# FilmStrip File Format 1.0

Adobe Premiere 2.0 introduced a new file type: the Filmstrip. Premiere allows any video clip to be exported as a filmstrip. A plug-in module is supplied for Photoshop to allow each frame to be individually painted upon in Photoshop. The format for the filmstrip file is fairly simple, and is described below:

A Filmstrip consists of a sequence of equal sized 32-bit deep images, as shown in the picture below. The channel order in the file is Red, Green, Blue, Alpha. Between the frames is an arbitrarily sized leading area, in which any type of information may be embedded. Premiere puts the timecode and frame number for the frame in this area. This area is ignored by Premiere when the file is read, so the user is free to draw in this area. Following all the frames is a 16 row Trailer area the same width as the images. Premiere writes a yellow and black diagonal pattern in this area. The lower right corner of this area is actually an information record that exists at the very end of the file. This record is located by seeking to the end of the file minus the size of the record, then reading the record and verifying the signature field that it contains.
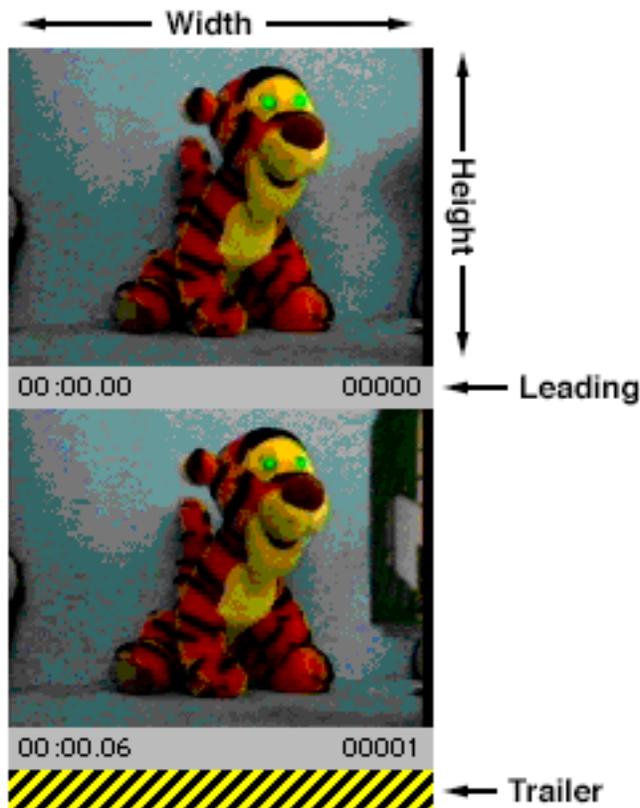

```
//——————————————————————————————————————
// Definition for filmstrip info record

typedef struct {
        long    signature;      // 'Rand'
        long    numFrames;      // number of frames in file
        short   packing;        // packing method
        short   reserved;       // reserved, should be 0
        short   width;                  // image width
        short   height;         // image height
        short   leading;        // horiz gap between frames
        short   framesPerSec;           // frame rate
        char    spare[16];      // some spare data.
} FilmStripRec, **FilmStripHand;
```

The fields are defined as follows:

`signature:` This field must be set to the code 'Rand' and is used to verify the validity of the record.

`numFrames:` This is the total number of frames in the file.

`packing:` This is the packing method used, currently only a value of 0 is defined, for no packing.

`width:` The width of each image, in pixels.

`height:` The height of each image, in pixels.

`leading:` The height of the leading areas, in pixels.

`framesPerSec:` The rate at which the frames should be played.

To locate the filmstrip info record:
Seek to the end of the file minus (sizeof(FilmStripRec)), then read in the FilmStrip record. Check the signature field for the code 'Rand' to test for validity.

To locate the data for a particular frame:
Seek to (frame * width * (height+leading) * 4), then read (width * height * 4) bytes. If the data is being placed into a GWorld, the channels must be re-arranged from Red-Green-Blue-Alpha to Alpha-Red-Green-Blue.

To write a FilmStrip file:
Write each frame sequentially into the file, including the leading areas. Then write a block of ((width * (height+leading) * 4) - sizeof(FilmStripRec)) bytes. Then fill in and write the FilmStrip record to the file.

Note: The `packing` field should currently be zero. In the future packing methods may be defined for filmstrips, so any software which reads filmstrips should examine this field before opening the file.