

## Anatomy of a SeaChange spot break

For a professional and consistent on air look with SeaChange commercial insertion equipment it important to understand how the system plays spots back and how it looks on the air. It is also important to know how all the networks run their local avails. This is just a brief summary of how I instruct my clients to encode their videos for a professional and consistent on air look. All of these measurements, notes and observations come from MPEG2 analog spot systems. That is SeaChange's line of MPEG2 commercial insertion gear feeding an analog CATV system.

Most of my monitoring is now done by recording the networks on the SA Explorer 8000 set top box/DVR. In the forward pause mode it is possible to step through video recorded on a frame by frame basis.

### ***Rules to encode by....***

- 1) My optimum spot length is 1804 Frames for each 60 second window. This appears to match the most networks out there and completely cover their network spot without cutting into the network video before or after the spot break. As the chart below shows 1804 frames is NOT the length of a properly encoded 60 Second spot.
- 2) The 1<sup>st</sup> 3 frames of a SeaChange spot will never make it to the air. This is a hardware limitation of the decoders in the field.
- 3) Always set the spot length according to chart below. Do not set BOTH Start AND end point

### ***So what's our correct spot length?.....***

Spot Length (seconds)	Encoded Length Frames	Black Start Frames	Content Frames	Black End Frames	Notes
60	1807	4	1802	1	
30	905	4	900	1	
15	454	4	449	1	Results in 1 extra frame each 15" pair of spots.

One 60" spot – Airs 1 frame of Black, 1802 frames of content, and 1 frame of black . (total length of 1804 Frames.

Two 30" spots – Airs 1 Frame Black, 900 frames of content, 2 frames black, 900 frames content and 1 frame black. (total 1804 frames)

Two 15" spots and a 30" spot – Airs 1 frame black, 449 frames content, 2 frames Black, 449 frames content, 2 frames Black, 900 frames content and 1 frame black. (total 1805 frames, 1 frame too long)

***In the real world.....***

In most cases your clients will be providing material of various lengths. Many seem to think 30 seconds means 31 or so seconds. Notifying your clients that a 30 second spot will only air 30 seconds exactly or 900 frames. This will help with some clients but not all.

How to encode 30 second spots with material that is just right or short.

Find the end of the spot and mark the first black frame after the content ends. Set the spot length to 30 seconds and 5 frames. Use encoder to go to the start of the spot with the "go to start" function. Then count the frames of black at the start. In a perfect world there will be 4 frames of black at the start. For every 2 frames more than that you should add 1 frame of black to the end point.

Example of Spot encoding of a spot with 896 frames.:

After marking the first black frame at the end as the end. Go to start . Count the frames of black now at the start. You would find 8 instead of the recommended 4 frames.



figure 1 – spot as it would get encoded by just marking the end point.

There are 4 extra frames of black at the start beyond the 4 required. We should move 2 of those frames from the start to the end. Either re-mark the end at 3 frames after content ends, or mark start at 6<sup>th</sup> black frame before content. Now the encoded spot will look like that shown below.

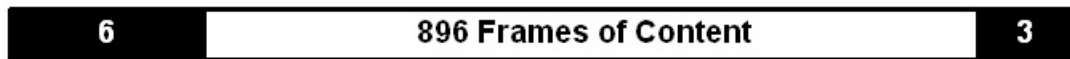


figure 2 – spot as it would get encoded after adjustment.

Below is what the spot looks like when played back through the SeaChange decoders. The first 3 frames of video are never shown on the air. The remaining black is split between front and back.



figure 3 – spot as it is played back from SeaChange decoders.

### How to encode 30 second spots with material that is too long.

Set the end point of the spot the same as you would in the previous example. Find the end of the spot and mark the first black frame after the content ends. Set the spot length to 30 seconds and 5 frames. Use encoder to go to the start of the spot with the “go to start” function. If you find there are less than 4 frames of Black at the beginning, then the spot is too long..

Example of Spot encoding of a spot with 908 frames.:

After marking the first black frame at the end as the end. Go to start . At the start point you will find there is already video there. Step backwards 1 frame at a time, until you find the first black frame. Count the number of frames of video before you hit the first black frame. In this case there will be 4 frames of video before the first black frame.

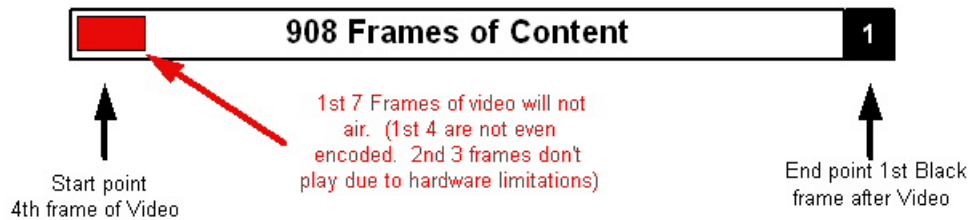


figure 4 – spot as it would get encoded by just marking the end point.

If it was encoded like this, the result would be a spot of the correct length, but the first 7 frames would never play. This is only 2 tenths of a second and may not seem like a lot. A true life example of a spot like this was a bail bond commercial that started out by saying “Not everyone accused a crime deserves to be in Jail”. The encoded version played back as “Everyone accused of a crime deserves to be in jail”. Not quite what the client had in mind.

The decision on how to encode this spot depends completely on the content of the commercial content. One option is to reject the spot have them send it back at 900 frames. This is not always possible or desirable. Most of the time the safest portion of the spot to chop is indeed the start of the spot. The end of the spot usually has a phone number, tag line or contact information. Also quite often the music bed is timed to end right at the end. Chopping the audio at the end of a spot is generally the most noticeable.

For a spot that has a music bed up to last frame and no crucial beginning audio or video should be encoded by marking the last frame of video while making sure the length is 30 seconds 5 frames. This keeps your spot length correct and is generally the least noticeable type of edit.

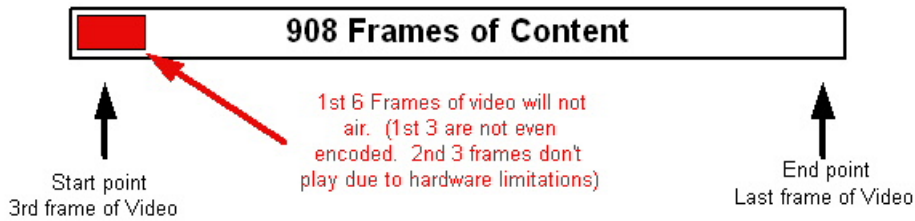


figure 5 – spot as it would get encoded clipping 1<sup>st</sup> 3 frames (1<sup>st</sup> 6 frames will not play)

You could also encode the spot to clip a little off both the beginning and the end. Set the start point on the first frame of video, and the end point on the 3<sup>rd</sup> frame from the end. The result would look like figure 6.

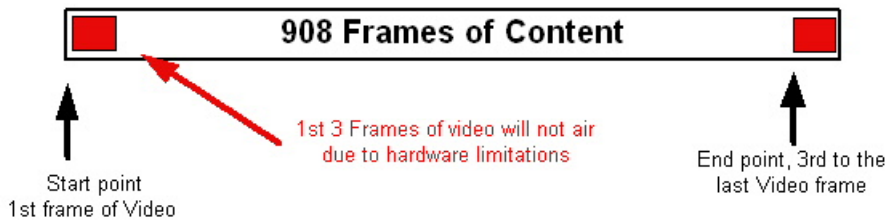


figure 6 – spot would clip 3 frames from the start.

## Summary.....

For a consistent Professional look, always encode spots to an exact length by entering that length in the encoder. Mark either the start or the end, but not BOTH. Do not forget that the first 3 frames of each spot will never make it on air. I recommend the following encoding lengths.

- 60 second spots - 1807 frames
- 30 second spots – 905 frames
- 15 second spots – 454 frames

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