

How to make better videos

Frustrated with the results you are getting from your video camcorder? Make better home videos by following these five simple steps.



That camcorder you got for Christmas a couple years back is in the closet gathering dust. The last time you broke out your videos, friends and family suddenly remembered their urgent dentist's appointments. Every time you view your tapes, you get motion sickness and wear out your fast-forward button.

Sound familiar? If so, you're one of the millions of camcorder owners who have been frustrated by the results they're getting. Fortunately, shooting better-looking home videos is easy; you just need to follow some straightforward guidelines.

Camera movement

If your videos look as if they were shot by a drunk during an earthquake, keep these four steps in mind.

Zoom lenses

Don't get zoom-happy.

Autofocus

Keep your videos sharp.

Using light

Well-lit shots look better.

In-camera editing

Short bursts of shooting will make a more viewable video.

Camera movement

Slow down

Because your head and eyes move quickly while looking over a large area, it's tempting to move the camcorder just as quickly. Unfortunately, this type of movement, called a whip pan, is disorienting to viewers. That's why horror movies and thrillers use it so often. When you pan (move the camera left or right) or tilt (move the camera up or down), do so slowly and steadily.

A good general rule for panning or tilting during a shot is to move the camcorder deliberately and at a snail's pace. It may feel too slow while shooting but won't look that way when you play it back.

Steady your shot

A shot looks far better when it doesn't shake -- anyone who's experienced motion sickness watching *The Blair Witch Project* will testify to that. The best way to eliminate shakes while still having some freedom of camera movement is to use a tripod.

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Tripods come with a pan head, which lets you pan or tilt the camcorder. Just about every tripod has telescoping or collapsible legs and an elevator section, which extends the pan head above the legs. With this feature, you can set up the shot exactly as you would like.

Tripods start at around AU\$30, which will get you a cheap desktop model that raises the camera only a foot or two off the ground. The more expensive the tripod, the more stability it has and the smoother the pan head will be.

Unfortunately, tripods are yet another bulky piece of equipment to carry, and they take a few minutes to set up and break down. If you don't carry a tripod, find a flat, stable surface such as a table or a wide ledge to set your camcorder on. This won't give you a tripod's freedom of movement, but at least your shots will be steady.

Use both hands

If you decide to skip the tripod and opt to shoot handheld, hold the camcorder steady. Image stabilisation is built into most current consumer camcorders. It's designed to compensate for the slight shakiness you get when shooting one-handed with a small camcorder. However, image stabilisation can't fix excessive camera shake, so try these tips for steadier handheld shooting:

- Don't hold your camcorder by the handgrip alone; rest your other hand on the side opposite the grip or on the flip-out monitor to keep the camcorder steady.
- Tighten the handgrip's strap so that your shooting hand is flush against the camcorder.
- Walk and move slowly and carefully, as if you were trying to balance a book on your head.

- **Zoom lens**

Don't get zoom-happy

When used properly, a zoom lens brings your viewers close to the action. Unfortunately, most people with a new camcorder get zoom-happy, moving in and out until viewers feel like their heads are being slammed repeatedly against a wall.

- Zoom should only be used as emphasis, to draw the viewer's attention to something. Constant zooming is like the boy who cried wolf: when overused, this technique is not only annoying, but it also quickly loses its ability to suggest to the viewer that something special is occurring onscreen. Most of the time, it's best to zoom in or out before you start recording.
- **Stand still**
Be careful not to walk with the camcorder or make any sudden movements while zoomed in. The zoom lens is great because it brings the viewer close to the action. But the trade-off is that it amplifies camera movement, so even the tiniest shake looks like an earthquake.
- If you have to move with the camcorder, keep it zoomed out as far as possible and get closer to the subject. If you're standing still while zooming in to get a shot, don't trust either yourself or image stabilisation to hold the camera steady; use a tripod or a flat surface to reduce shakiness.
- **Stay deep**
With a zoom lens, the more you're zoomed in, the narrower the depth of field (the area in front of and behind the subject that is in focus). If you want a shot of your kids standing in front of a monument, be sure to zoom all the way out, then walk up closer to them. If you zoom in, the monument in the background will appear blurry and out of focus.
- **Move slowly**
As with whip pans, fast zooms are disorienting to the viewer. Most camcorders these days have two or more zoom speeds, which are usually selected by the amount of pressure applied to the zoom rocker (the two-way button or lever that activates the zoom lens). The more pressure you

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put on the zoom rocker, the faster the zoom. In most cases, you'll want the slower zoom speed because it's less disorienting.

- **Optical is optimum**

Don't use digital zoom. Ever. Manufacturers try to make their cameras sound impressive by touting the combined effects of both an optical zoom lens and digital technology, which enlarges the image. Like binoculars, an optical zoom uses the lens' optics to bring a subject closer. This way, you don't lose any image quality. In fact, digital zoom has nothing to do with the lens; rather, the term refers to the digital interpolation of the picture already on the imaging chip. This is similar to the process by which you'd make a small image file larger with photo editing software. Unfortunately, as with increasing a picture's size in Photoshop, it won't be long before you start to see the blocky pixels that make up the picture.

- **Autofocus**

- **Stay focused**

Autofocus can be a great convenience, particularly with smaller camcorders where the manual focus usually isn't well placed or easy to use. However, most cameras have a tendency to hunt (focus on one object, then another, then back again) while using autofocus, particularly if there's a lot of motion in the shot.

- Various methods have been developed to compensate for focus hunting. Canon's FlexiZone, for instance, allows you to restrict the autofocus to objects appearing only in the center of the frame. However, there's no guarantee that your camcorder has such a feature or that it will work in all cases. If you have a shot that you're holding for a few minutes, such as a speaker at a podium, it's a good idea to switch off the autofocus.

- **Focus and zoom**

As we noted earlier, when you zoom in on a subject, the depth of field decreases. When the camera is zoomed in all the way, it's likely that the foreground and the background will be out of focus, even when the subject is in focus. As a result, the autofocus is more prone to hunting.

- This can be a problem if you're shooting a table with several objects on it, such as a collection of gifts at a birthday party or wedding, and want to give each object a few seconds as the subject. Nothing ruins a complicated shot such as this faster than having each object go in and out of focus several times. To remedy this, zoom all the way out and step closer to the subject you're shooting. If that's not possible, move the camcorder slowly and carefully so that the autofocus will be able to adjust smoothly.

- **Focus for yourself**

Whenever possible, focus manually. This could be difficult, since the manual focus controls on many camcorders may show up as an inconvenient and tiny wheel on the front of the camcorder or as a secondary option for the zoom rocker. However, it's the best way to avoid focus hunting.

- Here's a little trick that pros use: To make manual focusing easier, activate manual focus, then zoom all the way into the subject. Focus your shot while zoomed in, then zoom out to the shot you want. You'll maintain a sharp, clear focus as long as the camcorder or subject doesn't move out of range.

- **Using light**

- **Use what you have**

When shooting indoors, place your subjects so that they're in the available light. Too many people figure that they don't have to worry about light at all because consumer camcorders record in low light. While this is true, low-light shooting causes colours to come out wrong or barely at all, and the resulting image is grainy, with streaks of unwanted colour.

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- Most low-light camcorders have to increase the video gain -- in other words, amplify the electric current to compensate for a weak signal -- in order to capture the image. The effect is the same as when you pump up the volume to hear a quiet piece of music and pick up a lot of unwanted noise along with the signal. Moreover, your camcorder's lens aperture has to open wider to let in as much light as possible, which reduces the depth of field.
- To avoid these problems, always try to maneuver your subjects toward the available light. Shooting in the kitchen will generally give good results, as will placing your subject near a lamp, a switched-on television set, or a window (if it's light outside).
- **Add extra light**
If your camcorder has a built-in light, use it when shooting indoors. A little extra light can make the difference between a grainy image and a good one. And since built-in colour-enhancement lights emit only 20 watts to 40 watts, shy stars in your home movies won't be too bothered by them. However, colour-enhancement lights aren't much good if your subject is more than six feet away. They also drain battery power, so if possible, use the camcorder's AC adapter and plug into a wall socket.
- **Mix it up**
If you shoot indoors on a sunny day with the lights on, the portion of the shot near the window may look as if it was taken at the bottom of a swimming pool. That's because you're shooting under two different types of light, also known as mixed lighting. Different types of light have different colour temperatures, which changes the amount of red or blue in them. Sunlight, for instance, has more blue than incandescent light.
- To adjust for this, consumer camcorders have a feature called automatic white balance, which lets the camcorder recognise what is white under various lighting conditions. Once white is set, all other colours fall into line. Sometimes, though, the automatic white balance can't decide which white is the real white or chooses the wrong one as true.
- If you're shooting in mixed light, see if your camcorder has selectable white balance options-- usually labeled as sunlight, incandescent, and fluorescent. All midrange and high-end camcorders we've reviewed have this feature. You'll need to make a judgment call about which setting to choose based on where you're filming. For instance, if you're shooting people standing near a window, you'd set the camera for sunlight.
- **Beware of backlighting**
Don't shoot facing a bright light source, and don't make your human subjects face it, either. If you shoot facing a bright light source such as the sun or a picture window during the day, your camcorder will adjust so that the background is well lit, but your subject will look like a silhouette. If you reverse positions so that your subject is facing the bright light, the subject will be well lit, but he or she will also be squinting. You can make everybody happy and get a nice, bright shot by putting the camera at a 45-degree angle to the light source.

- **In-camera editing**

Short and sweet

More than anything else, what makes the average home video boring is that it's just a bunch of long scenes with no point. And face it, you're probably not going to sit in front your computer for hours editing your vacation footage into a masterpiece. Instead, with a bit of discipline, you can

edit your video as you shoot it, catching only those parts that viewers will find interesting:

- Don't introduce people on tape by walking around the room with the camcorder running. Instead, set the camcorder up in a specific spot, then invite everyone to come over and introduce themselves on camera for ten seconds or so.
- Shoot only the highlights of an event. For instance, the highlights of a birthday cake scene are bringing in the cake while everyone sings, blowing out the candles, and maybe cutting the first piece. Shoot that and nothing more until everyone has their cake and is

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settled. By applying this reasoning to all events, you can make your videos more interesting.

- If two people are having a conversation, compose a shot of both of them talking (in film parlance, a two-shot). Don't try zooming in and out or panning around to catch whoever's talking at the moment. You won't be able to keep up, and your camera work will make people seasick.
- If one person is doing most of the talking and the other is listening, you can emphasise the importance of the talker and still include the listener by what's called a favouring shot. This is a camera angle that puts the talker closer to the lens than the person listening but that shows both.

Know when to stop

Shoot continuously only when your subjects are doing something interesting and you can clearly see what's going on. Some occasions, such as people playing a fast-moving card or board game, have built-in excitement. If that's the case, angle your shot so that the viewer can clearly see the action and the participants.

If the activity is repetitive or unexciting, such as washing dishes, try this in-camera editing trick instead: First, shoot a 10- to 15-second shot establishing who and where they are (called an establishing shot). Next, go to a closer angle that shows what they're doing for 20 seconds to 30 seconds (cutaway). Then go back to the establishing shot for 10 seconds to 15 seconds. You can repeat the series a couple times, slightly varying the cutaway and establishing shot angles, until you feel you have enough of that scene. Then leave it be.

Tell a story

While nobody expects you to be Orson Welles, viewers are more likely to keep watching if they feel the video is telling a story; that is, it progresses logically from beginning to end. If you know what the video story is going to be, you can shoot the necessary scenes and skip the rest.

If you're shooting an event video such as a birthday party, it already has a preimposed story: guests show up and congratulate the birthday boy/girl, the birthday cake comes out, gifts are opened, then the guests play games or socialise. It's hard to go wrong if you keep that in mind while taping quick shots.

Vacations are also event videos, since most of the time, they tell the story of a journey to a specific place, such as Disneyland or the Grand Canyon. It's just that this event often takes more than one day.

If you're doing a video about family or friends in a nonevent situation, come up with a series of mini movies that tells viewers something about the participants. For instance, do you have a brother who likes fixing cars? Shoot him while he does that, explaining what he's doing and why. If you have children, show them playing their favourite game, colouring, or learning to walk.

With a little practice, all these tips can become habit. You'll be able to bring your camcorder along and document the important events in your life and have a viewable product in the end.

Using Television for Christian Ministry

by Dr. Dale A. Robbins

Television is a marvelous thing. We rely upon it for most of our information, news, and entertainment. It has also played a big role in the distribution of the Gospel around the world. We can all probably recall well-known ministers who influenced our Christian lives by the means of television, whether it be such personalities as Billy Graham or others.

However, today's television technology is not something reserved only for the use of such big-name evangelists or mega ministries. The advancement of technology has brought the marvels of video production within the reach of the average church or ministry. This electronic medium is being used effectively by all kinds of Christian groups, both large and small, to communicate the message of Christ.



Dale A. Robbins

This writing is intended to be a brief introduction to the field of Christian television, to educate ministers and laity to its basic concepts, and to help facilitate a vision for broader methods of communicating the Gospel and meeting spiritual needs. Its author is a pastor who has many years of experience in broadcast ministry, and in the technical aspects of television production.

Understanding Video Standards

Before getting involved or investing in video production equipment, it's important to understand the three different quality standards for television video.

Consumer Video - This refers to home video cameras and equipment. These cameras, camcorders, though very good, generally possess low quality and resolution, while the VCR format consists mainly of the VHS or 8 mm tape standard. While not designed to be used with a multi-component video system, and not suitable for broadcasting or cablecasting, consumer video can be used for dozens of in-house church productions or uses. Some of the better quality consumer devices are sometimes used in conjunction with other equipment for basic quality cable TV productions.

Industrial Video - This is a step up in quality and performance from consumer equipment. The cameras and equipment are built for use in industry, education and cable TV projects. The cameras and video resolution are higher quality, more durable, and are made to interface with the various processing components, editing equipment, etc., of a full-blown video system. U-Matic 3/4" inch was formerly the standard video format, but with the advent of S-VHS and Hi 8 now used for industrial purposes, quality has improved to near broadcast specs. The gap between industrial and broadcast video is shrinking because of the ever advancing technology.

Broadcast Video - This is the high end of video cameras and equipment capable of producing "broadcast quality" images for transmitted pictures. Broadcast quality generally refers to the capability of producing video of high resolution quality, accurate NTSC color reproduction, and clean low noise (distortion) signals and images. The tape standard for broadcast consists mainly of the newer formats of BetaSP, BetaCam, S-VHS, but many stations and studios still rely heavily on the older 1" reel-to-reel tape format.

Video technology continues to advance rapidly as new components and products are developed. These

developments have affected all levels of video equipment. For example, the video CCD is one of the newer revolutions in the camera technology. The "charged coupled device" replaced the old video tubes from which cameras used to receive visual images. The CCD's are more reliable, heat resistant (the biggest problem with tube types), require little maintenance, and are even less expensive. The CCD is now used in all manufactured TV cameras, from consumer to broadcast, and has generally elevated the quality of all cameras, including the low end devices. It is believed that as technology progresses, the day will come that there will be little difference between the quality of consumer devices and professional equipment.

Some uses for Video in a Church

Televising Services -- Video can do a lot of things to help the ministry, but this is the most obvious use in relationship with a church. The presence of a local church on television is a powerful tool of evangelism, and is an effective means of marketing the church. Not only can the general public be ministered to, but making the videos available from a lending library can be beneficial.

Technical Training - More and more churches are beginning to use video tapes as a source for training purposes. Professionally produced tapes are available for training in business management, computers, software programs, sound system operation and even video operation. The great advantage of video training, you can visually show a person "how" to do something while explaining it. By recording it on video tape, your instruction can be played repeatedly until it is understood, or used over and over again for many trainees. One church considered making a video on "How To Paint Neatly" for the volunteers who wish to help in church maintenance. We produced a tape for TV operation and setup, so that volunteers could play it repeatedly to study the complex instructions for calibrations and maintenance.

Inventory - Many insurance companies request a video record of a church's inventory and possessions. Having your own equipment and doing it yourself makes it possible to update your inventory as often as you add things.

Fellowship or outreach - Some churches have a movie night. They show their favorite Christian video. Sometimes they may show some of their home or church videos (and bloopers), a great way to get people to know each other and interact. Videos on various subjects are tremendous for bringing in guests, a great way to reach your community.

Bible teaching/Church membership - Many churches now use video for their church membership training or Bible studies. Due to the increased complication of personal schedules, this is a great ministry. A video library of services or subjects makes use of effective ministry for many years to come.

Community Access Cable Television

If you live in an area which has cable TV, the local cable company has a channel which is reserved for "Local Community Access." Federal and local laws stipulate for cable companies to allow access to such channels at no cost by persons or groups capable of producing TV shows. This can be virtually any local not-for-profit organizations, churches, or individuals.

If you have ever seen community access shows, you will realize that one does not have to be a professional to produce such programming. The cable company is required to provide the access, the equipment, and basic training to qualified persons or groups seeking to make a show. Many of these programs are very amateurish in their technical quality and content. But some are produced very well by persons with a more serious attitude. Several well-known secular and Christian broadcast TV programs began with community access and did so well, they eventually were promoted to broadcast TV.

This was how my church and I first began in television ministry — through cable community access. We started out by using the cameras and equipment at the cable station. Eventually our congregation became so enthused about the program, they raised the money to buy our own equipment. By having our own TV cameras and editing equipment, etc., we were able to become more proficient and experienced in the art of television production. We no longer had

limited access to TV equipment and didn't have to share it with other programmers. Despite the fact our program was a Christian show, it became the number one rated community access program because it had better technical quality than the rest — and it played a lot of upbeat music and singing which the audience enjoyed. Eventually a local Christian TV station learned about our program and asked if they could air our show several times a week. For many years thereafter, that Christian station (which was one of the largest Christian TV markets in the U.S. and grew to a network of stations) sponsored the airtime for hundreds of our TV shows, for a worth of many thousands of dollars.

One paragraph makes it sound easy, but I should add that I had earlier experience with TV ministry and had gone to college for TV broadcast engineering. Together with this basic knowledge, along with several teachable volunteers, a lot of hard work, and the all-important anointing and blessing of God, our church was able to pull off something (quite well) that many said would be virtually impossible. We produced high quality TV shows which had the potential of reaching millions of households the Gospel of Jesus Christ — and for a very small financial investment.

Broadcast Television Elements

Television production is the art of communication using video and audio. In television production, there are two major components which make up a TV program:

(1) The Technical Production - This is the skillful operation of the sophisticated hardware and technical apparatus, to capture a presentation and deliver it to an audience with high quality.

(2) The Production Content - This is the program itself, what it is about, how and what order it is presented. This is the drama, music or preaching that is presented for the purpose of being captured and conveyed by the technical means of television.

For some TV shows, the content might be well presented, fascinating and interesting, but the technical production might fall short in delivering this well to the audience. Perhaps poor lighting, improperly mixed audio, shaky cameras, inappropriate camera angles or selections may distract an audience from appreciating the content.

For other shows, perhaps the technical production is superb. The lighting, sound, camera angles are just perfect, but the program lacks in content. Perhaps the preacher was not well prepared or did not deliver his message well — the interviews didn't make the intended point or the misaligned segments didn't make sense.

A Philosophy of Christian Television

There are many different philosophies in working with Christian Television. In secular TV, the technical production shares an equal priority to the production content. If either are poor, it may disqualify a program from being aired. Further, the idea is that people won't watch if the technical quality isn't perfect or packed with similar effects as other competing channels. This may be true... some will not watch. However, if Christian television is a "ministry," it shares the same common denominator with all other ministries — we have to trust for God's anointing to rest upon our best efforts and trust for Him to bring the viewers and produce spiritual results.

I certainly do not endorse inferior quality or a lack of excellence, but we do not necessarily have to compete with TV network quality to reach souls for Christ. We want to be as professional as possible, but must avoid a spirit of "professionalism" that seeks to exalt quality above that of the anointing of the Holy Spirit. After all, was everything always perfect in the church you got saved in? Was every singer or musician perfect with no sour notes? Did everything always go smoothly and perfectly as in an edited TV show? Of course not.

Sometimes professionalism tends to lessen the impact of believability, while imperfection lends toward credibility — the personal touch or sincerity. For instance, if I send personal letters to the members of my congregation, perfectly typed on beautiful letterhead stationery, it doesn't have the same response as my personally handwritten note with my poor handwriting.

Years ago while serving in campus ministry, I learned quickly that professionally produced color tracts and pamphlets were not well received or read by college students. Why? The students were used to every religious group coming on campus with slick publications to promote their beliefs. We found, however, that if we produced tracts or materials with poor quality mimeograph printing, the students readily accepted and read the tracts. Why? Because the lack of professional quality led them to think that this material was a local product by some sincere, common person — not some big religious establishment. They tended to put more credibility in the simple, but adequate publications, instead of the more impressive four-color booklets.

Create programs with the best quality that you can, with the best equipment you have available, but do not buy into the lie of Hollywood and glamour. Professionalism isn't what wins souls or touches lives. The anointing of the Holy Spirit is! Yes, even on television, just as in your local church, the content, sincerity, the message of Jesus, and the anointing is more important than anything else.

Ministering on Television

When watching a news anchor on TV, it looks so easy for them to look into the camera and communicate. Perhaps for the news anchor it is somewhat easier because 95% of everything they report is being read directly off of a teleprompter placed in front of the camera lens. A teleprompter is a TV monitor which displays a reverse image of text, upward onto a clear piece of glass in front of the camera lens. The glass is angled so that the subject can see the reflection of the monitor text, but the lens can look through the glass without detecting the text image. Thus, as the news reporter appears to look directly into the camera lens, they are actually looking at the angled glass in front of the lens which displays the reflected text of the news which they read to the audience.

However, for someone who is not just merely reading a script, communicating in a warm, personal way to a TV camera is a challenging art. A TV camera is a cold, mechanical device. It does not inspire a person to communicate in the same way that a live audience would. This is why many TV shows are performed before a studio audience. The life of the crowd sparks enthusiasm, encouragement, humor, and sensitivity. This is the easiest method of ministering on TV — for the cameras to simply capture ministry as it is directed to a congregation, instead of the preacher speaking directly to the cameras.

Ministering directly into a TV camera is sometimes very difficult, requiring faith and the ability to imagine people watching you from their sets at home. The TV subject has to be a visionary — he must be able to view the camera as a “window” through which thousands... even millions are looking in at him, and this must inspire him to emanate his personality and warmth as he communicates. Making things more complicated, the studio environment may have a lot of other busy, potentially distracting activity going on beyond the view of the camera — technicians talking, working, walking about without regard to your presentation. This, combined with rigid time limits which require precise conclusion of sentences and thoughts at certain intervals, and visual signals by a floor director, tally lights on the cameras (which show which camera is selected), etc, makes it difficult for a person to remain natural, at ease, and free flowing.

We must remember that TV is an audio/visual means of communication. Not only is the content of your message important, but what the audience sees is also crucial. We must avoid merely becoming a “talking head,” a term used to describe someone who's head and shoulders are viewed on the screen while they merely read or speak, such as a newscaster. The TV should capture more of the visual perspective of your body language, hand motions, etc. Slides, video footage, etc., can be used in addition to illustrate your message.

What you need to make TV

It is possible to use a single camera to make individual video segments which are edited together later to make up a whole show. Movies are made this way. A single camera films individual sequences which are performed for the camera. Many of these segments are filmed and later spliced together. Many interviews with people are done in this manner.

However, if you wish to capture a live, real-time presentation, such as a church service, one camera would not be sufficient to produce good quality results. A single camera would be as dull as a surveillance camera at a convenience store. A minimum of two (preferably three) switchable cameras would be necessary to present different camera segments — angles, distances, images of the audience reaction, etc. A “technical director” constantly watches monitors from both cameras, directs the camera operators through headsets, and will switch from one camera to the other as it is appropriate. While the live picture of one camera is on (airing its image or recording to videotape), the other camera, not presently selected, will be setting up for an appropriate shot. By trading back and forth from one camera to another, this allows one camera (not on the air) to set up a different shot while the other is on the air. Thus, the audience never sees the jerking or erratic movement of the camera as it moves from one scene to another. This method produces even better results when a third camera (or more) is available for additional shot options.

Of course, cameras alone cannot make good pictures. Proper lighting is essential to make good pictures. Incandescent or fluorescent lights are not suitable for TV. Bright, quartz halogen lights (which produce a “white” light) are required for indoors — they must be bright enough to illuminate the video subject to 100 IRE units on a waveform monitor. (Sunlight is bright enough, but other lights are sometimes needed outdoors to remove shadows and create other effects.)

Lighting for an individual subject, such as an interview, usually requires at least three lights sources. (Proper lighting for large areas with multiple subjects is fairly complicated and usually takes pro consultants to initially get things right.) TV lighting is generally configured from three directional sources. A harsh (undefused) key light which faces the subject head-on from 90 degrees above, a soft (defused) fill light to the subject’s right at 45 degrees above, and a harsh backlight behind the subject, 90 degrees above.

The Basic Equipment

Cameras - You will want to select a CCD equipped camera, with the highest resolution, quality and features that you can afford. For multi-camera productions or in a facility, you will need a camera equipped in studio configuration — with an attached monitor, tally light, remote controls, communication headphones, and tripod. A stand-alone camera, with its own VTR for mobility is referred as “ENG,” (Electronic News Gathering). A tripod is an extremely valuable piece of equipment, providing a steady, stable platform for the camera — it should have a “fluid head,” that is the movable part on top, where the camera attaches, should be the type that is filled with a hydraulic fluid which causes movement to take place smoothly, without snags or jerks.

Monitors - Individual TV sets which are used to observe the activity of cameras, the actual program, and other video activity. A control room will need many of these.

Vectorscope and Waveform Monitor - These essentially are oscilloscopes which measure video signals so that calibrations can be performed on the cameras and equipment. A control room needs at least one set of these.

Switcher - This allows an operator to switch between cameras, sending the selected signal to a VTR or transmitter. This device will usually do a variety of other things, such as allow switching with special effects, such as wipes, dissolves (gradual phase from one camera to another) or cuts (instant selections to other cameras). A switcher may sometimes also be self contained with other important features, such as headphone amplifier, sync, color bars and black signal.

Sync generator - This is a machine that emits timed signal pulses which serve to synchronize the other components of a TV system. All video equipment connected together in a system must be locked together with sync. Cameras cannot be switched back and forth without sync, otherwise the picture would flutter and roll. Home video cameras and equipment is not designed to be synchronized with other components — only broadcast or industrial.

Color bars/Black signal - This is a generator(s) to produce color test signals, and/or a black reference signal, so that an engineer can calibrate the subcarrier phase (color information) and other references of a system.

Lighting - For simple productions, a minimum of three halogen light sources with stands or mounted from above would be required. Dimmer controls are preferred to control intensity. For larger productions where an entire stage or multiple subjects are televised, lighting will become somewhat complex, and should rely on the consultation from a professional.

Character generator - This is a computer with a keyboard which allows an operator to place text on a video screen, either superimposed or against a color background. It will perform other various options such as scrolls or rolls.

Mics - Handheld mics may be used, but small lavalier mics will be best for many TV productions.

Audio mixer - This allows the volumes of different audio sources and mics to be blended together for desired results.

VTR - A video tape recorder is needed to record your programming footage. This should be of the highest quality format as you can afford — S-VHS, BetaCam, S-VHS, etc.

Editing Equipment - For post-production, a basic editing package would consist of two VTR's: A source machine and a record/edit machine. One can be the same used for recording programming, and one must be an edit VTR, equipped with flying erase heads. Together with an edit controller, and an audio mixer, this can perform basic edits called "butt edits," or "cuts." More elaborate edits with special effects and dissolves are referred to as A/B roll editing, and would require three VTR's: two source machines and an edit machine. A CG and special effects device is desirable to be used here. Best results are obtained when VTR's are supplemented with machines called "Time Base Correctors" which help to compensate for the varying speeds of the VTR motors, which can cause severe loss in quality. TBC's are built into many of the newer edit controllers.

Also, computer technology has brought about the creation of such editing marvels as the "VideoCube," a manufactured product of the Imix Corporation, which facilitates computerized edits from programming downloaded from video tape onto huge hard drives. The edits are performed in a digital environment without the need for multiple VTR's or time base error equipment, and eliminates the one or more generation quality loss that is normally experienced through conventional editing. Similar editing products are rapidly emerging that interface with a typical PC computer, which will produce high quality results, bringing the reality of serious video production with reach of the average user.

In conclusion, the marvels of television continue to astonish us all. With the recent appearance of mega-channel satellite systems, and the coming era of High Definition Television, we can see that the video revolution will continue to play a prominent role in our future. Television is simply a tool — one that can be used for either good or evil. So let it be the determination of the church to use this, or whatever means God has placed at our disposal, to do good... and to further the life-changing message of Jesus Christ to our world.

Library of Church Technology

- [Church Sound System Operation](#)
- [Using Mics for Ministry](#)
- [Tips for Church Sound Mixing](#)
- [Using TV for Church Ministry](#)

Links For More Video Information

http://www.internetcampus.com/tvp_ind.htm

<http://www.video101course.com/>