



THE CASABLANCA AND WIDESCREEN VIDEO

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Widescreen (16:9 aspect ratio) televisions are an increasing fraction of those being sold. The reason for this is high definition television (HDTV) which, by definition, requires a 16:9 display. Widescreen (16:9) video has a raster that is about 1.78 times wider than it is high. Standard definition (SD) video can have **either** a 4:3 or 16:9 aspect ratio.

Our U.S. Congress recently ruled that all television broadcasts will be digital by the year 2009. Digital television (DTV) does **not** mean that all broadcasts will be high definition television (HDTV). Put another way, **all HDTV is digital** but **not all digital television is HDTV**. There are several formats within the Advanced Television Standards Committee (ATSC) set of digital formats that are standard definition (SD) which are very similar to NTSC video.

Many consumer and most prosumer camcorders sold today can shoot and record either 4:3 or 16:9 SD video. There are also several consumer and prosumer camcorders that can also shoot and record HD video.

Although more televisions being sold are 16:9 format, not all are. The Congressional ruling on DTV only mandates that broadcasts be digital, not whether they are HDTV or 16:9 format. This means that, even after the 2009 deadline, new televisions being sold can have either 4:3 or 16:9 displays. Those with a 16:9 display may display either SD or HD video. I would speculate that 4:3 displays will become an ever-decreasing fraction of televisions over time.

What does all of this mean to us videographer/editors? It means that we will be getting requests for shooting and editing 16:9 SD or HD video and helping people display their archival 4:3 videos on their new 16:9 television sets.

The objective of this memo is to illustrate some of the shooting, editing, and display options for mixing the various video formats.

HOW DO I CONVERT LEGACY 4:3 VIDEO FOR 16:9 DISPLAY?

Basically, using the Casablanca, you don't. The easiest thing to do is tell your client they should set their television for "4:3" display using their TV's setup menu when they are viewing such legacy video.

Let's look at some graphics. Consider this 4:3 image. This is how it looks when viewed on a conventional 4:3 television display. A circle in the original video appears as a circle.



is how it looks when the original video

Now consider what happens when your customer plays this video back on his 16:9 television without making any changes to his television's settings. He'll see something like this. The overall video raster has been stretched so that the circle has become an oval. Not good!



What needs to be done is to add width to the left and right edges of the 4:3 video to pad it so that it will look like this on the widescreen television. Now the circle is back to a circle. There are two ways to achieve this result: 1) suggest to the customer that he access his television's setup menu and change its display mode to "4:3"; or 2) use appropriate soft-ware or hardware to add the black "pillars" to the left and right edges;



At the current time there is **no** software application for the Casablanca that will add the bars as shown above. Some pc editing programs, i.e. Vegas 6, can be set to add the "pillars" so that the subsequent output will display as shown here on a widescreen television.

There are also hardware devices that can make the pillarbox conversion but they are not cost-effective for most of us.

WHAT ARE THE EDITING IMPLICATIONS FOR 16:9 VIDEO?

As described in the early paragraphs of this memo all HD video is 16:9 but not all 16:9 video is HD. Most prosumer DV camcorders of today have a 16:9 mode and at least one of the HDV camcorder manufacturers – Sony – includes a capability to create 16:9 video in **either** SD or HD.

What this means is that we can expect to see growing needs to edit and produce 16:9 aspect ratio video products well before the requirement to edit HD video becomes commonplace.

Requests to edit 16:9 SD video can come from customers having both camcorders that produce such video and widescreen televisions. Customers that don't have 16:9-capable camcorders may also request we shoot video in widescreen to better utilize the capabilities of their widescreen television. Such situations are becoming more probable due to the increasing number of HDTV televisions being sold. More are being sold because they are not only becoming less expensive but also because of the of the high definition programming available via broadcast television – over-the-air, satellite, and cable.

The ability to shoot and edit 16:9 SD video can create marketing opportunities that capitalize on the significant number of widescreen televisions amongst our customers. When marketing to potential customers that already have widescreen televisions it should be possible to: 1) charge a premium for widescreen shooting or editing; or 2) use the capability as an "edge" over less knowledgeable or capable competitors.

Editing of HD(V) video on the Casablanca awaits the release of SmartEdit V5.

EDITING 16:9 VIDEO ON THE CASABLANCA

The following discussion is based on the use of SmartEdit V4.x.

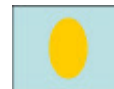
It is quite easy to edit 16:9 video on the Casablanca. You need no special hardware although it is desirable to have 16:9 capable monitor so that you view the video in proper perspective. However, such a display is not required if you don't mind watching the video squeezed horizontally.

The basics.

Here's what the widescreen (16:9) video should look as viewed on the camera's display. The aspect ratio is 16:9 and a recorded circle will appear as a circle. If you use a widescreen video monitor hooked to your Casablanca this is also how the video will look during playback to the monitor.



If you are using conventional 4:3 format monitor for viewing video playback on your Casablanca the playback will look like this. As you can see the raster is squeezed horizontally so that the circle no longer appears as a circle.



Some “pro” video monitors that have 4:3 CRT have a “16:9” mode built-in that squeezes the display raster vertically so that when in that mode the playback of the widescreen video looks “letterboxed” or like this. Note that the black bars are being provided by the monitor. The video itself does not contain these bars.



Any of the preceding display techniques will work for editing widescreen video. The only difference is the visual portrayal to you as the viewer.

Casablanca settings.

There is only one setting within the Casablanca that should be changed during editing of wide-screen video. That is the Format setting is on the Project Settings screen. It should be set to “16:9 Anamorphic”. (The *Progressive* settings are a subject for another day.)

Changing to the “16:9 Anamorphic” mode (which can be done either before or after recording in your source video) **does not** affect your source video recorded into the Casablanca. It changes the following:

- ? The picons of the edit bin and Sb are squeezed vertically so that their aspect ratio is closer to 16:9 than 4:3.
- ? Any graphics or text created within the Casablanca will have the correct aspect ratio when the edited video is displayed on a widescreen monitor. E.g., a Circle wipe will appear as a circle during widescreen playback. (If the “16:9 Anamorphic” Format setting is not used such a Circle wipe will be **horizontally stretched** during playback on a widescreen display.)

After changing the Format setting properly set the editing of the video is carried out as usual.

WHAT ABOUT OUTPUT PRODUCTS?

Even though the source video was widescreen there may be a need to produce both a wide-screen product and also a product that can be viewed on a conventional 4:3 television without distortion. Some customers may have relatives or friends with only conventional 4:3 televisions.

A widescreen product.

After editing the widescreen video a widescreen product can be either an output recording to VHS or digital tape, or onto a Arabesk-authored DVD for display by the customer on a wide-screen television.

The widescreen edit can be recorded directly to a suitable tape format for delivery to the customer with no further processing required.

The same is true for an Arabesk-authored DVD. When the DVD is played back on a widescreen display the Arabesk picons will also have a 16:9 aspect ratio. The only caution here is that any image for the DVD menu background or film picon will be portrayed as 16:9 when displayed on the customers widescreen television. Thus, if the source of that image was originally 4:3 any graphics within the image **will be distorted** (squeezed vertically).

A 4:3-display-compatible product.

It is also possible to create this product from the 16:9 video using the Casablanca. You will need the optional application CineConverter which is part of FX Pack 8. To create the 4:3-display-compatible product you will need to apply CineConverter to the entire storyboard; most easily done by make a Scene of the Sb and applying the effect to the new Scene.

The Cineconverter effect is on both the Special and Image Processing menus. If you made a Scene of the Sb you just select that Scene in the edit bin and then select CineConverter on the Special menu. Set Method to "16:9->4:3" and Interpolation to "On". You can set the color of the letterbox bars as desired.

After the rendering you'll have a clip that plays back on a **4:3 display** looking like this. Note that the video has actually been reprocessed to have the black bars imbedded in the video. You can now record this out to tape or DVD as preceding.



SUMMARY

So... the shooting editing of widescreen (16:9) NTSC video on the Casablanca is possible today using current software. The generation of edited products suitable for display on **either** a wide-screen or conventional television is possible from the widescreen source video.

Normal (4:3) video cannot be currently processed by the Casablanca such that it can be used on a widescreen television without distortion. Such a conversion can, however, be done by most pc editing programs.

All professional videographer/editors should be aware of these opportunities for increased business.

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