the DVD bandwagon). Others, like Paramount, MGM and Universal, soon adopted the feature on at least some of their releases. The bottom line, is that for many of the studios, anamorphic widescreen has become the rule for DVD, instead of the exception. And every major studio has now released at least a few anamorphic discs.

How Do I Know A DVD Is Anamorphic?

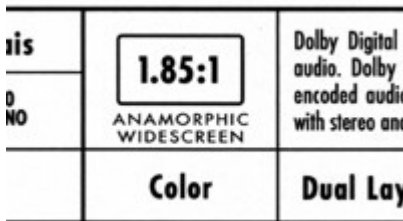
Few studios seem to label the anamorphic widescreen feature on their DVD packaging in exactly the same way, and some don't label it at all. But the following are some words to look for in general.



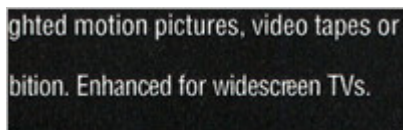
MGM



PARAMOUNT



UNIVERSAL



WARNER

20th Century Fox: Enhanced for Widescreen TVs, sometimes not labeled

Anchor Bay: Enhanced for 16x9 TVs

Artisan: 16:9 Fullscreen Version, or Enhanced for 16:9 Television

Buena Vista: Enhanced for 16x9 Televisions

Columbia TriStar: Anamorphic Video (recently), often not labeled

Criterion: Enhanced for Widescreen Televisions, or simply "16:9"

DreamWorks: Anamorphic Widescreen

Image: Enhanced for 16x9 TVs

MGM: Enhanced for 16x9 TVs

New Line: Enhanced for Widescreen TVs

Paramount: Enhanced for 16x9

Trimark: Widescreen (if it says "Letterboxed", that's non-anamorphic)

Universal: Anamorphic Widescreen

USA: USA: Widescreen 16x9

Warner Bros: Enhanced for Widescreen TVs

But what if you've got a widescreen DVD and you can't find any markings about anamorphic on the packaging? Many of Columbia TriStar's widescreen DVDs are anamorphic (but not labeled as such). How do you tell? Well... remember that problem we mentioned a few minutes ago, where people were seeing "squished" pictures on their Standard TV? You can use that to find out - simply go into your DVD player's setup menu and tell it that you have a widescreen TV (it may be labeled simply "16x9"). On your Standard TV, if a disc is anamorphic, it will look squished. If it looks the same, it's non-anamorphic. Don't forget to switch your DVD player's setup back to Standard "4x3" TV mode when you're done!

You should know that here at **The Digital Bits**, whenever we review a DVD, we'll always let you know if it uses anamorphic widescreen or not. Just look for this symbol at the top of the review:



Conclusion

So have I convinced you yet? Well don't take my word for it - go out to your local electronics store and ask to see a demonstration of anamorphic DVD on a widescreen TV yourself. Once you see it firsthand, I think you'll be converted. And remember, you don't have to have a fancy \$5,000 TV to see the improved picture quality that a new anamorphic transfer can provide on DVD. They'll look great on your current TVs right now.

Anamorphic widescreen DVD is all about giving you the most lines of picture resolution (and thus quality), while still allowing you to watch widescreen movies as they were meant to be seen. All you have to do is open the pages of any major home theater magazine (or web site online), to find the experts in agreement with me on the benefits of anamorphic on DVD. I think **Stereophile Guide to Home Theater's** Fred Manteghian said it best, when extolling the virtues of anamorphic in his regular column in the magazine: "All else being equal, the image with the most lines wins." Amen, brother.

As always, I welcome your comments.

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I'm sure by now, most of you know that when you go to see a movie in a theater, the screen you watch movies on is shaped differently than your TV screen at home. Properly shown movies appear to be much wider-looking than television programs do. There's a reason for that, and it's all about something called aspect ratios.

So just what exactly are aspect ratios, and how did they come to be? Well sit right back, and I'll tell you the whole story...

The Way Movies Looked Before the 1950s

Way back at the beginning of motion picture history, movies all looked roughly the same shape when projected in a theater. The relationship between the width of a film image and its height is known as its aspect ratio, and from the early days of film (starting in the late-1890s) until the early-1950s, almost all films had a standard aspect ratio of 1.33:1 (technically, it was actually 1.37:1, but 1.33:1 is the recognized standard). In other words, the film image was 1.33 times as wide as it was tall (another way to denote this is 4x3, meaning 4 units of width for every 3 of height).



This eventually became known as Academy Standard (when it was recognized formally by the Academy of Motion Picture Arts and Sciences in the 1930s). Almost every classic film you can think of from this period of time appeared in this ratio. The examples you see below are actual screen shots (taken from DVD) of 4 films in their original Academy Standard aspect ratio.



Above (L to R): Universal's *Dracula* (1931) and MGM's *Gone With the Wind* (1939)
Below (L to R): Warner's *The Wizard of Oz* (1939) and Republic's *It's a Wonderful Life* (1946)

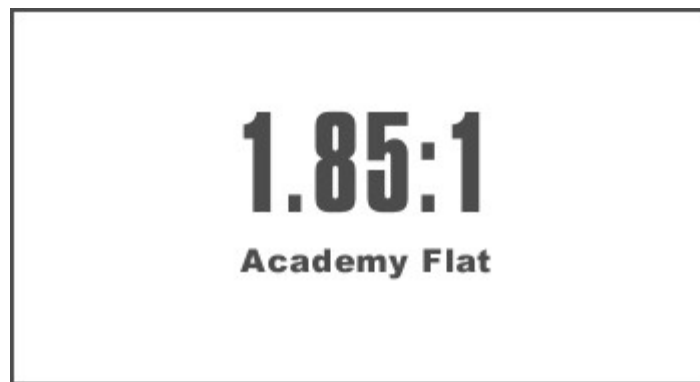


When it comes to transferring to home video films shot in the Academy Standard aspect ratio, there's no problem at all. Why? Well, you may have noticed that Academy Standard is shaped an awful lot like your current TV set. That's because when it came time for the television industry to decide what shape TV would take (in the early 1950s), the National Television Standards Committee (NTSC) selected Academy Standard as the official aspect ratio for TV broadcasting here in the United States (the current TV standard here in the U.S. is also called NTSC, after the organization that set the standard). You'll remember that we mentioned "4x3" a few minutes ago - that's how many people in the industry refer to current TVs.

But once TV began capturing the imagination of American consumers, the Hollywood film industry was faced with a problem: so many people were buying TVs and staying at home to watch them, that theater attendance began to decline dramatically. So the studios began making some changes to the look of their movies.

The Way Movies Looked After the 1950s... and Still Do Today

What Hollywood began to do, was to experiment with making films in three-dimension (3D) and widescreen aspect ratios. Some of you may remember 3D films, which required that you wear a pair of rather silly looking stereoscopic glasses (one of the plastic filters the glasses used for "lenses" was blue and one was red). Experiments with both 3D and widescreen in films had been occurring since the early 1920s, but it was the 50s that they really took off. Sadly (and thankfully!), 3D was nothing more than a passing fad, but widescreen was here to stay. In 1953, 20th Century Fox introduced the world to the CinemaScope, which was used by many studios between 1953 and 1967 (it eventually gave way to Panavision, which is the most used widescreen process today). In 1953, there were some 5 films released in a widescreen aspect ratio. By the following year, there were nearly 40. And by 1955, the number had exploded to more than 100. Today, widescreen dominates American filmmaking in a variety of aspect ratios. But there are two "standardized" ratios that are by far the most common: Academy Flat (1.85:1) and Anamorphic Scope (2.35:1). Other less used ratios include 1.66:1 and 2.20:1 (70mm), but we'll stick to 1.85:1 and 2.35:1 for the purposes of our discussion.



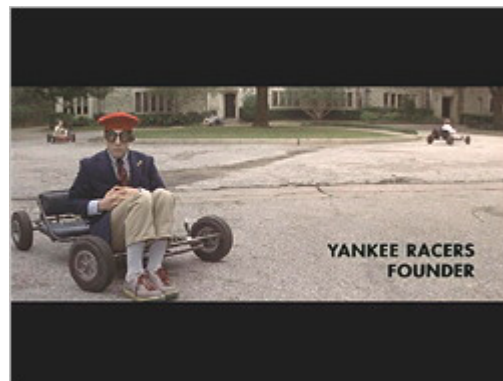
In the case of Academy Flat, the film is 1.85 times as wide as it is tall (it's often referred to today as simply "Flat"). Anamorphic Scope is even wider, 2.35 times as wide as it is tall (it's usually called "Scope"). Some familiar films shot in the Flat aspect ratio include *The English Patient*, *All the President's Men* and *The Birds*. Scope films include *Star Wars*, *Apocalypse Now* and *Blade Runner*. Note the examples on the next page.



Above: Miramax's *The English Patient* (1996) in Academy Flat (1.85:1)
Below: Fox's *The Thin Red Line* (1998) in Anamorphic Scope (2.35:1)



There can be no doubt that widescreen films convey much more dynamic imagery, with the wider aspect ratio working to enhance the dramatic impact of the film upon the viewer. But when it comes time to transfer such films to home video, there's a problem with those wider aspect ratios - they're too wide to fill the TV screen vertically if you're seeing the whole image horizontally. As you've learned if you've been reading our Ultimate Guide to Anamorphic Widescreen DVD, there have been two primary ways to deal with this problem: pan & scan and letterbox transfers. The pan & scan process has the video camera scanning back and forth during the transfer to keep the most important action centered on your TV screen (on DVD packaging, this is rarely referred to as pan & scan. More often you see the words "full frame", which often - but not always - indicates a pan & scan transfer. Basically, it means that the film has been "modified" in some way to fit your TV screen completely). The problem with this, is that you may lose as much as 50% of the original film image and the widescreen-oriented composition is lost completely. Most serious film enthusiasts prefer the letterbox format, in which the ENTIRE film image is presented, and black bars fill the unused screen area at the top and bottom of the frame (see examples below).



Examples of the letterbox presentation of a 1.85:1 film (*Good Will Hunting* - left) and a 2.35:1 film (*Rushmore* - right) on a Standard 4x3 TV. Both films are from Miramax.

While some vertical picture resolution is sacrificed, the director's original widescreen composition is preserved - you're seeing the WHOLE film, as you were meant to. Why would you want to see the film in any other way?

But as we all know, there are still some folks who prefer the picture to fill their TV screen completely. You know the ones - the folks who see letterboxed video and say, "Why are those black bars there? Something must be wrong with the TV." Personally, I maintain that if these people really knew what they were missing by watching a "full frame" version of a widescreen film, they would change their minds in a hurry. I've converted lots of people to letterbox, simply by showing them the difference between the full frame and widescreen versions on a DVD that includes both formats.

Let's take a look at some comparisons between full frame and widescreen film presentation. As you'll soon see, being able to see the whole widescreen image makes a HUGE difference. There's just no comparison.

Widescreen vs. Full Frame (2.35:1 Ratio Films)

Let's take a look at some comparisons between widescreen and full frame presentation of Scope films (aspect ratio 2.35:1). Since this ratio is the wider of the two common ratios in use today, it only stands to reason that you'll be missing out on the most picture area when watching a full frame version. All of the examples shown on this page are freeze frames of actual DVD video, taken from discs which include both full frame and widescreen versions. The widescreen version will always be on the left.



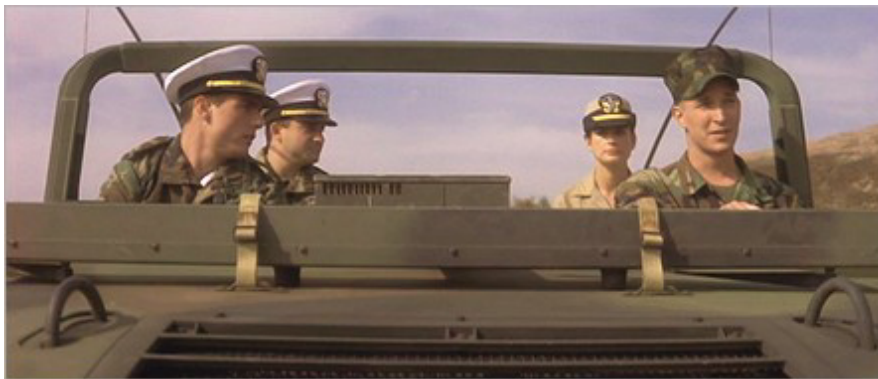
Above is an example of a shot taken from Warner's **Blade Runner**. Deckard (played by Harrison Ford - center) is talking with Rachel (Sean Young). Note director Ridley Scott's striking composition and the imagery in the background on the widescreen version. But in the full frame version, we lose much of the visual impact of the background and fully half of the conversation.



Here's another example from Buena Vista's **The Black Hole**. The whole point of this shot is to show off the vast scale of the setting, in this case, the bridge of the spaceship Cygnus. The set is sweeping and alive with color, but look how much of it you miss in the full frame version.



No one used the widescreen ratio more dynamically than director Sergio Leone, as seen in the widescreen version of MGM's **A Fistful of Dollars** (above left). Clint Eastwood's legendary "Man with No Name" has just arrived in town, only to be challenged by a group of outlaws. Notice how Leone spreads his action across the entire frame to enhance the tension and the visual impact of the scene. But in the full frame version, we're missing one of the bandits completely and the action is crowded into the frame, resulting in a much less dramatic image.



Above is an example of how full frame actually changes the editing in Columbia TriStar's **A Few Good Men**. Kaffee and Weinberg (Tom Cruise and Kevin Pollak - on the left in the widescreen image) are talking with Barnes and Galloway (Noah Wyle and Demi Moore) during a jeep ride in Cuba. They're all there in the widescreen version, but in they don't all fit into the full frame, so the film has actually been re-edited. In the full frame version, the film cuts back and forth from one side of the screen to the other to show the whole conversation.



Here's another example from **A Few Good Men**. In this scene, Kaffee (center) is pressing his case against Colonel Jessep (Jack Nicholson - right). The widescreen image provides a fine example of how a film technique called "deep space" has been used to increase the dramatic tension in the scene. Notice that Kaffee (in the midground) is locked in a staring match with Jessep (foreground). Meanwhile, Ross (played by Kevin Bacon - background left) is objecting to Kaffee's argument. But in the full frame version, we lose Jessep completely, along with much of the tension.



And here's Universal's **October Sky** (above). The "rocket boys" are watching the launch of their latest homemade rocket, but we don't even see them at all in the full frame version.

Widescreen vs. Full Frame (1.85:1 Ratio Films)

Scope (2.35:1) films aren't the only ones to suffer from full frame presentation. Here are some examples of films in Academy Flat (1.85:1) aspect ratio, in both widescreen and full frame versions. While the problem isn't quite as severe here as it can be with wider aspect ratios, the result is just as bad in most cases. Once again, all images are actual DVD snapshots (widescreen is on the left).



Here's Carol (Helen Hunt) and Melvin (Jack Nicholson) in Columbia TriStar's **As Good As It Gets**. Since Carol's doing the talking in this shot, the camera angle naturally favors her. But at this angle, we almost completely lose Melvin from the shot in the full frame version.



And here's another Columbia TriStar title - **Jason and the Argonauts**. A giant metal statue has come to life to threaten Jason and his crew (cowering on the right), as we can plainly see in the widescreen version. But in the full frame version, we lose the crew completely. Once again, the dramatic tension is completely undermined.

Other Options

These are just a few of the examples we could have shown you - there are literally thousands. Now that you've seen what a difference there is between widescreen and full frame presentation, we should note that there are a couple of techniques that can be used to get around the problem of bringing widescreen films to home video. The first is a film/camera lens format that some directors use (including James Cameron), called Super 35.



Above are the widescreen and full frame versions of Columbia TriStar's **Air Force One**, starring Harrison Ford and Gary Oldman. Here, director Wolfgang Peterson has shot the film in Super 35. The film was presented in the 2.35:1 aspect ratio in theaters (left), but we WEREN'T seeing the whole filmed image - just a portion of it. When it was time to transfer this film to home video, Peterson simply let us see more of the frame as filmed (on the right). I've added the white box outline on the full frame image to show you exactly what portion of the picture was seen theatrically in widescreen. This can be an effective technique, which has been used on such films as **Terminator 2: Judgement Day**, **Titanic** and **The Abyss**. But it also confuses many, and leads to some controversy. For example, director James Cameron has gone on record as saying that he actually prefers the full frame versions of several of his movies (much to the consternation of widescreen fans).

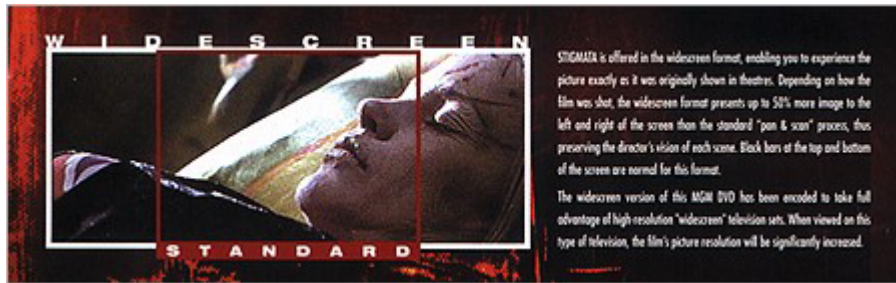
There is one other very new process that can be used to create more effective full frame presentations for home video, but it only applies to films that are generated entirely by computer (like Disney and Pixar's recent **A Bug's Life**). But we'll mention it here, because it will probably become more common as more computer animated films are released in the future. The process involves re-composing and re-rendering the image for both widescreen and full frame formats.



In this example from **A Bug's Life**, we can see the differences in the composition of the frame in the original theatrical widescreen presentation (on the left) and the re-composed full frame (on the right). For the full frame version, Pixar's animators have actually re-positioned characters within the frame. I've added arrows to the full frame image, so that you can see how the ant on the right has been moved to the left, and the entire leaf both ants are standing on has been moved slightly to the right. The result is an effective image, regardless of which version you're watching. But once again, this is very rare (this is the only film to have been so modified as of the time of this publication).

So who's job is it to educate the public about the benefits of widescreen presentation on home video? Well, we think the studios should make greater efforts to do so (below is an example of a note that MGM includes in the booklets of many their

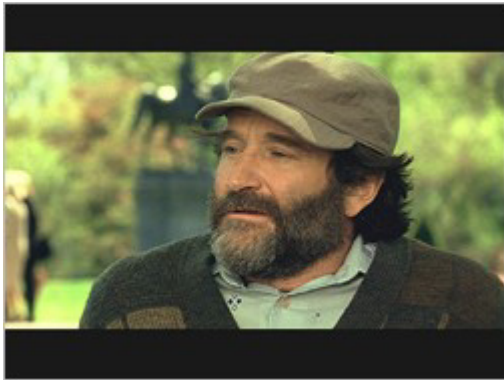
widescreen DVDs - this one from Stigmata). We also think that major retailers and "rentailers" like Best Buy and Blockbuster should post signs on the subject to help educate their customers.



In any case, I hope by now you can see the difference between widescreen and full frame... and that widescreen is almost ALWAYS preferable. But once again, widescreen presentation on home video has always meant letterboxing, which some people find objectionable. Thankfully, DVD's anamorphic widescreen feature provides a nifty solution to this problem on new widescreen TVs. Jump to the **Anamorphic Guide** to find out more about it...

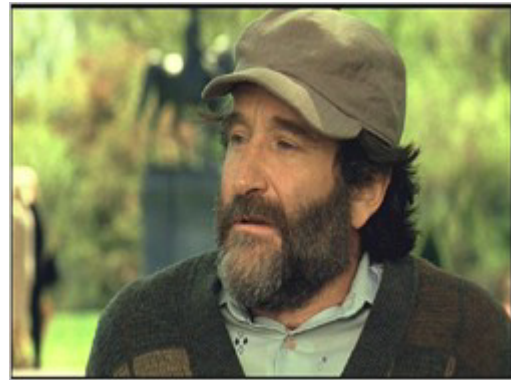
The following is a comparison of anamorphic and non-anamorphic (letterboxed) widescreen DVD video, as displayed on Standard 4x3 and Digital 16x9 TVs. For this demonstration, we've chosen to use snapshots of actual DVD video from the film **Good Will Hunting** (aspect ratio is 1.85:1). Buena Vista's U.S. DVD version (on the left) is non-anamorphic. By contrast, Alliance's Canadian DVD release (on the right) is anamorphic.

Non-Anamorphic (Letterboxed)



The video recorded on a non-anamorphic DVD. Notice the black bars at the top and bottom of the frame. These are actually present in the signal.

Anamorphic



The video recorded on an anamorphic DVD. Notice that the image appears "squished" horizontally, while retaining its full vertical resolution. Notice that there are virtually no black bars visible in the signal. Normally, you would never see the video in this state. The only time you would see this "squished" picture, is if you were watching the disc on an improperly set-up DVD player, using a Standard 4x3 TV - the player thinks you have a Digital 16x9 TV. A quick adjustment in the player's menu would correct this problem.



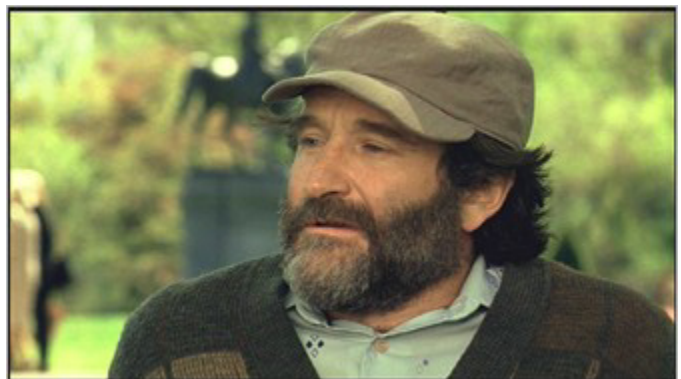
Non-anamorphic video as it appears on a Standard 4x3 TV. This is the familiar letterboxed image you're used to.



Anamorphic video as it appears on a Standard 4x3 TV. The DVD player performs a mathematical downconversion on the video signal, in effect combining every 4 lines of vertical resolution into 3 until the correct aspect ratio is achieved. The black bars at the top and bottom of the image are generated electronically, completing the image. Visually, it's nearly indistinguishable from a non-anamorphic (letterboxed) DVD image.



Non-anamorphic video as it appears on a Digital 16x9 TV. The gray bars are generated by the TV to fill in the unused portions of the screen. Using the TV's "zoom" mode, you can magnify the image to fill the screen electronically, but at the cost of degrading the image quality significantly.



Anamorphic video as it appears on a Digital 16x9 TV. The "squished" image recorded on the disc (seen at top) is sent directly to the TV, which stretches the video signal horizontally until the correct aspect ratio is achieved. As you can see, the image fills the frame, while retaining its full vertical resolution. The picture quality is stunning.

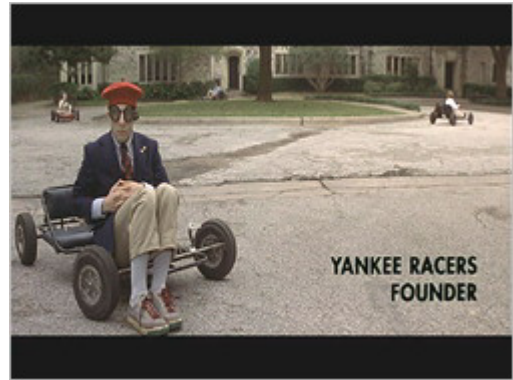
The following is a comparison of anamorphic and non-anamorphic (letterboxed) widescreen DVD video, as displayed on Standard 4x3 and Digital 16x9 TVs. For this demonstration, we've chosen to use snapshots of actual DVD video from the film **Rushmore** (aspect ratio is 2.35:1). Buena Vista's original DVD version (on the left) is non-anamorphic. By contrast, The Criterion Collection DVD release (on the right) is anamorphic.

Non-Anamorphic (Letterboxed)



The video recorded on a non-anamorphic DVD. Notice that the black bars at the top and bottom of the frame are somewhat thicker than in a 1.85:1 presentation. Since the 2.35:1 aspect ratio is wider, the thicker bars are necessary to maintain the proper composition. These are actually present in the signal.

Anamorphic



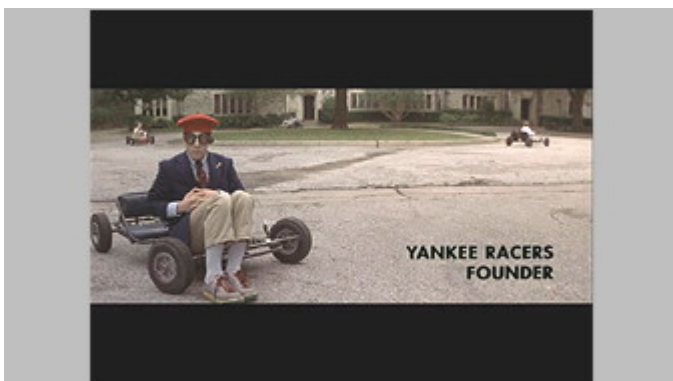
The video recorded on an anamorphic DVD. Notice that the image appears "squished" horizontally, while retaining nearly its full vertical resolution. In addition, black bars are now visible at the top and bottom of the frame. Since the 2.35:1 aspect ratio is wider, the bars are necessary to maintain the proper composition. These are actually present in the signal. Normally, you would never see the video in this state. The only time you would see this "squished" picture, is if you were watching the disc on an improperly set-up DVD player, using a Standard 4x3 TV - the player thinks you have a Digital 16x9 TV. A quick adjustment in the player's menu would correct this problem.



Non-anamorphic video as it appears on a Standard 4x3 TV. This is the familiar letterboxed image you're used to.



Anamorphic video as it appears on a Standard 4x3 TV. The DVD player performs a mathematical downconversion on the video signal, in effect combining every 4 lines of vertical resolution into 3 until the correct aspect ratio is achieved. Electronically-generated black bars are added to the existing ones (to fill in the remaining screen area), completing the image. Visually, it's nearly indistinguishable from a non-anamorphic (letterboxed) DVD image.



Non-anamorphic video as it appears on a Digital 16x9 TV. The gray bars are generated by the TV to fill in the remaining screen area. Using the TV's "zoom" mode, you can magnify the image to fill the screen electronically, but at the cost of degrading the image quality significantly.



Anamorphic video as it appears on a Digital 16x9 TV. The "squished" image recorded on the disc (seen at top) is sent directly to the TV, which stretches the video signal horizontally until the correct aspect ratio is achieved. As you can see, the image fills the frame, while retaining nearly its full vertical resolution. Since the 2.35:1 aspect ratio is wider, thin black bars are still necessary to maintain the proper composition (they're in the video signal). The picture quality is stunning.