JVC – GYHM100u video camera

Quick Start Guide

It should take you half an hour to an hour to read this guide before shooting.

About this guide

- This guide explains some of the essential but less obvious features of the camera.
- I’m assuming that you know where to find the record button, the zoom button and the focus ring.
- Everything else is explained

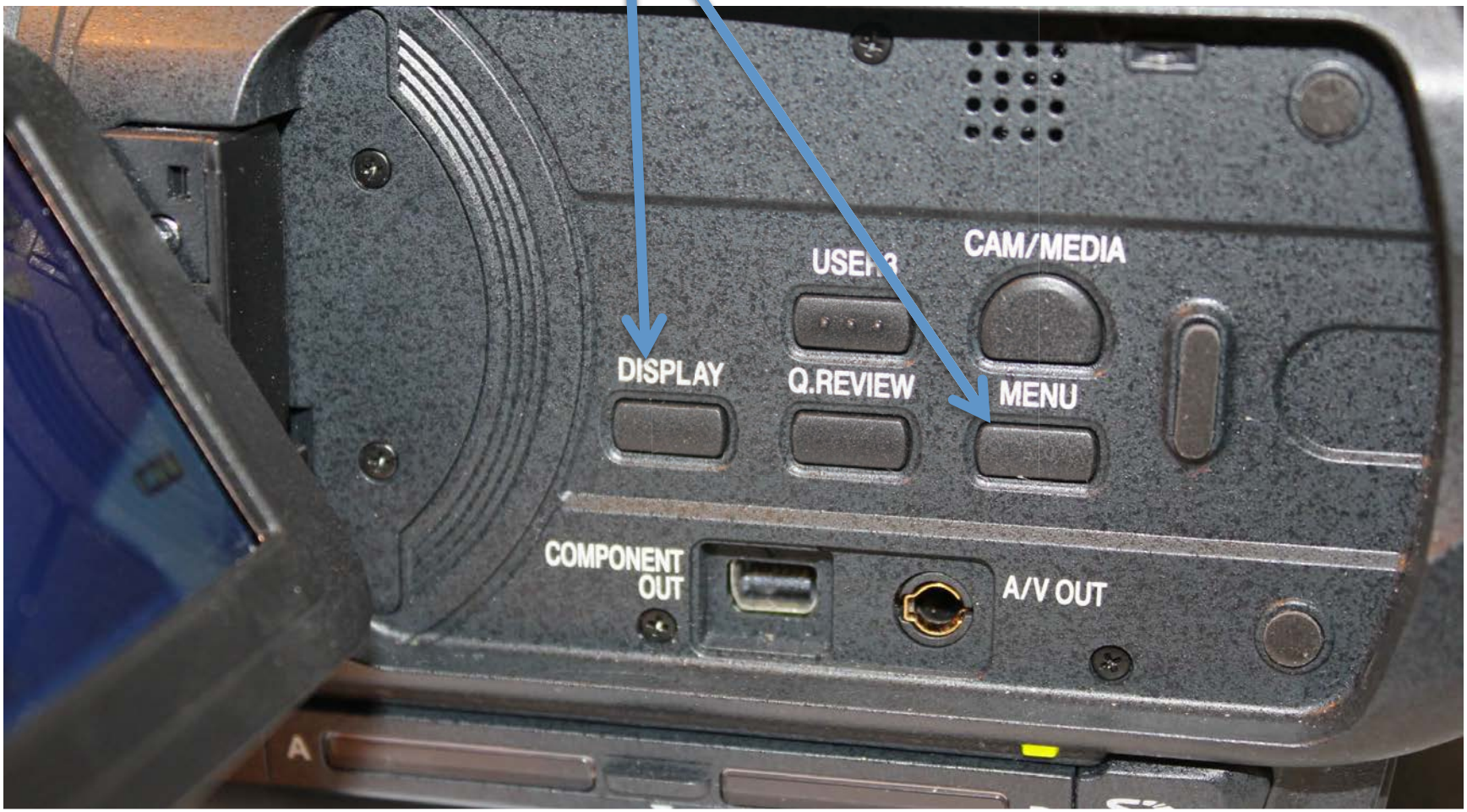
JVC GY-HM100u
Why use this camera?

- For documenting performances and events – there is no single shot length limit (as with DSLR cameras that shoot video)
- High quality sound recording- XLR inputs
- Very good motion reproduction – CCD sensors= no rolling shutter problems
- Manual controls
- But the image starts to get noisy in low light – avoid image GAIN if you can!

A Few Quick Shooting Tips:

- Reformat the SD card before you shoot
- always shoot Progressive frame rates: 24p or 30p (this is explained later)
- camera shake is more more apparent on HD video so use a tripod (with the camera Image Stabilizer OFF **– Menu/Camera Settings/OIS**)
- always delete clips with the internal camera menu- keep the SD card structure intact

Turn on Display and Menu Button



Menu controls

This wheel on the side of the LCD
Screen can be moved to toggle
Through menu settings

Display Information

First, reformat the SD card: Menu/Media Settings/Format


MEDIA SETTINGS
FORMAT
VIDEO NO. RESET
IMAGE NO. RESET
DELETE ALL DATA
RETURN
SET
MENU:QUIT

Select the SD card location to Format

JVC GY-HM100u recording times:

Camera comes with one 32 GB card.
1080 24p HQ recording is recommended.

QuickTime/MP4	SDHC Card			
Quality	4GB	8GB	16GB	32GB
HQ(1080i/720p)	12 m	25 m	50 m	1 h 40 m
SP(1080i)	17 m	35 m	1 h 10 m	2 h 20 m
SP(720P)	22 m	45 m	1 h 30 m	3 h

Video Recording

- Before recording video you need to specify the following:
- A. the file format (Quick Time or MP4)
- B. the video recording format: image size and frame rate of the video

A. Setting the File Format

Choosing the Quick Time Format

Which File Format to use?

- Premiere accepts either file format, the MOV or MP4
- Each format requires a different method of backing up your data
- For the MOV format, simply copy the MOV files from the SD card to your hard drive
- For the MP4 format, copy the entire SD card to your hard drive (all the folders must be present)
- Make sure to use the Media Browser in Premiere when importing MP4 files (not File/Import)

B. Selecting A Video Recording Format

This camera records in both NTSC and PAL video formats.

It records in both “full” HD image sizes and also with an “anamorphic” image size.

All formats are recorded using the XDCAM codec. This is a very stable MPEG 2 format but you cannot view the XDCAM files on a computer without editing software or the Sony XDCAM viewer installed. iMovie is not sufficient. You will need Premiere, Final Cut, AVID, Sony Vegas or something similar installed. The Sony XDCAM viewer is available from the Sony Professional website. It is a free download.

HD Video Frame Sizes

- “Full” HD frame sizes (use these sizes!):
- 1920 x 1080 pixels
- 1280 x 720 pixels
- Full HD resolutions use square pixels

- “Anamorphic” HD frame size (avoid these if possible):
- 1440 x 1080 (displays as 1920 x 1080)
- Anamorphic HD resolutions do not use square pixels (this can cause motion problems)

- Both are 72 pixels/inch

- HD Video always has a 16:9 aspect ratio

HD Frame Rates/Scan Types:

- Progressive NTSC (North America and Japan):
- 24p (23.976 fps), 30p (29.97 fps) or 60p (59.94 fps)
- Interlaced NTSC:
- 60i (60 fields or 29.97 fps interlaced)

- Progressive PAL(the rest of the World):
- 25p, 50p
- Interlaced PAL: 50i (50 fields or 25 fps interlaced)

Common Notation to indicate Frame Size and Frame Rate:

- vertical resolution/frame rate/scan type
- 1080 24p or 1080p24: this is 1920 x 1080 23.976 fps NTSC PROGRESSIVE
- 1080 60i (or 1080i60 or 1080i30): this is NTSC 29.97 fps NTSC INTERLACED
- 720 25p or 720p25: This is 1280 x 720 25 fps
  PAL PROGRESSIVE

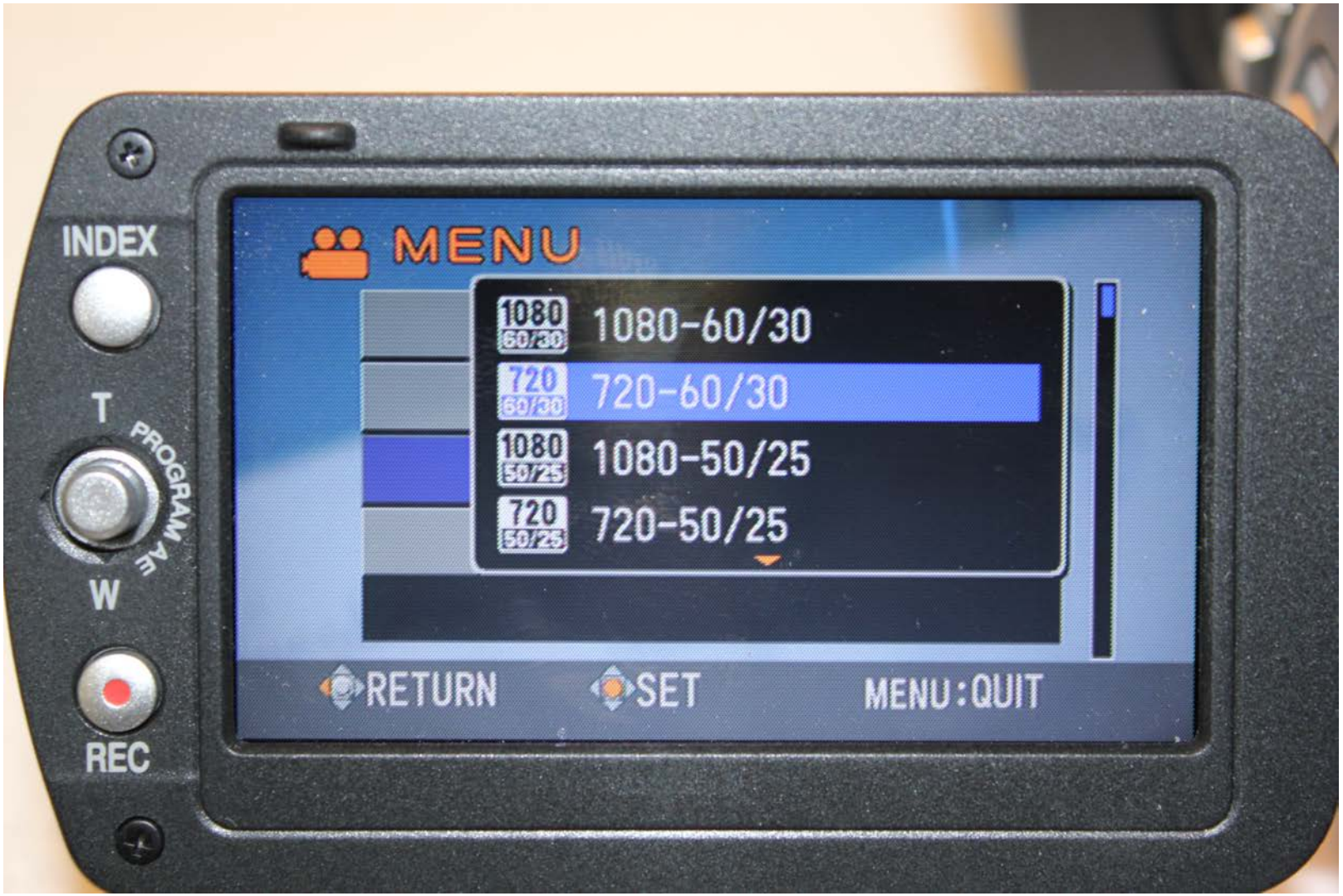
What to shoot?

- Always use “Full” HD images sizes and Progressive frame rates
- In Canada we use the NTSC frame rates
- Never select an interlaced frame rate (1080 60i)
- 1080 24p is the most common NTSC HD video frame rate: it is the most compatible for North American display devices and also compatible with North American Blu-Ray discs
- 1080 30p is a good option for shooting fast motion
- Shoot 720 60p for a slow motion effect (the video can be later interpreted as 30p or 24p in Premiere- to slow it down)

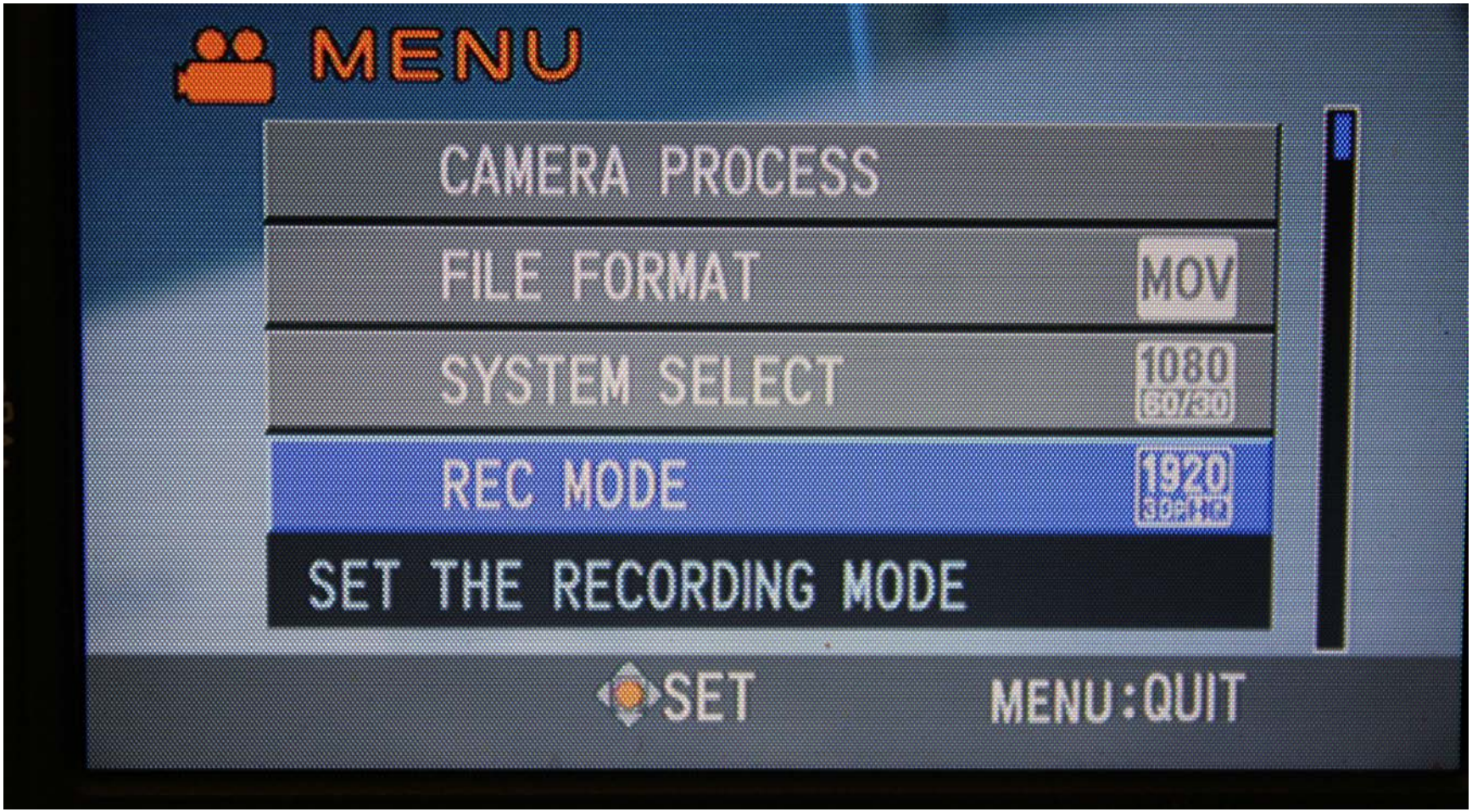
Settings Video Resolution and Frame Rate: Menu/System Select

1080 24p is one selection

1080 30p or 720 60p requires two steps.
First, in System Select,
choose 1080 -60/30 or 720-60-30



Then specify the frame rate in REC MODE.



Choose 1920/30p (HQ) for 1080 30p or 1280/60p (HQ) for 720 60p

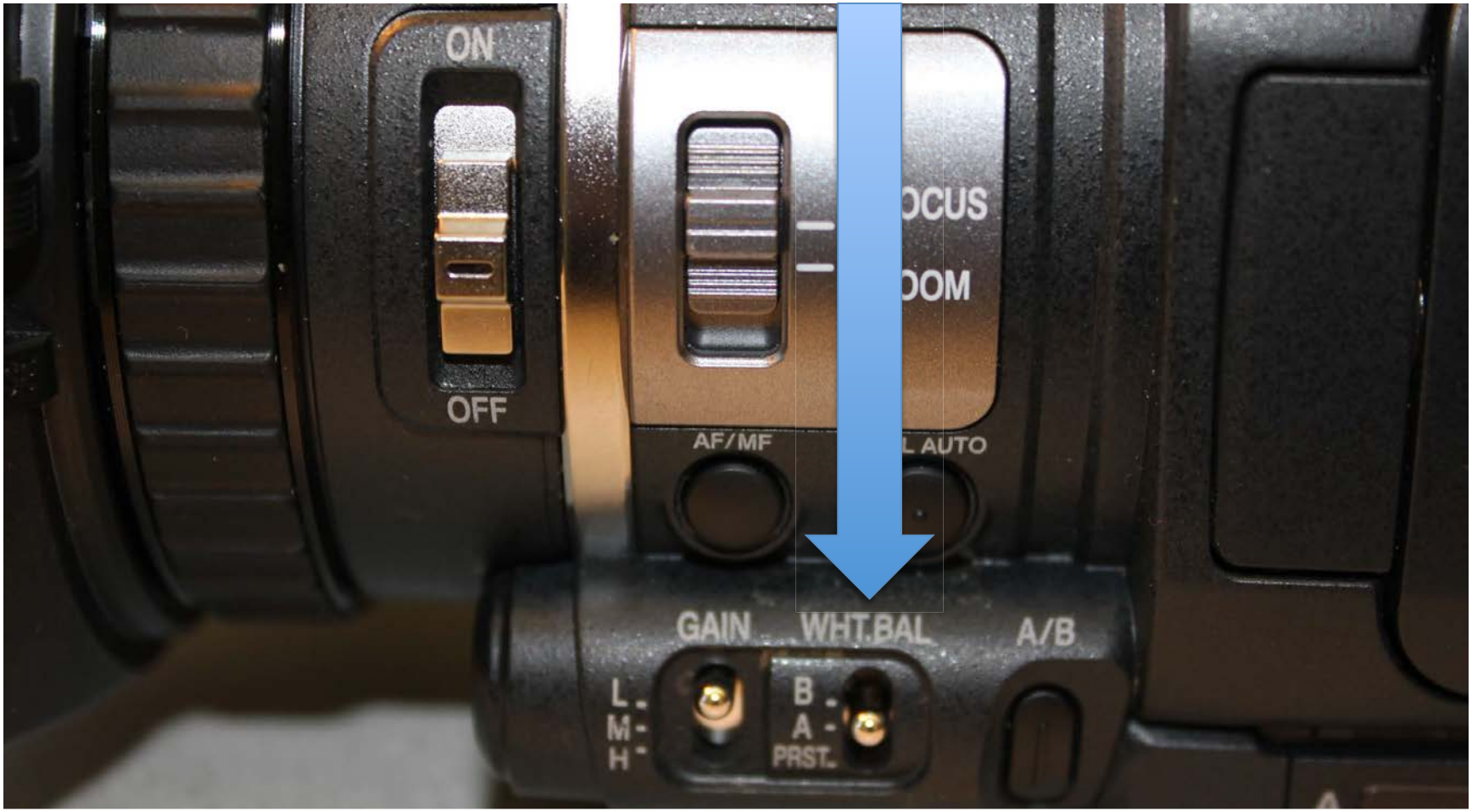
Other Essential or Important Settings

- White Balance
- Zebra Stripes
- Manual or Auto Focus
- Manual Exposure Adjustments
- Color Settings

White Balance

- You must white balance the camera before you shoot
- Setting the white balance adjusts the color temperature of the sensor to the surrounding lighting
- White balance must be reset for each change of location or each change of lighting
- Often our lighting sources are mixed so it is always preferable to do a manual white balance instead of using the presets.
- Always carry a white piece of paper or ideally a thick white card to use for white balancing

There are three White Balance settings.
A and B are manual settings. PRST is a third choice, set in Menu/Camera Process/Preset Temp.



To do a manual white balance: with the setting on either A or B, point the camera at a white card in your lighting situation while pressing the AWB button.

Zebra Stripes

- Zebra stripes are useful to indicate overexposed image areas
- The LCD and viewfinder in this camera lack detail –zebra stripes are necessary to gauge exposure
- Overexposure in video can result in white “burned-out” areas without information
- Adjust exposure or lighting to avoid these areas
- The luminance threshold (upper limit and lower limit) is by default 70 to 80 % - you can adjust this if needed.

To see overexposed image areas, turn on the Zebra Stripes: Camera Process/ Zebra

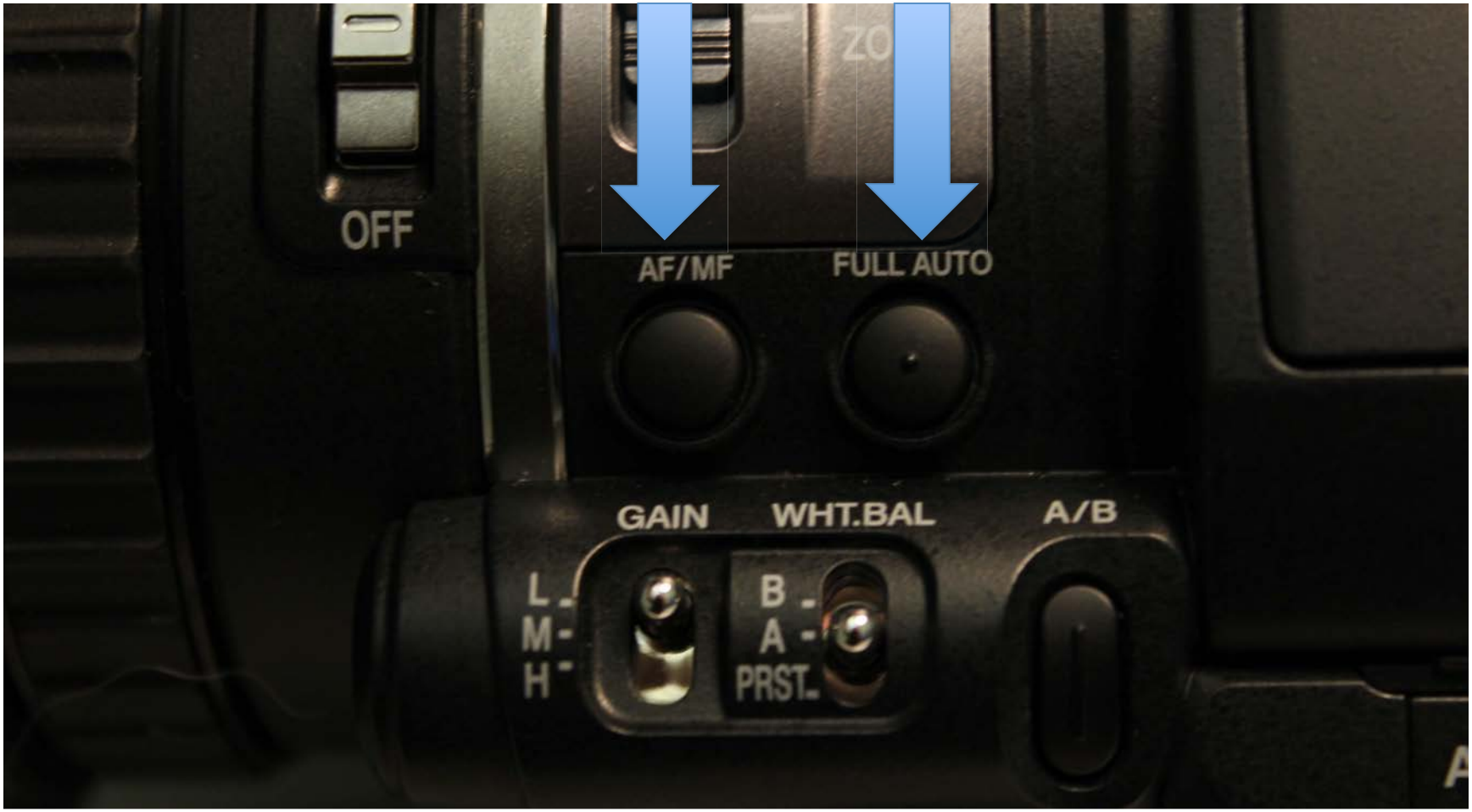
Zebra Stripes appear as below:

Manual Exposure and Focus Adjustments

- Auto-exposure is convenient for rapid shooting situations but it does not replace the accuracy of manual exposure

- Auto focus can be very distracting- the focus will change if there is movement in front of the lens- use manual focus in most situations

AF/MF toggles manual and auto focus
FULL AUTO toggles manual and auto exposure



Manual Exposure controls on the back of the camera

Compensating for Overexposure

- If you are in AUTO exposure but seeing overexposure – turn on the ND filter (on the lens- next to the focus/zoom ring)
- In MANUAL exposure:
- First adjust the IRIS, then the AE exposure compensation, then the ND filter if necessary
- Try to avoid adjusting the shutter speed as this changes motion (unless you want that effect)

About Shutter Speed

- usually the shutter speed is left at 2x the frame rate (ex. 24 fps has a shutter speed of 48 or 50). A shutter speed lower than 2x the frame rate will cause motion blur. Faster than 2x the frame rate will start to decrease exposure and cause less motion blur.

Underexposure

- If the image is still underexposed after IRIS and AE exposure compensation then you must use GAIN
- The camera has three GAIN settings, the first GAIN setting must be 0 dB, or you will always be shooting with GAIN
- Any amount of GAIN introduces image noise
- Over 6 dB the noise is considerable

Three GAIN settings. **Menu/Camera Process/Gain L, M,H** sets the values of these switches.
I recommend L: 0 dB, M: 3 dB, H: 6 dB.

Exposure check list:

- Check for overexposed areas
- Use Manual Exposure if you can
- Change Iris – lower number means more light
- Normal shutter speed is twice the frame rate
- Use the ND filter if the image is still too bright
- Use GAIN if the image is still too dark

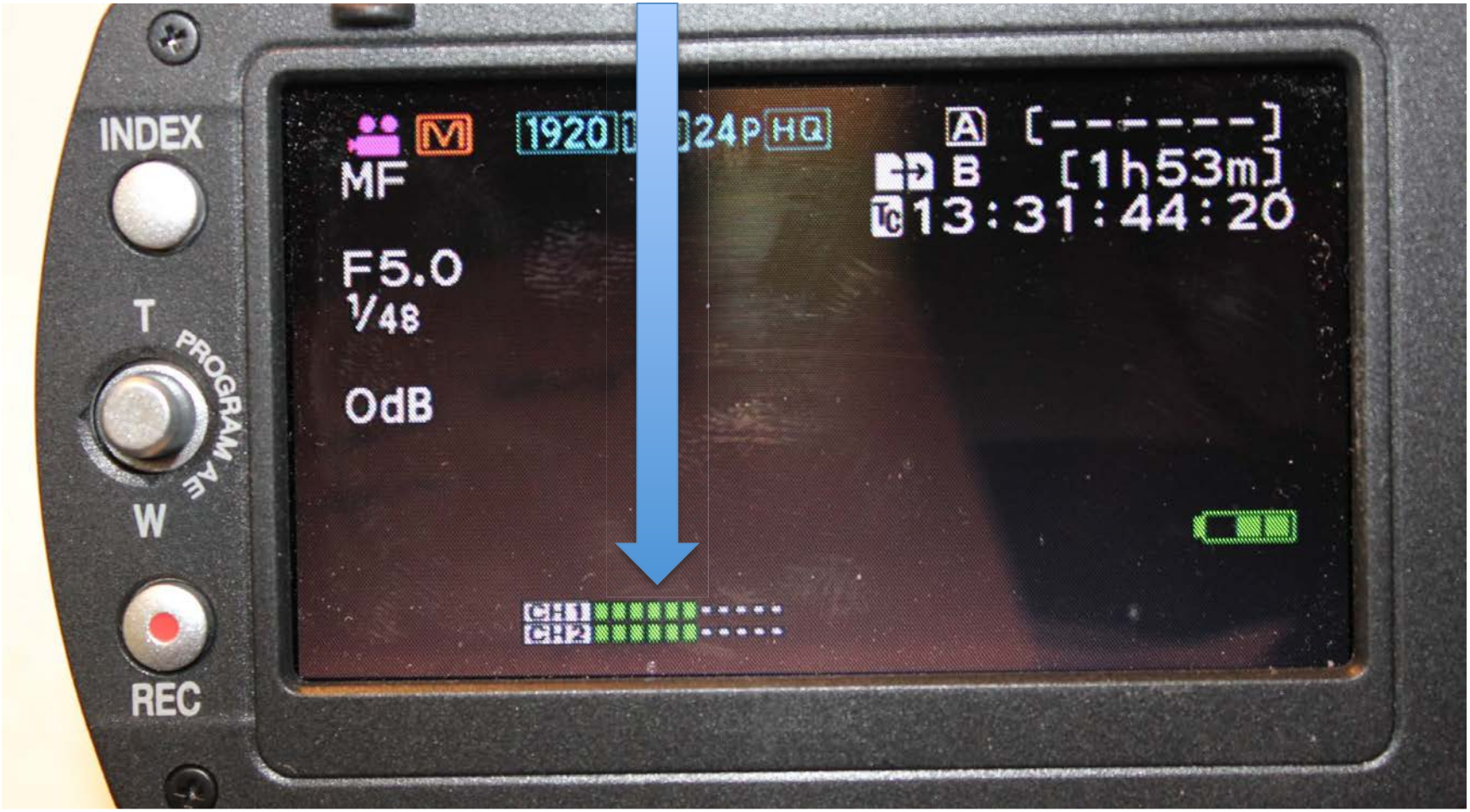
Audio

- The camera comes with a built in microphone (on the lens) and an attachable directional microphone that plugs into the audio control unit on the camera handle
- The built-in microphone has a wider pick-up pattern. It picks up room noise and camera operator noise.
- The attachable directional microphone picks up only what is immediately in front of it, and cancels out room noise. It is preferable to use this microphone.
- There is an additional XLR audio input for other microphones.

Put the microphone in Input 1

Switch CH-2 Input to Input 1
Input 1 requires Phantom Power (MIC+48V)
Switch Audio Select to AUTO

Audio Levels in the LCD – if the audio is distorting (red) use Manual Audio Level Adjustment Wheels



Use Headphones to monitor Audio

Deleting Clips

- Switching the CAM/Media button will display the shots for preview or deletion
- Select the clip to preview
- Go into Menu to delete the clip
- Always delete clips from the camera menu, not through a computer

Camera/Media

Media Window

Other Menu Settings

- In the Camera Process Menu: keep the GAMMA and the COLOR MATRIX settings to standard (STD).

That’s it. Happy Shooting!