



AMPEX

BCC-4

Self-Contained
Color Minicamera

The Light
Fantastic



BCC-4 Self-Contained
Color Minicamera

Feather-Light And Beautifully Balanced

to take the strain out of shooting news events, on-the-spot commercials, and documentaries. Human-engineered features make the BCC-4 easy and fun to use. The weight of the camera head with integral viewfinder is just 16.5 pounds, and the unit balances on the shoulder with the center of gravity pivoting directly through the detachable shoulder pad. The hand grip is comfortable and function-oriented with a push-button for controlling VTR start/stop.

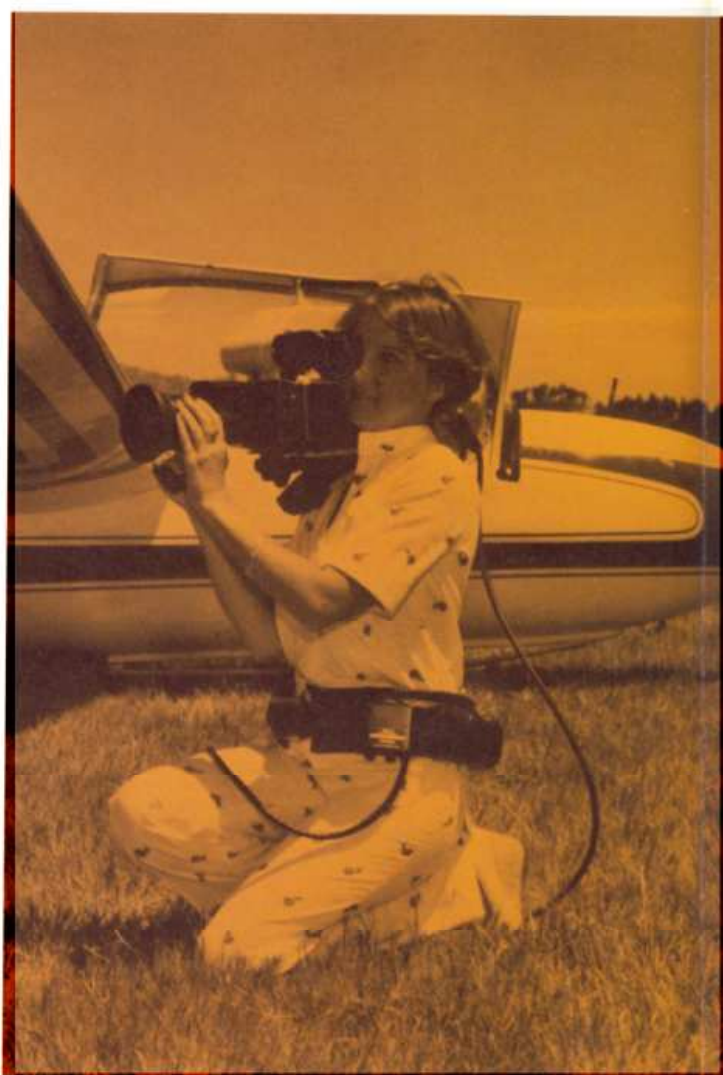
Advanced features and affordability make the BCC-4 the most versatile and cost-efficient ENG camera available. For tough shots from overhead or shoe-top, you'll be able to move in fast and close. The viewfinder, with 1.5-inch monochrome CRT, is incorporated in the camera proper, and the rotating eyepiece allows almost any desired viewing position. The viewfinder incorporates a clearly labeled LED display to keep the operator up to the second on critical camera functions and permits immediate compensation for changes in camera status. Both camera output and VTR-recorded pictures can be monitored in the viewfinder—you won't have to hold your breath for film processing—you know what you've got before you leave the scene.

Included in the BCC-4 package is a 10:1 f1.9 Fujinon zoom lens with auto iris. A manual override feature and video level indicator make precise lens adjustments easy and goof proof. The BCC-4 is compatible with all types of C-mount lenses.

The Feeling Of Unrestricted Freedom

is yours with the fully self-contained, "CCU-less" BCC-4. It's light and rugged, with complete weather and temperature seals—so you can take it almost anywhere. No AC power sources are required, as the BCC-4 generates an NTSC signal in seconds from DC power supplied by the battery belt; an AC power converter is optional.

More standard convenience features extend your freedom and broaden the BCC-4's range of applications. With recorder connected, the audio input at the camera head together with video monitoring through the viewfinder let you hear as well as see what's being recorded. Automatic adjusting circuits are built in to correct and compensate for a variety of conditions. Three broadcast grade $\frac{2}{3}$ " Plumbicon* tubes provide the extra insurance you'll want



for bringing home quality color pictures under extended use in a wide range of applications. The extreme portability and self-contained spirit of the BCC-4 mean you can press it into service under the most unconventional circumstances: take it to sea for a fishing derby ... strap into a grand prix car for a trip through the esses ... go aloft in a helicopter, or tape interviews inside a jumbo jet. The BCC-4 has versatility-plus.



extended
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grand prix
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Outstanding reliability and stability

are assured through the use of integrated microcircuits in important components, including the pre-amplifier, process amplifier, encoder, and sync signal generator. The micro power consumption of only 29 watts gives longer battery life than comparable cameras and reduces internal heat for greater stability.

Extra features without extra cost make the BCC-4 a real news-making value:

- broadcasting standard I/Q bandwidth encoder
- broad-range video gain for increased sensitivity
- normal/dark changeover switch
- parallel optical system for accurate registration in pan/tilt situations
- sealed to protect against electrical interference and moisture
- automatic adjusting circuits for bias lighting, flare and aperture compensation, pedestal and modulation shading correction
- built-in color bar generator
- built-in Plumbicon® tube protection circuit

More than just another camera the BCC-4 is a complete package, including camera head, zoom lens, shoulder pad, belt-type NiCad battery unit, and trickle-type dual battery charger. Also included are a 49-foot (15 meter) VTR cable, module extender and extractor, and three filter holders—plus a monitor switcher unit, maintenance kit, operation/maintenance manual, and a strong metal carrying case for all the gear. And one more important item for added security—the Ampex warranty.

Optional accessories round out the application flexibility of the BCC-4:

- A/C adapter and cables
- D/C 12-volt converter for automobile cigar lighter
- single or dual battery quick-chargers—1-hour charge gives 1½ hrs operating time
- special all-weather camera covers
- extra-length cables
- test-charts
- a variety of tripods, pedestals, and pan/tilt heads
- industrial (non-broadcast standard) Plumbicon® tubes

When shopping for a versatile and compact ENG system, compare

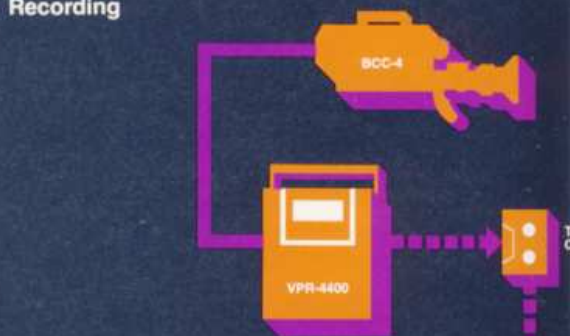
- picture performance
- portability
- camera-recorder configuration
- price.

Look closely. Then choose the best. The Ampex BCC-4.



AMPEX ENG SYSTEM

Recording



Editing



Playback



Get To The Air

fast with news broadcasts, human interest stories, and instant ads when you use the lightweight, ultra-portable BCC-4.

Every year the competition for top ratings gets tougher. One of the ways you can improve those ratings is to bring your viewers closer to the action. That means being on the scene—when and where the news breaks. Now, color sequences of visiting personalities, sports spectacles, and special events can be broadcast-ready—instantly—with the Ampex BCC-4 at your command.

The BCC-4 translates ENG economics and self-contained convenience from theory to practice.

Rugged, lightweight cast aluminum construction means you can load this battery-powered camera into the back seat of a sedan or cross the outback to capture those special stories and give them the immediacy they deserve.

Delivering unmatched mobility and operational convenience, the BCC-4 lets your camera operator concentrate on the action and story line rather than the camera. You get image and color quality equal to or surpassing 16 mm along with the obvious benefits in eliminating high film costs and processing delays.

Broadcast quality and go-anywhere versatility

Whether linked through microwave relay or teamed with a portable $\frac{3}{4}$ " U-Standard cassette recorder like the new Ampex VPR-4400, the BCC-4 is the ideal field camera for delivering broadcast quality color news sequences. It's designed for flexibility—use it for "live" coverage or for videorecording. The BCC-4 is compatible with all NTSC signal systems and interfaces with "big" VTRs or U-Standard machines like the AMPEX VPR-8300 full-editing recorder/reproducer.



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Specifications

INPUT

Supply Voltage

Nominally ± 9.0 volts 29 watts (+8.4 to +11.2 volts)

External Picture

Composite 1 volt P-P, sync negative, 75 ohms

Audio

Audio input

OUTPUT

Video Out

Composite 1 volt P-P, sync negative, 75 ohms

Camera Out

Composite 1 volt P-P, sync negative, 75 ohms

Audio Out

Microphone level

PERFORMANCE

Pick-up Tube

$\frac{3}{4}$ " magnetic focus/def Plumbicon-Broadcast Grade, type XQ1427

Sensitivity

3000 lux (279 FC) f4 (60% reflectance) Minimum—338 lux (31 FC)
f 1.9 +6 dB gain (60% reflectance)

Frequency Characteristics

Luminance (Y)

1 kHz to 4.5 MHz within ± 0.5 dB

4.5 MHz to 6 MHz within ± 1.0 dB
 -2.0 dB

Chrominance

Reference 100 kHz (modulator input)

(I) 1.3 MHz less than 2 dB

3.6 MHz more than 20 dB

(Q) 0.4 MHz less than 2 dB

0.5 MHz less than 6 dB

0.6 MHz more than 6 dB

3.6 MHz more than 20 dB

Encoder Waveform Distortion

The encoder output waveform distortion for the input waveform (rise time— $0.03 \mu\text{s}$) of 60 Hz and 15 kHz is as follows:

	RISE TIME	OVERSHOOT	SAG
Y Video	less than $0.1 \mu\text{s}$	less than 10%	less than 2%
I Video	less than $0.4 \mu\text{s}$	less than 10%	less than 2%
Q Video	less than $1.0 \mu\text{s}$	less than 10%	less than 2%

Ringings higher than 7 MHz for Y video and 1.6 MHz for I and Q video is excluded from the above.

Resolution

Each channel with no horizontal frequency boost as measured at the output of the monitor switcher or the processing amplifier.

Horizontal Resolution:

500 TV lines or more at center

Horizontal Detail Response:

More than 20% at 400 TV lines at the center

Signal-to-Noise

Y channel output

Random -47 dB (P-P/rms) or more

($I_s = 0.15 \mu\text{A}$ P-P, Bandwidth

4.2 MHz, gamma = 1)

Carrier Leak—less than 7 mV P-P

Amplitude and Phase Error—Color Bar Signal

Amplitude—within $\pm 3\%$

Phase —within $\pm 2^\circ$

Mutual Delay Time Difference of Y, I and Q Signals (at center of rise)

Between Y and I—less than 0.05 μs

Between Y and Q—less than 0.05 μs

Aperture Correction

Horizontal Boost Frequency—2.5 MHz ± 0.3 MHz

Range—+2 to +6 dB variable

Deflection Geometry

Within 2% using EIA linearity chart

Registration Error

CAMERA SPEC

3 Zone 1 (circle—to 0.8 picture ht.)

within 0.1%

one 2 (circle—to picture width)

within 0.3%

one 3 (elsewhere)

within 0.6%

Power Source Voltage Variation

AC Power Pack Input—

100/120 volts version $\pm 10\%$

200/240 volts version $\pm 10\%$

Battery Power Input—

Nominal ± 9 volts—range ± 8.4 to 11.2V

Dark Shading

Less than 2% when measured at 7.5 IRE units and after gamma a border of 10% around the edges is ignored.

Ambient Temperature Range

-10°C (14°F) to 45°C (113°F)

Environmental Temperature Variation

Stability is specified as follows for a $+10^\circ\text{C}$ ($+18^\circ\text{F}$) variation within the specified ambient temperature range.

Output video — $\pm 2\%$

Pedestal level — $\pm 2\%$

Carrier Leakage —less than 10 mV P-P

Registration —within $\pm 0.2\%$

Power Consumption

DC voltage $\pm 9.0\text{V}$ —approx. 29 watts

Weight (approx)

Camera with Viewfinder —7.5 kg (16.5 lbs)

Hand Grip —.24 kg (0.5 lbs)

Fuji 10X lens

w/iris servo —1.6 kg (3.52 lbs)

Shoulder Pad —0.8 kg (1.76 lbs)

Total 10.14 kg (22.28 lbs)

Dimensions

Width 140 mm (5.51")

Height 225 mm (8.86")

Length 362 mm (14.25")

Ampex Corporation reserves the right to change specifications without notice and without obligation. These specifications supersede all previous specifications, stated or implied.

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