BON VIDE
7 MYTHS ABOU

By Mark Schubin

Video speaks in many languages around the world. Some are related closely enough that a TV set from one country can work in another. In other cases, a TV set may speak the right language, but with an "accent" that leaves the set picking up only the sound or only the picture. Add in VCRs, and you've got a mess.

It's bad enough that international TV standards are a muddle for everyone except some jet-setting technicians. But what's worse is that this confusion has generated misinformation and some confounding myths.

MYTH: There are three kinds of TV in the world: NTSC, PAL and SECAM.

FACT: There are, indeed, three major approaches to the way that color is encoded in a TV signal, and they are, indeed, called NTSC (National Television System Committee, the American system), PAL (Phase Alternation by Line, the West German system) and SECAM (*Systeme Electronique Couleur Avec Memoire,* the French system). But, unfortunately, the situation is far more complicated than that.

Put in the simplest terms, all color TV sets have controls for channel selection, volume, brightness and contrast. In addition to these, PAL sets have color (or saturation) controls, and NTSC sets have both color and tint (or hue) controls. PAL sets don't have tint controls, and SECAM sets have neither tint nor color controls, because they don't need them. When the Europeans were develping PAL and SECAM, they thumbed their noses at the earlier NTSC standard, saying that it stood for "Never Twice the Same Color."

Modern color TV sets work fairly well in any of their systems, but that doesn't mean that a PAL set will work in any country transmitting PAL signals. For example, Argentina, Brazil, Britain and West Germany all transmit PAL color TV signals, but a British set will not work in West Germany, and a videocassette recorded in Brazil can't be played on even the same brand of player in Argentina. Argentina transmits the unique PAL-N, Brazil transmits the unique PAL-M, Britain transmits the type of PAL known as PAL-I and West Germany transmits the type of PAL known as PAL-B (or PAL-G).

While those are the four most popular types of PAL, there are also PAL-H (almost perfectly compatible with PAL-B and PAL-G) and PAL-D (quite incompatible with the other five PALs). The situation is even worse with SECAM. There's SECAM-B, SECAM-C, SECAM-D, SECAM-E, SECAM-G (usually compatible with SECAM-B), SECAM-K (usually compatible with SECAM-D), SECAM-K1 (almost perfectly compatible with SECAM-D and SECAM-K) and SECAM-L. That may not seem worse than PAL until you try to use an old Egyptian (SECAM-B) set in Iran or Iraq (both SECAM-B countries). It just won't work, thanks to another differentiation between SECAMs, called SECAM-vertical and SECAM-horizontal.

(Not long ago, there were two NTSCs, but this author managed, as a consultant, to talk the only country transmitting NTSC-N [Barbados] into switching to NTSC-M.)

Map courtesy Asaca/Shibasoku Corp. of America.

MYTH: You can't use NTSC equipment in a PAL or SECAM country.
FACT: If you've got a portable black-and-white TV set, designed for use in the US, it'll work just fine, with absolutely no modification, in Brazil, a PAL country. The secret? Both NTSC-M (the US television standard) and PAL-M (the Brazilian standard) end in M. That's much more important than whether a country uses NTSC, PAL or SECAM.

Those final letters stand for the international TV transmission systems recognized by the International Consulting Committee on Radio. There are 14 recognized standards, but four of them (A, C, E and F) are dying or dead, and a few others are either completely or partially compatible (the partially compatible standards can make pictures seem a little different from the way a program's director wanted them to look, but most people won't notice). Standards B and G are completely compatible and standard H is partially compatible with them; standards D and K are completely compatible, with standard K1 partially compatible with them.

That leaves B, D, I, L, M and N as distinct standards. Let's have a look at the important differences between these. Every standard except our own M features 625 scanning lines per frame, with 25 frames-per-second. Standard M features 525 scanning lines with 30 frames per second. Let's call that difference "frame rate."

Standard B separates the picture and the sound carriers within a channel by 5.5 MHz (5,500,000 cycles-per-second). Standards D and L use 6.5 MHz. Standard I uses 6 MHz, and both systems M and N use 4.5 MHz. Let's call these differences "sound separation."

Finally except for standard L, all standards use techniques known as "negative picture modulation," and "FM sound modulation." Let's call this difference "L's weirdness."

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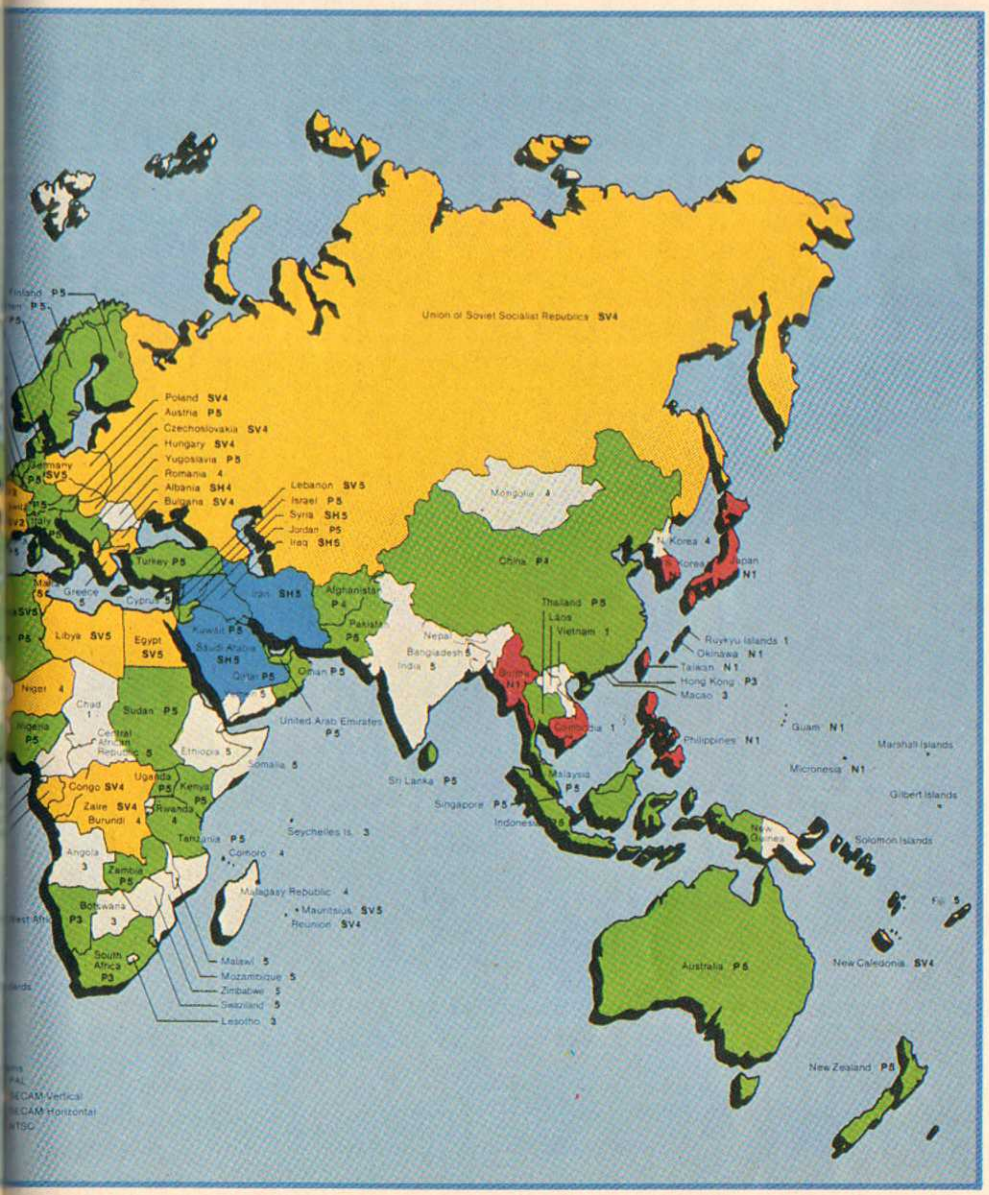

MYTH: A 525-line TV set cannot be used in a 625-line country.
FACT: That set you took from the US to Brazil? Take it with you across the border to Argentina.

Brazil, you will recall, is an M country, and therefore uses the same frame rate as the US, regardless of how its color works. Argentina, however, is a system N country, and, therefore, uses 625 scanning-lines-per-frame and 25 frames-per-second.

If you turn on your US-made TV set in Argentina, the picture is likely to roll badly. So do what you'd normally do when the picture rolls: Adjust the vertical hold. With the exception of some sets that have no vertical hold controls, virtually every TV set can be made to produce at least black-and-white pictures from either 525-line or 625-line transmissions, almost anywhere in the world, except in France (because of L's weirdness). If the picture seems a little distorted, fiddle with the vertical size control, too.

Sound is another matter. In Argentina, you'll hear it loud and clear. In Britain, you won't—at least not while you can see the picture. That's because of the sound separation. Standards M (US) and N (Argentina) share the same kind of separation. Standard I (Britain) doesn't. If you mess around with the fine-tuning knob on your American

set, you'll eventually get British sound (though it'll probably be somewhat dull and distorted, as a result of some other differences between the standards)—but by the time you get the sound, you'll have lost the picture.

There are two alternatives to using a local set. First, a number of travel sets are available with switchable sound separations. Usually these are marked US (4.5 MHz), Europe (5.5 MHz) and United Kingdom (6 MHz). These sets will work fine throughout the Western Hemisphere (except for French islands), throughout Western Europe (except France), and in many other countries. Besides in France and French territories, these travel sets also won't work in many parts of Africa, in China or in any other country using standards D, K, or K1.

If you take along *two* US TV sets, however, or a TV set and a radio equipped for TV sound, you'll be able to watch black-and-white pictures virtually anywhere in the world (except France), simply by tuning in the picture on one set and the sound on the other set or the radio. Nevertheless, you'll still have to tolerate somewhat dull, distorted sound.

MYTH: A "universal" TV set will work anywhere in the world.
FACT: A Belgian company called Barco has been making probably the most universal sets in the world for the longest time. It stands to reason: In Belgium one can easily receive, through an antenna, signals from Britain (PAL-I), France (SECAM-E and SECAM-L), Germany (PAL-B and PAL-G), the Netherlands (same as Germany), and Luxembourg (PAL-G, SECAM-C, and SECAM-L), as well as Belgian (PAL-B and PAL-H) ones. Yet, the most universal set we know of that Barco makes—one that can deal with NTSC, PAL or SECAM in standards B, D, G, I, K, K1, L, M or N—will still not receive certain Australian, Irish and New Zealand broadcast channels, to say nothing of many super-band cable channels in the US.

In the VHF band, the world's channels are an awful mess. There are American channels, Australian channels, Chinese channels, European channels, French channels, French overseas channels, Irish channels, Italian channels, Japanese channels, Malaysian channels, Moroccan channels, New Zealand channels, Soviet channels and United Kingdom channels—and those are just the basics! For example, South African channels are just like Irish channels, except that they start and end with higher frequencies. That's why multistandard television sets are all equipped with broad tuning systems. Fortunately, the UHF band has just three kinds of channels: American, European and Japanese.

MYTH: Your VCR cannot be used with foreign TV sets.
FACT: Forty countries and territories throughout the world use precisely the same NTSC-M television standard used in the US, including most countries in the Western Hemisphere, plus Japan, South Korea, Taiwan and many Pacific islands. As long as you use batteries (power being another story), your VCR will work fine for recording or playing tapes in any of those countries. As long as you don't mind not recording or playing back in color, you can use your VCR in any other standard M country, including that PAL country, Brazil.

Unfortunately, the frame-rate incompatibility problem between M and the rest of the standards does prevent you from recording foreign television broadcasts in other than system M countries, directly on your VCR. There are multistandard VCRs (primarily for professional use), and they'll let you play American tapes, in full color, on a multistandard television set, but even they won't let you record a non-M broadcast for playback on a US VCR.

The solution, if you own a videocamera, is simple: Tune in the program you want to see on a foreign set, aim your camera at the set and record away. You'll end up with a tape that will play on US VCRs. When professionals do it, they call this process "optical standards conversion."

For playing back tapes out of the country, you can hook your VCR into a UHF "upconverter" (the sort sold here to allow you to use an old programmable VCR with cable television channels) and you'll probably be able to generate a UHF channel that can be tuned in on a foreign set. By fiddling with the vertical-hold and the vertical-size controls, you'll be able to make a picture (without color, or with incorrect color) and, if you hook an audio output of your VCR into a hi-fi system, you'll get sound. As an alternative, you can just hook your VCR into one of the new, portable, color monitors.

The same is true for videogame consoles, except that they don't usually feature audio outputs. You can connect a splitter to the VHF output of your game and connect one output of the splitter to the UHF upconverter and the other to a "TV sound" radio. It may seem complicated, but, to a game addict, it's worth it.

MYTH: Multistandard VCRs and TV sets are a necessity for exchanging programs.
FACT: Well, they're certainly convenient, but they cost a lot by the time you get everyone equipped.

Suppose, however, that you take along an extra NTSC-M VCR, TV set and camera with you when you visit your friend, and leave it there. Simple camera/VCR/TV set packages can be purchased from US discounters these days for far less than the cost of a single multistandard VCR. Now, when your friend wants to send you a tape, he or she just plays it on a PAL-I VCR and PAL-I TV set, aims the NTSC-M camera at it, and records it on the NTSC-M VCR. When you send a tape to your friend, he or she simply plays it on the NTSC-M VCR and looks at it on the NTSC-M TV set.

MYTH: Television laws are the same wherever you go.
FACT: Not so. In most countries, it's illegal to own a TV set without having a license for it. In Britain, the annual license fee is a hefty 46 pounds (Sterling—about $70) for a color set; in Italy it's 78,910 lire (about $54); in Hungary it's 720 forints (about $18). In some countries, VCRs require licenses, too.

If you're travelling with video gear, don't risk having your VCR confiscated at customs. Find out what licenses might be required for using your VCR out of the country before you go. To prevent any problems when you return to the US, be sure to register all foreign-made equipment (and that includes every single VCR, regardless of brand) with US Customs *before* you leave. The registration is free, and you can do it at any international airport or customs office, but it does take time.

MYTH: International video is more confusing than the inside of a computer.
FACT: That's no myth, just fact.□