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Film/Video Stereo-Surround Sound Recording Systems

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2010 DIGITAL STILL FLASH CARD CAMERA UPDATE

I started this page nearly 10 years ago, and camera technology/costs/features have evolved to include much more abilities/features/quality for a lot less cost. Case in point is the still flash memory card cameras now with ability to record High Definition (HD) 720P video in a shirt-pocket size 10 megapixel camera body sporting full optical stabilization, 25-310 mm (+12X) wide zoom lens of excellent quality, and even stereo microphones (not very good ones, but there they are on the camera topside!).

My current favorite having these mentioned abilities is the Panasonic Lumix DMC-ZS3 (Not the latest model) selling for <$250 USD. Of course these still cameras cannot replace a true camcorder in features/long uninterrupted run-time ability, but are at least handy for amateur/professional documentary purposes. The real advantage of having such compact gear is the fact they are most conveniently carried everywhere *without* the usual preparation of slightly larger, more power hungry configurations.

And can consistantly produce astonishing excellent project material when coupled to equally compact 24bit/96K audio flash deck compatible to working my (usually headworn) DSM stereo-surround mic. Excellent newsgroup Lumix DMC-ZS3 discussion *(with guysonic posts)* at: http://taperssection.com/index.php?topic=128695.0;all

Sony PCM-M10 is latest unusually small audio deck with direct ability for DSM mic plug-in-powering. I have tested/found the M10 excellent, with very low noise audio recording quality.

So a good companion to fit into the other shirt-pocket providing the stereo-surround (for video) audio.

No longer many good excuses not to afford, or to leave such audio/video outfits at home.

Now, even with spare flash memory/batteries, camera, deck, and mic fits into (1)one explorer type coat side pocket. Or operating at chest level if worn like a necklace POV documenting interviews, tours, or walks with headworn DSM mic recording audio exactly as heard.

Excellent newsgroup Sony PCM-M10 audio deck discussion (with guysonic posts) at: http://taperssection.com/index.php?topic=130924.195

2010 DIGITAL CAMCORDER FLASH CARD CAMERA UPDATE

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As with the still cameras, camcorders have also evolved to be smaller, far less power hungry (talking flash card types), and with before missing audio input, VU metering, and manual audio level control features now appearing in < $2000 usd models.

Audio frequency bandwidth, distortion, and mic level noise is still a major issue. Audio shortcomings are still an issue on most prosumer cameras in the <$5000 usd range, but still finding Panasonic camera models having consistently far better audio than most other brands.

It still remains a good tact of buying a *less costly* camcorder with excellent video features, and also with poor audio quality/feature shortcomings.

Then using only a fraction of money saved on having a full featured production camera + external conventional mics, and other outboard audio gear catering to the camera audio inputs, instead purchase a dedicated external microphone + flash recorder for having excellent state-of-the-art audio at a small fraction of the usual expense, and likely also be far more easy to use, power, and still get more usable project recorded audio than most working in the field using the conventional approaches and gear configuration.

Anyway, this is what I've come to realize working at a semiprofessional level.

Introduction:

Most all professional, prosumer, and consumer grade portable video cameras have external mic input jacks. The larger professional cameras are usually not supplied with mics, but most users usually shoe-mount an external mic of some kind. The smaller video 'camcorders' usually include internal or externally mounted mics.

The fact is, most all camera mounted microphones, whether selected by the user or included with the camera, record moderately OK to mostly not OK at all video sound. Even if the external mic used is of high quality, the 'too-close-to-the-camera' mounting makes any mic highly susceptible to also recording clearly audible camera handling/motor noise that is distracting during quieter moments. Camera noise is too easily *mechanically* conducted from the 'camera-to-mic' mounting AND directly through the air into the mic. Using an external microphone of sufficient quality working at a greater (> 12 inch) distance detached mechanically from the camera mostly solves mechanical/acoustic vibration noise issues.

NOTE: The newer 'solid state' cameras that use flash card storage are inherently quieter with hanving NO noisy motors moving tape or spinning mechanical components.

The introduction of handheld 'STEREO AUDIO' cameras raised expectations with the promise of more satisfying REALISTIC sound with the video, but this in reality has not been the case, especially true with the camcorders that include internal stereo mics. Even the external mounted stereo mics record disappointing low quality (stereo) sound that is not much better than the earlier mono-sound cameras. The advent of MiniDV 3CCD professional quality cameras with extraordinary video has made more important than ever the need for equally breathtaking microphone recorded sound.

The short of it is that we have raised our expectations of what quality stereo sound with digital video should be about (i.e., the commercial release of surround-sound feature films) only to find that microphones as supplied by the camera or common microphone suppliers can't even come close to providing. The video quality is now better than ever, but the (now 'CD Quality' digital) audio still mostly sucks big time!

Fortunately, Sonic Studios has the only really practical solution with HRTF baffled DSM stereo microphones that easily record 'Lucas-quality' stereo-surround sound with virtually any stereo sound camera that has an *external mic input jack!

**The EXTERNAL MIC jack is a mostly supplied feature on camcorders to connect a higher quality external stereo microphone to the camera; auto-disconnecting the internal camera mic when present.*

The best cameras for this purpose also allow Full MANUAL REC Level setting options. Manual record level is found only on very few camcorders until last few years. Canon Model XL-series & GL-2, Sony TRV900 & PD-150, and Panasonic *AG-EZ30 were first of the earlier available models, and recent 3 CCD top-of-the-line prosumer models were the few allowing partial and/or full manual MIC input level control of the audio (most recent models with manual audio now have VU metering indication) for recording full 'dynamic' of live sound in clean controllable manner.

**After many years of digital stereo-sound camcorder research, the Panasonic 3CCD 'prosumer' models seem the most consistent for getting exceptional video and audio quality that will not disappoint the most discriminating video-audiophile and/or professional videographer who must often work in demanding field environments with a minimum of equipment.*

Other makes of higher-end camcorders seem to at least limit the ability to record the full 20-20,000 cycle audio bandwidth expected of cameras boasting of having 16bit/48K better than 'CD quality' audio. Instead, these makes offer mostly 70-to-less than 15,000 cycles bandwidth through the external MIC jack connection!!

While the LINE level inputs of these cameras usually do offer better or even full 'CD' quality 20-20,000 cycle bandwidth, the LINE input is consistently OFF LIMITS while in camera mode; quality LINE level audio recording is only available in VCR recording mode.

Fortunately, a handful of +$2000 priced smaller pro-sumer models have appeared in last couple years allowing LINE audio input recording with camera recording mode.

The suggested system shown (at left) is just one of several stereo microphone/camera systems possible using the DSM microphone.

The LiteGUY mounted DSM-6S/H model mic was chosen for versatility recording a wide variety of subjects. The three sectioned Fishpole can extent from <5 foot to >10 foot height and allows a low weight (about 8 pounds), all terrain, and camera-stable carrying platform.

' PROTO' FISHPOLE VIDEOGRAPHIC RECORDING SYSTEM

The Sonic Studios VideoStick*(TM)* shown is a prototype and *good example* of a complete Real-time 3-D Surround-Stereo-Sound videographic system.

The 'walking stick' platform is all-terrain practical for rural/nature (functions as a hiking stick) and urban filming projects.

The 3 telescoping section fishpole boom and mic/attenuation cord lengths allows both microphone and camera about 1-2

meter distance or height adjustment.

The top telescoping section is outfitted with a bicycle handlebar type soft-foam grip just below the LiteGUY baffle for comfortable shortened stick handling and stationary grip. When extended, the mic and camera are capable of unobstructed 'periscope' type views over crowd heights, recording full stereo-surround sound at the camera position.

Component	From-To Connection Path(s)	System Function(s)
Digital MiniVidCam	External mic (system) directly into camera's MIC or *if using* mic+preamp, use LINE input	Live camera video+stereo-surround sound camera recording. *(camera not supplied) Alternative is using dedicated deck for post-edit' addition of audio to video time-line.*
LiteGUY	Mounted Between Fishpole & Camera Moun	LiteGUY HRTF Baffle for Mounting DSM Mics
DSM +WHB/N	Stereo MIC to camera or deck ext. mic jack	Headworn or HRTF baffled Stereo-Surround Mic + windscreen works indoors/outdoors in winds/rain. Requires at least powering module/preamp.
Dedicated Deck	Stereo Mic > (optional preamp) > deck; deck LINE output into camera external LINE, or use -35dB ATTEN patch for camera's MIC input	External audio recording deck with better quality, and more needed features than found on most cameras. Deck audio is later added to the video post edit timeline.
35 db ATTEN Patch Cable	External deck/preamp LINE level output to camera EXT MIC input jack	Ministereo plug patch cable converts deck/preamp Hi-Line level output by ~33 dB producing compatible external mic low-signal level
BC-1C	4 C Cell Alkaline Battery to DAT External Power Jack	Same as BC-1 *with different case*; Powers PCM-M1 DAT Deck for +25 Hours on 4 regular Flashlight Cells + Houses the DAT deck in a separate padded compartment
Mechanical Components		
MT-CM Adapter	5/8" Mic Thread to Quick Release Camera Mount Adapter	Attaches to the Standard 5/8" Mic Thread on top of the LiteGUY and provides a Quick Release MiniCAM Shoe Mount for attaching any small video camera

LT-MT Adapter	Fishpole 1/4"-20 Thread to 5/8" Mic Thread	Adapter for Attaching MG-FP Fishpole 1/4"-20 to LiteGUY Bottom 5/8" Mic Thread
MG-FP	Telescopic Microphone Fishpole with Modified Grip to LT-MT Adapter	The Portable Boom-Pole Platform for Mounting,Carrying, and Deploying the Audio/Video Recording System
Optional or Alternative Components		
WHB/N	Attaches to the LiteGUY Baffle Mic Mount	DSM Windscreen for Practical Audio Recording in Light Breezes to Strong Winds
MT2496 Flash Deck	Higher definition *(24bit/88.1-96K wav)*, more featured than camera or Edirol R-09 deck	Excellent balanced LINE input performance, mostly with using PA-24NJ series external DSM mic preamplifier as shown linked in the review or similar external LINE level input.
MDR-SA5000	Mastering quality 8-110,000 Hz open-air phones	Live Monitoring or Post Sound Check of Audio Sound & Imaging Quality

SONIC-CAM

Compact Camera Stabilizer for under 2 pound weight Camcorders

~~SONIC-CAM II $150 USD+Shipping~~

These are photos of a field tested prototype . This version works very well and is very compact for working crowded spaces.

Version SONIC-CAM™II has a slightly longer adjustable axis arm for increased vertical stability.

BUILD YOUR OWN SONIC-CAM™

Easy to construct with having a little helpful knowledge or mechanical feel for weight/balance physics.

I fully encourage any who might like to make YOUR OWN PERSONAL camera stabilizer. Easy to find parts comprise of weighted mic stand, camera mount, bicycle handle, or any suitable components of your own choosing.

Request NOT naming any such *product offering* as a SONIC-CAM™

(NOTE: SONIC-CAM™ NO longer available; less needed as many cameras now have effective optical stabilization, but if running older camera or require extra-smooth handling, maybe build your own, or ask a handy friend to make similar stabilizer for you)

Please Call or E-mail anytime with questions about video mic systems suitable for your requirements.

Click to find us on YouTube!!!

FAQ Section

Video cameras record both picture *and* sound. Camera picture quality and features supporting video processing comprise *over* 95% of what's inside.

As such, at least in recent past, many noticed very little attention-to-audio quality/features on most semi-pro/full pro mini-cameras. My experience is with Panasonic brand being the exception, caring more about audio quality than most making similar camera products.

Difficult to keep up with latest camcorder models for knowing audio quality/features. Current trend shows newest models with needed audio quality/features appearing at far lower prices. Two *(now a bit dated)* email discussions below cover some basics.

At right are just a few www.taperssection.com discussion links pointing to recent topics. Much more available about audio for video interests on this and other discussion sites

Rugged camcorder

Mic in-possible?

Good audio producing cameras

Replacing audio on video

In a message dated 12/21/00 9:07:03 AM Pacific Standard Time, peter@r x x x e.net writes:

<< Subj: microphones for documentary video

Date: 12/21/00 9:07:03 AM Pacific Standard Time

From: peter@rx xxx xx xe.net (peter s x x n)

To: GuySonic@aol.com

dear sonic:

i've spent some time at your web site recently, and i'm very impressed with what I've learned. I'm considering buying a set of DSM mikes in the new year (once santa claus has passed by...) for radio work. but i also have a few questions about how suitable they might be for the sort of video work I'm beginning to do. (I'm a print journalist who recently lost his way, so you'll have to forgive the complete novice in me...) I'm starting to make observational, post-verite documentaries using a lightweight panasonic camcorder - the same one discussed on your surround sound page. i want to be able to work completely independently, i.e taking both the picture and the sound myself. and i want to be able to move, follow people around, and pick up what they may be saying in an environment that can change rapidly, get noisy, get quiet, whatever; and i also want to be able to pick up their voice clearly even when I'm filming what they're doing with their hands, or I'm looking over their shoulders to see what they're seeing... ok, so i know this is utopian to think i can do all that with a camcorder and one fixed microphone. But it seems to me there are a number of possible solutions which might help me maximise the amount of usable material i get, without having to hire a sound technician. using the internal stereo mike, i get sound which sounds very good through headphones or loudspeakers, and allows me to pick out individual sounds and place them very clearly, but doesn't sound so good on a TV set, and - to my ears - doesnt always mix well to mono. and since most TV is still mono, at least for low-budget documentary, then this is a problem. on the other hand, mounting a shot gun mike on the camera, or on a pod, seems to me like it might make me lose more of the action than i would really like. (I've not yet had time to try this out in practice). so here are two kinds of solution I've imagined: feel free to shoot them down in flames:

1. does the distinctness of individual sounds, their concrete location in a simulated 'space', in stereo/binaural, also mean that there are simple ways of isolating those sounds in the mix and removing those that are unwanted? or is the result just as difficult to manipulate as mono sound taken with an omni mike - or even more difficult, if you are using two omnis? and should i see any improvement in this respect, using DSMs? or is stereo per se a bad solution for hand-held camera work where the camera man is moving all the time? if the stereo were easier to edit than mono, then maybe the cam mike, or better a pair of DSMs, could provide a replacement for both the mikes in the leacock solution below. But I'm not clear whether, in this context, stereo/binaural sound contains

more information in a usable form than one or two well-positioned mono mikes, or less.

GuySonic Reply:

In (deep) theory and in limited practice, a complex mathematical (HRTF algorithm) editing processor can be used to spatially 'place' monophonic sounds within surround ambient audio; mostly done for commercial multitrack sound films these days. Reversing the process (pulling HRTF encoded sound source elements out to a mono-multitrack mix) is *only very slightly possible* with the best available digital process.

> Mostly, this will not work as the models for the HRTF effect is still far too complex and varies greatly with each individual microphone system. DSM recordings are very different than Binaural type (ear mic) recordings by having a nicer sounding mix to mono edit, much better mono than MS stereo mic and generally better quality sound than mono friendly coincident stereo mics.
>
> Stereo mics and stereo recording within an uncontrolled ambient situation is generally NOT a good idea. Reason is, most stereo microphones do not record sound as we would hear it and 'react' differently to sounds in frequency, amplitude, and direction. This makes mic placement with each type of stereo mic *far too critical* for documentary work.
>
> Conventional stereo mics are only (professionally) practical within a controlled environment with careful sound checks by experienced persons.
>
> That is why so much video is done using Cardioid and Shotgun directional mics. Yes, you mostly get cheesy and thin sounding audio, but at least it's consistent and useable. The real bad news for lone outdoors documentary work is the really effective windscreens for these type mics are very large; can be over twice the size of a small 3-CCD camera!

In contrast, DSM mics ARE A GOOD idea for documentary work as the recording turns out exactly the way it was heard. No critical microphone placement limitations; what you hear is what you record. As a bonus, the Headworn DSM's allow the simultaneous recording of high quality INTERVIEW and/or NARRATION audio with the scenes ambient sounds. AND if this is not enough, the easily headworn DSM + WHB/N windscreen is effective in 60 MPH winds!

2. richard leacock's solution is to get a friend of his to make him a mike which can be mounted on the camera and consists of a hypercardiod wired to the right channel and a semi-cardiod wired to the left. that way, in editing, he can choose which sound track works best for each shot.

a. could sonic make such a mike for me? and if so what would it cost? and could it be made as camera-mounted, or using the WHB windscreen head band, with one mike on each side of the head?

GuySonic Reply:

Richard's dual Directional Cardioid / Shotgun Mono mic scheme seems a good solution for difficult filming where the background noise level is aggressive and/or 'over the top' of the primary subjects. These types of mics can be practical until outdoors where the oversized windscreens are needed. Then, the size of the microphone is likely too cumbersome for camera mount; a second sound person is usually needed to fishpole-operate this type of microphone in windy locations. *(More below about using camera mounted mics)*

> A special camera mounted switch box might be handy where one or more microphones may be selected for

input to the camera's external mic jack. Then choosing the dual mono directional mics or headworn DSM stereo mic output is quick with a flip of a switch.

b. could i approximate this solution by using a set of headworn DSMs, coupled with a camera-mounted mono shot gun, and take the DSM sound, either via DAT, or direct, into the camcorder's left channel, and the shot gun into the right? this would give me the added advantage of having a full stereo sound track on DAT which could be sync-ed up where useful, where the subject deserved it; but might be less appropriate than using the semi-cardiod for a mono soundtrack.

my main concerns are to get a genuine choice of useful sound tracks which will provide me with workable sound, requiring a minimum of extra effort in post, in as wide a variety of situations as possible, while using handheld camera and LOTS of movement to record spontaneous, unstaged and unpredictable human events, including but not confined to speech.

it's a tall order, i know! but I'm so impressed with you guys, i somehow think you may know the answer to my problem... looking forward to hearing from you whenever you get time to reply:

meanwhile, good wishes and a very happy Xmas:

peter s(xxxxx)n
brussels, belgium

>>

Hello Peter,

I appreciate your concerns and thank you for taking the time to outline the scope of your project in such detail.

Your work seems oriented to documentary journalism where virtually every situation is unique.

While working with your Video camera is going to be challenging enough, the ability to simultaneously record at least usable mono, if not full stereo audio, will vary with ambient conditions surrounding the POV. Directional microphones may be most useful when one person's (or a tight grouping of individual's) vocalizations are the main object AND the ambient is way too aggressively loud to clearly hear what's being said at some distance. Here directional microphones will attenuate side sounds to greater or lesser degree.

But there is a price in overall audio quality that's paid for this exclusiveness. This is something you seem well aware of , wanting better sound when practical to record it. Mounting a shotgun or Super-Cardioid mic on the camera will allow for consistent (low-fidelity) audio to be clearly recorded in these situations.

With the DSM headworn microphone, you will record everything as you or the person wearing the DSM is hearing it; exactly. That means that if you are the sole worker of the camera and audio recording process, and if you can hear the subject(s) within the surrounding ambient clearly enough, then using the DSM for recording the audio will give you an exact surround-sound stereo recording of your 'heard' perceptions. Nothing more or less.

However, very low frequency sounds, that are prevalent in all urban settings, will generally sound much louder in a full frequency bandwidth audio recording than you may have realized during the shoot. This is mainly because we filter these sounds out of our perceptions in daily life. A bush person, one who rarely if ever hears such industrial age activity, would be most conscious of all the rumbling caused by our mechanical devices (motorized air/road

vehicles, air conditioning systems, etc).

> Using a High-Pass 85 - 150 cycle (A.K.A. bass filter) with the DSM microphone will attenuate these ambient sounds to be recorded in a manner more to our normal experienced perceptions.
>
> However, there are times when the recording full bandwidth audio is more realistic to the end product and most desirable. You will have to determine what elements are most important to any particular shoot and use audio filtering (during a shoot) appropriately. Audio excessive low frequency bandwidth in a recording can also be corrected in Post Edit process, but if the camera's Auto REC Level feature was used and the bass frequency content audibly modulated the background sounds, then fixing this in post is likely not going to work well; better to have filtered reduced some of the bass frequencies a bit before the camera ALC gets it.

To complicate matters more, the DSM model chosen to work best with the EZ30 in automatic ALC mode may be different from if using this same camera in Manual REC audio mode. This is because the ALC has a much wider (soft to loud signal) range than the manual attenuation settings allow. Using a DSM-6S/H microphone will work for soft to moderately loud (motor car street traffic) ONLY in the AUTO level setting.

> Using this same model microphone in the lowest -20 DB Manual audio setting will cause the audio to overload as a noisy hot rod sounding vehicle passes closely by your position. Therefore, as you suspect, it is not ideal or practical in all situations for doing audio recording with using just the camera.
>
> Using an external DAT recorder may be needed to gain adequate control of the audio recording process knowing the camera's abilities and limitations.

A Sony PCM-M1 (or TCD-D100) seems the best suited for this and I have an attenuation cable that will feed the DAT's line output directly into the external mic input of the camera (when desired) so that the camera's excellent sounding Manual 20 dB attenuation setting correlates closely with the VU reading range on the DAT.

> With this you can control the audio recording level on both the camera and also make a DAT audio tape recording.

How you use the DAT deck is optional; this is a very versatile system. If you desire having both devices recording the same DSM mic'd audio or decide not to record on audio tape, use the DAT deck for camera only audio recording control with attenuation cable external mic input to the camera (in ALC or 20 DB ATTEN). Or you can just record DSM mic sound on the DAT with NO connection to the camera; a directional microphone may be operating while mounted on the camera, so that two versions of the video audio (one directional mic'd Mono on the camera, the other DSM surround DAT stereo) is made available.

The minimum equipment approach is the camera and only the DSM + WHB microphone powered by the PA-6LC2 *(with optional Bass Cut switch)* as the external camera microphone. An optional directional or shotgun type microphone might also be readied (useful as camera mounted) for using at appropriate times during non-windy shoots where a noisy background is unsuitable for ambient stereo recordings.

> The advantages of surround stereo is that all sounds within the ambient are recorded with most of the directional information recorded 'as heard live'. If you intend to produce a version that's a mix to mono, then most of the pyscho-acoustical directional information is lost (all sounds tend again to be 'piled' on top of others), but the audio may still be superior to than of typical mono mic'd audio. It would depend on how

much POV off-axis sound is competing with the main subject's audio.

Post audio editing including using frequency band filters and compression techniques can help suppress distracting noise and bring remaining audio elements closer together; avoiding the need for doing this is (of course) best.

Knowing a bit about your shot's ambient environment beforehand will help in determining what mic(s) and tactics are needed to insure useful audio is recorded under worst case conditions.

Moderate Cost Sound Recording Components for Video/Audio Recording

A few (2007 updated) Suggestions/Links:

(1) R-09 SDHC Flash (also Microtrack CF Flash) mini-decks; See more models

(2) PA-3SX ... External Mic preamplifier $480; See more models

(3) DSM-6S/EH or DSM-1S/H ($700) stereo-surround mic $950

(4) WHB/N windscreen ($250)

(5) LiteGUY HRTF baffle accessory ($1075)

(6) AG-HSC1- (list: ~$2000) Panasonic *smallest* mini-PRO 3-CCD camcorder; records HD video to SDHC flash care; very good to excellent external MIC audio quality/*adequate* audio features; *might* test OK to directly power DSM mic making world's smallest 2-piece High Definition video/stereo-surround recording package!

Please let me know if this makes sense, or at least enough to ask questions.

<< Subject: Is there a shotgun mic that sounds as good as a lavalier mic?

From: "mxx wxxx" <poxxasxxxer@videotips.com> Date: Fri, 25 May 2001 02:21:42 GMT

I was wondering if you can get close to the sound quality of a lavalier mic
with a good shotgun mic? I do a lot of interviews with people about 6-8 feet away from the camera and always in quiet settings... Sick of people tangling up the mic cable, noise from my wireless mic, etc... What is a good shotgun mic? Anything worthwhile in the $250 price range? Thanks!

Subject: Re: Is there a shotgun mic that sounds as good as a lavalier mic?
From: "Doug Graham" <pandavideo1@erols.com>
Date: Thu, 24 May 2001 23:56:12 -0400

It's not that one mike is 'better' than the other, it's proximity to the sound source. You can get a lav right up close. A shotgun with a good element will sound even better...provided you can get IT up close, too. This is why movie sound crews use shotguns mounted on booms.

A camera mounted microphone at 6-8 feet from the talent just isn't going to sound real great.

--
Regards,
Doug Graham

Panda Productions
>>

GuySonic@aol.com Posted Reply:

While not obvious, there is a way to get the sound you need with relatively inexpensive mic'g equipment that's easy to use even when working solo on a documentary.

> One approach to live video mic'g that is not discussed enough is recording the audio exactly (no better or worse than) the way it sounds to the camera person; a shotgun or single point stereo microphone (at any cost) cannot easily accomplish this feat.

CAN YOU HEAR IT?
If we recall, clearly hearing and understanding vocalizations at 6-10 foot distance in a quiet environment is usually effortless for most people. There is a microphone system that will record sound easily and consistently in this manner. In other words, recording the ambient room sound (exactly like you hear it) in surround-sound stereo way is quite acceptable, if not a very desirable way to record live audio during the filming.

> Using an ambient 3-D stereo mic'g method works very well in most documentary projects, budget film projects, and even amateur productions with just a low cost camcorder especially if desiring virtual reality type quality stereo sound.
>
> Using an ambient stereo microphone that records only what you are hearing at the camera position is going to provide more consistent results than trying any Lavaliere or Shotgun mic approach that never records exactly what you can easily hear at the time. (NOTE: not all ambient stereo mics will do this; more on this later.) This is because some ambient stereo mics incorporate a reception pattern that replicates our own hearing reception pattern. Room ambiance (the dreaded echoes) from being at a moderate distance are much less a problem when the mic reception pattern is modeled much like our own stereophonic hearing; the recording is then a 'coherent record' of the live ambient sound field.

Question: Will it work all the time?
If you can hear the subject reasonably well from the operating distance, then the recorded sound will be at least as good as you heard it during the take. Even a person working solo, can be operating the camera while doing a one-on-one spoken interview, AND clearly record any and all vocal responses.

> I've done this type of mic'g for many projects over a 15 year period using a handheld camera (at chest level or on mono-pod) inside of moving vehicles, indoors, and outdoors. Audio has never been much of a problem with vocal recording using this type of microphone.
>
> See: http://www.sonicstudios.com/videomic.htm#faq and http://www.sonicstudios.com/dsm.htm

AUDIO AT THE DUMP
I recall a worst case situation when filming an interview in a landfill with the 50 ton crusher dozier operating full tilt at only 30 meters distance!

> I remembered barely being able to hear the shouted vocal responses at 1.5 meter distance during the filming and the exact same audio resulting on the recorded audio track; no worse or better than the original live impressions. I did have the good sense to use a low frequency filter (high pass) mic option that allowed to make the best of a very bad audio situation. The mega dozier sound was way *over-the-top* for sure, but you could still hear what was being shouted clearly enough!

WHAT IS HRTF AMBIENT STEREO?
The ambient stereo mic pattern is called HRTF= head related transfer function, but NOTE: not all HRTF are the same as there are several HRTF reception patterned mic versions. Some also include the ear reception pattern mechanism; this is called Binaural.

Another type (a Sonic Studios made DSM mic), avoids the playback compatibility problems with ear-mic patterns for solely using just the human head's reception pattern (includes head-neck-shoulders-and torso to a much lesser degree), for producing Dolby Pro Logic compatible surround sound 2-ch stereo recording that still sounds remarkably good on mono playback equipment.

In contrast, playback of Binaural HRTF pattern mics (played on other than headphones playback) causes anomalies that are worsened still with mono playback equipment. Read more about this at: http://www.sonicstudios.com/multitrk.htm

USING YOUR HEAD WITH AUDIO

Being part of a microphone pattern involves that the camera person be personally headwearing this mic (on eyeglasses or windscreen headband), use an assistant to be wearing the mic, or (stop needing a person as part of a mic pattern) place the two mic pickups on a stand or boom with the LiteGUY HRTF mic baffle that replicates (dummy head style) the same accurate HRTF ambient stereo reception pattern. See (and hear) at: http://www.sonicstudios.com/liteguy.htm

Most videographers that start working with a DSM type HRTF stereo mic find that it works much easier and with consistently better sound quality than any known lapel or shotgun based recording alternative.

EASIER AUDIO, BIGGER APPLAUSE

In my experience, natural ambient surround stereo sound is most often the better recorded sound that directly communicates the experience of being there POV with the video. In other words, the audio perception is much more in sync with the video image perception.

With careful consideration of the usual video mic suggestions, perhaps more of you should start using the (DSM type) ambient stereo (POV video) mic for those 1-2 person-run documentary type projects.

Chances are quite good that you won't bother to look back as camcorder microphone audio gets much easier, and you also notice the viewer's interest and smile has greatly increased!

Regards in Sound & Music Recording,
Leonard Lombardo

Sonic Studios(tm)..."Making Audio History With DSM(tm) Microphones"
Since 1986: The First Choice of Sound Recording Professionals"
Specializing in Patented HRTF Surround Stereo Microphone Technology for Speech, Film, Music, Sound Design/EFX
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Informative WEB SITE: http:// WWW.SONICSTUDIOS.COM
A better wish... "A bit of knowledge coupled to a great deal of wisdom"

Click to find us on YouTube!!!

What's on ***Sonic Studios*** Web Site? *(Click underlined text, and navigation photos)*

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DSM™ Patented Stereo-Surround Microphone Technology

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