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From Computer Images to Video Presentation: Enhancing Technology Transfer

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With NASA placing increased emphasis on transferring technology to outside industry, NASA researchers need to evaluate many aspects of their efforts in this regard. Often it may seem like too much self-promotion to many researchers. However, they should first take a long, hard look at how industry promotes itself.

Industry has been in the video production business for years. Upon a close examination of sales, advertising, public relations and training, video is used everywhere. In fact, in many cases, the quantity of outside production has often dictated the need for many industries to build their own in-house production facilities. In marketing themselves and their products through the use of videotape, industries have been educated by film and video professionals to expect a certain level of quality and sophistication. In addition, industry professionals are familiar with current television programs, like NOVA, which reinforce what they know about the state of the art of video. Therefore, anyone who wants to do business with them, must meet on a level playing field by emulating these very same video production standards.

Today the most typical presentation method at NASA is through the use of vu-graphs (overhead transparencies), which can be effective for text or static presentations. However, for dynamic, full-blown color and sound presentations, the best method is videotape. In fact, it is frequently more convenient, because of portability and the availability of viewing equipment. Due to the nature of its ease of operation, both in the recording and playback, coupled with the fact that viewing television is passive, many people suffer from the misconception that creating a video production is also a simple and passive activity.

Although a NASA researcher may not use the same approaches to create a computer-generated presentation as an entertainment program, some aspects are essential for both if they will eventually be viewed on a video monitor. The intended audience must be identified, as this will help to determine the level of technical content, as well as the length of the presentation. A good presentation can be compared to a good story. It has a beginning, a middle and an end. For technology transfer purposes, a researcher should try to introduce the research images, give the details of the research, and review the images and information presented.

When creating the computer images for the presentation, a major consideration is the viewing environment. The size of the space, plus the size of the monitor screen, plus the number of people viewing the presentation should determine the number of screens necessary for an effective presentation. Since the most common videotape used in the United States is still VHS (1/2") NTSC (National Television Standards Committee) format, the computer images will have to meet certain requirements in order to maintain the possible best quality through the transfer process. Although the computer has the ability to accurately reproduce a multitude of colors in intense saturation levels, the video monitor has much more limited capabilities. Primary colors, often the first choice of the researcher, are particularly difficult to reproduce.

Screen composition is another important consideration. At present, video monitors typically have a three by four screen ratio. With this basic horizontal format in mind, a researcher can create more aesthetically pleasing images by following established principles from great artists, including foreground, middle ground, background, balance and lighting. If the image is animated, employing accurate simulation to reality, including initiation, direction, smoothness, and completion are important criteria to follow.

It may take many hours to create and render just one frame of the image, but real time video runs at 30 frames per second. A researcher needs to keep this in mind when generating animations and determining how long they should run. One that runs slowly due to a lack of frames (e. g. 6 fps) will also not run smoothly. It is better to play it more frequently at a faster rate.

Since a researcher may not always be available for the actual presentation, professionally edited audio narration on the videotape can make it an effective stand-alone product. Writing the script before editing the images facilitates matching picture and sound. Although a technical paper of the research may have been previously published, it will have been written for the eye and not for the ear. For this reason, a collaboration with someone trained in writing for broadcast is necessary.

The researcher and the video professional combine to form a unique team, blending the scientific with the aesthetic, where all the necessary detailed steps take shape in a creative concept. This concept ultimately becomes a video presentation at the level of quality expected by outside industry.

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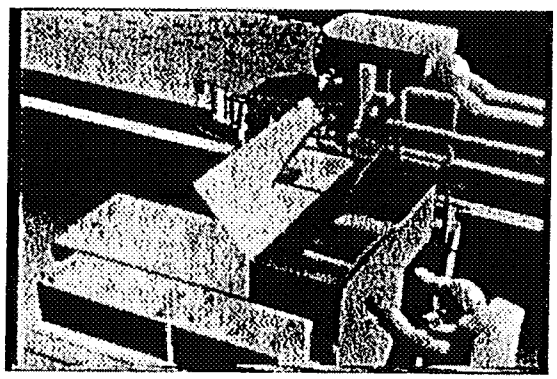
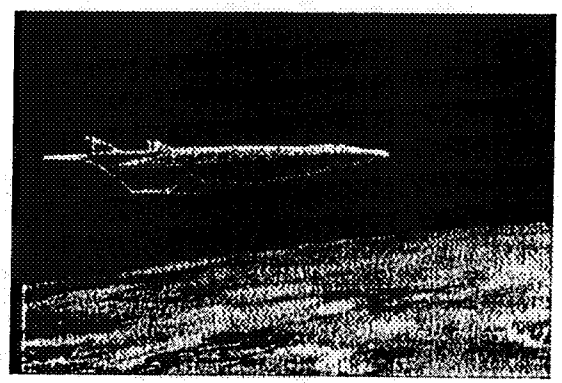
"industry already knows ..."



Lockheed



NOVA

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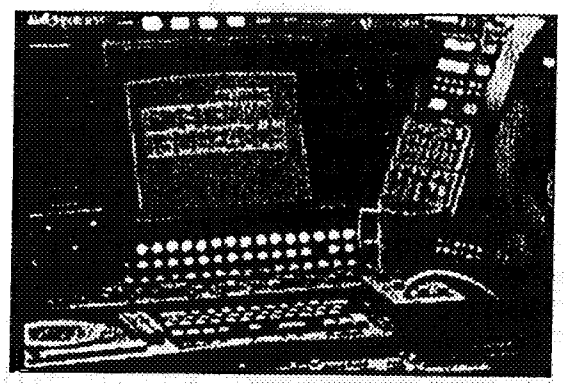
"but this isn't entertainment ..."



"Alien"

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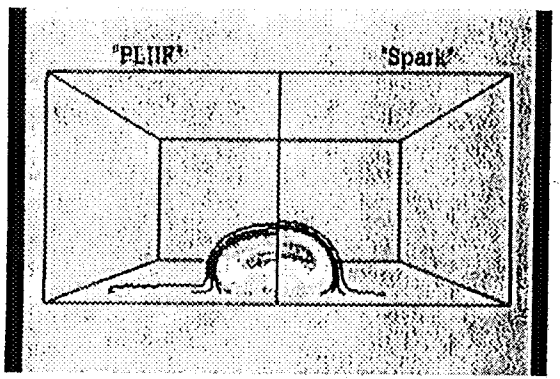
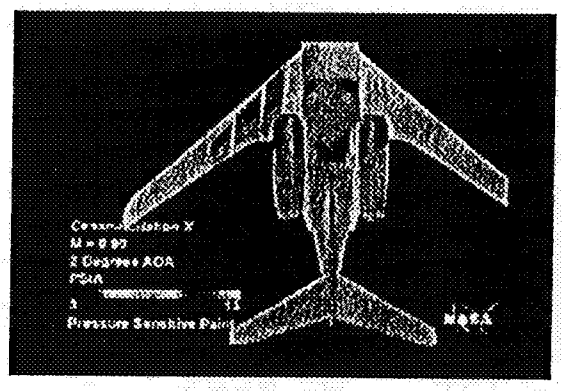
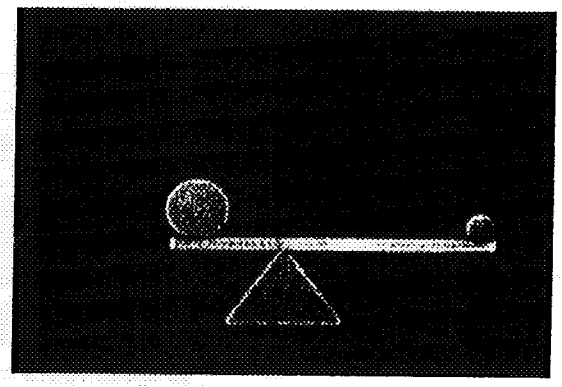
"audience"
"tell a story"
"MOTION"
"color"
"sound"



motion



color



composition

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"the right and left work together ..."