

How To Blow Up Speakers

Community Loudspeakers puts out a document called "Recommended CD's for Demo Use." It is a list of CD's that they "successfully used for demos which will bring out the best qualities of good loudspeaker systems (or point out the faults in poor quality speakers)."

One such CD is the Crown SASS Demo Disc:

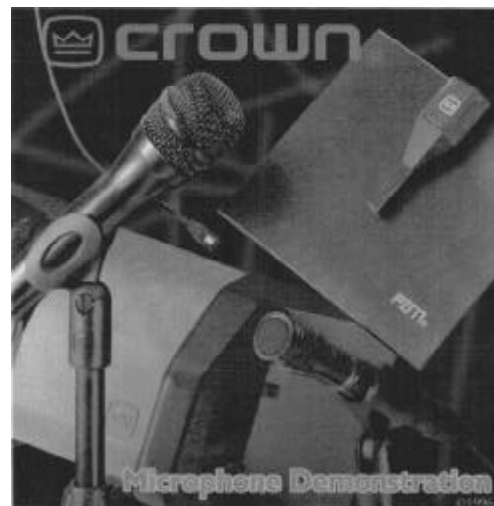
Track 37 Fireworks

Track 40 Harley-Davidson Motorcycle

Track 42 Jets Takeoff

Community says, "Play these three tracks of sound effects real loud and you'll blow up almost any competitive loudspeaker system. Of course, Community loudspeakers have the PowerSense[tm] protection circuitry in the crossovers, so they will survive the ordeal."

The SASS demo CD has been discontinued, but the fireworks and motorcycle tracks can be found on the Crown Microphone Demo CD, which is currently available. If you'd like a copy please send \$4.95 for shipping and handling to Literature Dept., Crown International, 1718 W. Mishawaka Rd., Elkhart, IN 46517.



Crown Headworn Mic Enhances Sarah Brightman Concert



Sarah Brightman From <http://www.sarah-brightman.com/video01.html>

Sarah Brightman, a skilled and compelling soprano, performed an exciting concert named "One Night in Eden," broadcast on PBS June 13. According to PBS, the concert "takes viewers to musical paradise, exploring a diverse range of musical styles, from *Titanic* and the Bee Gees to Puccini..."

During the concert, Sarah sang through a Crown CM-311A Differoid headworn mic. It was mounted a few inches in front of her mouth, rather than touching her lips. This made the CM-311A act like a conventional stand-mounted mic, with a more natural sound free of breath pops. It also kept the mic out of the singer's face. Feedback was not a problem in this application, so the distant placement worked well.

Sarah starred in the Andrew Lloyd Webber musicals *Cats*, *Requiem*, and *Phantom of the Opera*, and recorded several top-selling hits such as "Who Wants to Live Forever" and "Time to Say Goodbye."

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Serafine Says SASS Is Fine



SASS-P MKII

Hollywood film-sound designer Frank Serafine had some good things to say about his recent use of the Crown SASS-P stereo microphone. We spoke with him recently about his work.

We heard you're using the SASS-P for motion picture work?

Oh yes, I am. I use it for recording ambiences. The mics are very sensitive and pick up sounds for miles. The ambiences they pick up are really nice.

Both indoors and outdoors?

Yeah, anything I want super high resolution to. It's an overall really good mic for out in the field, or for big dynamic sounds.

Are you using the original SASS-P?

Yeah, I've had it for about 15 years.

What are some typical ambiences you might record?

Oh, frogs in Florida, trains, crickets, playgrounds, school ambience... lots of things like that.

Are you running into any hiss or noise problems with it?

No, not really.

Do you have to EQ the signal?

No, I don't do much of that either. I try to get the best sound I can on the spot. The positioning or the way I mike things has a lot to do with the way the sound is used.

We appreciate your time, Frank.

No problem!

CM-700 Rave Review



CM-700

Here are some email quotes from Rip Rowan, Editor of the on-line recording magazine, *ProRec*. Pro and Home Recording Resources on the Internet:

"[The CM-700's] sound so great... My choice for overhead and acoustic guitar was SM-81s. I couldn't believe my ears... I'm blown away... I'm shocked... I'm floored... I'm amazed... Excellent mic... Way underpriced. I'm sold."

"Did more tracking today with them. I may get a Neumann KM184 for a day just to compare. These

Rowan published the following review of the CM-700 on *ProRec* (reprinted with permission). The web site is at <http://www.prorec.com>.

I was fortunate to receive a matched pair of Crown CM-700s for review almost two months ago. I have spent the better part of those months making extensive use of these microphones, and I



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Rip Rowan

sound better than any small diaphragm condenser I've ever used. Wonderful! Fantastic! Clear highs, never brittle, nice rise about 6K, smooth, not metallic. Better hands down than an SM81, which is a compliment."

am happy to report that we have a serious more-for-less contender in these mics.

Crown has produced the CM-700 for some time now, but only recently began shipping these as matched pairs. The matched set includes a stereo mic mount for X-Y applications. Retail for the pair is about \$580, and can be found on the street for less than \$450.

Just the Facts

The Crown CM-700 is a single pattern cardioid condenser microphone. The operative word in any description of this mic is flexibility. Crown has designed the CM-700 to serve virtually any application where a cardioid microphone would be suggested.

Two bass rolloffs are provided: a low-cut setting provides a gentle slope below 110 Hz, while a rolloff setting gives more bass-reduction with a steep cut below 110 Hz. I thought these were misnamed. The cut provides a gentle rolloff, and the rolloff provides a sharp cut. [Both switch positions have a gentle rolloff, but the "rolloff" setting starts at a higher frequency — Ed.]

Specifications suggest a fairly middle-of-the-road mic. Self-noise (21 dB SPL, A-weighted) and signal-to-noise ratio (73 dB) put these mics generally below audiophile mics from Neumann, Schoeps and Earthworks. The mics also display [relatively] low-level sensitivity at -52 dB re 1 mW/Pa. These specs would suggest that this is not going to be the mic of choice for very quiet applications such as quiet acoustic guitar picking or other sensitive field recording applications. On the other hand, the mic can sustain 151 dB, unpadding, so it is easy to envision that this mic will be very useful for many rock, jazz, and country music applications such as drums, guitar cabinets, vocals, and other intense applications. [I've used the CM-700 on quiet acoustic guitar with no noise problems, but your results may differ — Ed.]

Frequency response indicates a relatively aggressive mic. The response rolls off slightly below 50 Hz, and a couple of treble bumps [2.5 dB — Ed.] at 6 kHz and 10 kHz suggest a mic with a sharp top end and a relaxed bass performance.

The mic features a humbucking transformer - probably the primary reason the mic is less sensitive and slightly more noisy than other competitors. However, I'm a big fan of good-sounding transformers. I think that mics with good transformers often have a sweeter top end and a rounder bass response than many of the transformerless designs available.

My CM-700MP shipped with the optional CM-SM shockmounts. These simple but elegant



CM-700MP matched pair

shockmounts will fit many different condenser mics. I found them to be a good fit for my SM-81s. These little shockmounts are very cool, and provide a wireclip to hold the wire and keep the mic suspended properly in the shockmount.

The mics are quite small, the smallest cardioid condensers I own — about the size of Neumann's KM184. This makes it easy to get the mic into tight spaces. Also I noticed that the condenser element is right up against the protective wire mesh - you can get that element within a couple of millimeters of the sound source! And with its high maximum SPL, you don't have to be afraid to just get the mic right up there against the drum or speaker. Of course, with an element so exposed I imagined this microphone would

have a pretty powerful proximity effect, which was borne out in testing.

Crown also ships a windscreens with the mic. It's the usual "afro" looking egg-shaped screen found with many mics. [A hoop-type pop filter is recommended for vocal recording -- Ed.]

Studio Testing

Crown was generous enough to ship the CM-700s on the first day of a week-long set of sessions cutting rhythm tracks for an upcoming release by Four Mile Mule, a popular Dallas roots-rock/country band. I immediately popped the mics up over the drums as overheads and started dialing in sounds — probably the most typical application for this mic. Actually, I found this to be the best-sounding drum miking kit I've ever used: SM-57 and Marshall MXL-2001 on snare, AT-Pro25 on kick, SM-81 on hats, AT-4050s on toms, and the CM-700 MPs as overheads. We achieved some remarkably fat and tight drum sounds that day.

As I have gone forward into mixing the drums, I find myself usually starting with the drum overheads full-up, and dialing in the close-miked drums to add a little beef. This is in sharp contrast to other mic kits I have used on drums — I have previously used my matched AT-4050s as overheads, and their aggressive sound tends to make cymbals too harsh to put forward in the mix. These CM-700s have an aggression too — but the treble boost is shifted up an octave above the 4 kHz boost of the 4050s. Cymbals have a clear and bright sound — and as I suspected, the humbucking transformers provide a smoothness in the cymbals that my transformerless AT4050s cannot provide. These are sweet-sounding mics! So, these mics first application as drum overheads passed with flying colors.

Next came acoustic guitar. I reached for my SM-81 — usually the mic of first choice when recording an acoustic. We got a good sound, and I was tempted to just run with it. Then we threw up the CM-700s, and I was really surprised at what I heard. The CM-700s actually sounded better — and, dare I say, more accurate than the SM-81. I think that what I was hearing was the diminished treble response at 4 kHz and the accentuated response at 6-10 kHz, because the SM-81s are clearly flatter than the CM-700s. However, the CM-700 sounded less harsh and more “fluffy” than the SM-81. The guitar sounded smoother, rounder, less harsh. We recorded acoustic guitars for the project largely with the CM-700s, backed up with the SM-81 for quiet parts as well as my trademark “mystery mic” secret weapon for lo-fi sounds. For quiet acoustic guitar, you want a more sensitive microphone, but for strong rhythm parts, the CM-700 is outstanding.

We also used the CM-700 on electric amps with mixed results. I am just not a fan of using condenser mics on guitar amps. The key exception to that is the AT-4050, which is an OUTSTANDING mic on any guitar amp. The applications where the CM-700 worked well were room miking of

the guitar amp, where you really want to hear the sound of the room. These are applications better suited to omni mics anyway. One nice thing about using the CM-700 in a room is that it seems to exhibit a gentler cardioid rolloff than my other cardioid mics — it’s less “pinched” and more “open.” I think this mic could also be excellent at recording that full-range Marshall distortion sound that’s popular now in heavy guitar music, but we didn’t have an opportunity to try this mic on an application like that. This could also be a great bass amp microphone. Unfortunately we didn’t have the opportunity to try that either.

Finally, we tried the mic on vocals. Now, I’m a big believer in the use of large-diaphragm condensers on vocals, so I was a little skeptical of an inexpensive small-diaphragm condenser on vocals. But, I’d be a fool not to try it.

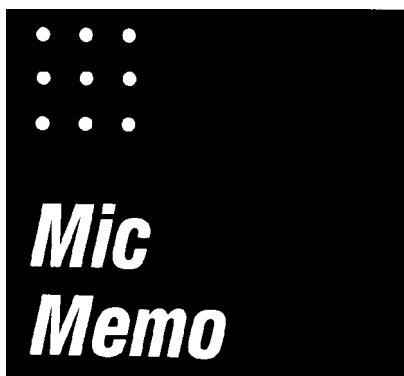
I was really surprised how good this mic sounds on vocals. I guess I shouldn’t be: the mics nice, smooth treble boost at 10K is typical of the great vocal mics like the C-12 and U47. The CM-700 isn’t as warm as those tube mics - it lacks the complexity and richness in the midbass and low midrange (300-500 Hz) of these large-diaphragm tube models - and it is fairly bassy. The

effect is slightly “scooped out” with a nice, bright, smooth treble. I was right about the proximity effect. This mic’s proximity effect can really add a lot of bass! And with that diaphragm way up front you must be VERY careful with plosive consonants. A poorly-delivered “P” can really wreck your day. For that reason I would recommend using a good pop filter at all times, and keeping the singer from singing “right down the tube.” For an intimate vocal sound, the CM-700 can really put the singer right in your lap.

Conclusions

In the end I was very pleased and amazed at the sound of these mics. Specifications only tell part of the story. No numbers had prepared me to hear the truly beautiful sounds that this mic is capable of producing. From percussion to guitars to bass to vocals, this mic is a strong contender in virtually any application, particularly close miking of loud, powerful sounds. Before buying any other small-diaphragm condensers, you really need to listen to these mics. The CM-700s are a strong contender — and they have earned a permanent place in my studio.

Now Available: The Mic Memo CD-ROM



Now in stock at Crown is the *Mic Memo* CD-ROM. It features twenty years of *Mic Memo* issues — a tremendous database of applications and infor-

mation on Crown microphones. The issues are arranged in chronological order. Whatever your application, you should be able to find useful tips here.

PZM pioneer Ken Wahrenbrock was the first editor of the *PZM Memo*, which later became the *Crown Mic Memo* as Crown developed a full line of microphones.

To search for a particular topic in this document, you can use Windows’ FIND function. Type <CTRL> F and enter the word or words you are searching for.

Want to know more about stereo applications? Do a search for “stereo.” Repeat until you find all the places that the word “stereo” was mentioned. Are you interested in applications for the GLM-100? Search for “GLM” or “GLM-100.” All the app notes for this microphone will appear, one at a time.

This document, “20 Years of the Crown Mic Memo,” is also on the Crown web site at <http://www.crownaudio.com>. Click on “Microphones,” then click on “Info & How To.” We hope you find the compilation an invaluable tool.

Microphones Available From Crown



CM Series

CM-700 Cardioid condenser, 30 Hz - 20 kHz, for high-quality recording or P.A. **CM-700MP** is matched pair.

CM-200A Handheld cardioid condenser mic for stage vocals/instruments. Warm, smooth, and articulate sound. Very low handling noise and pop. Low-Z balanced.

CM-310A DIFFEROID® Handheld differential condenser mic for stage vocals. Cardioid. Warm, smooth sound. Extremely high gain-before-feedback. Low-Z balanced.

CM-311A DIFFEROID Headworn differential condenser mic for stage vocals and sports-casters. Extremely high gain-before-feedback. Battery belt pack. **CM-311AE** connects directly to 9V wireless microphone transmitter. **CM-311AHS** mounts on Sony MDR-7506 headphones.

CM-312A Headworn hypercardioid mic for stage vocals and sportscasters. Small and light. Good gain-before-feedback. Battery belt pack drives mixer or transmitter. **CM-312AE** connects directly to wireless microphone transmitter. **CM-312AHS** mounts on Sony MDR-7506 headphones.

CM-30 Miniature supercardioid condenser mic for inconspicuous overhead miking of choirs, orchestra sections, theater stages, conference tables, audience reaction. Electronics mount in electrical box.

CM-31 Same as CM-30 but with cylindrical electronics interface and XLR connector.

CM-10 Mini omni lavalier, phantom powered. **CM-10E** is same but without connector, for wireless microphone transmitter.

CM-150 1/2" omni condenser for free-field sound measurements, sound-level meter, and pro recording applications. **CM-150MP** is matched pair.



PZM Series

PZM®-30D Studio PZM with switchable dual frequency response (flat or rising). 5" x 6" boundary plate. XLR connector.

PZM-6D Low-profile PZM for conference or plexiglass panel. Switchable dual frequency response (flat or rising). 2" x 3" boundary plate. XLR connector on 15 foot cable.

PZM-20R Flush-mount PZM fits into a square cutout or 4" x 4" electrical-outlet box for permanent installations. Use one mic for up to eight people. Screw-terminal output.

PZM-185 Tabletop, handheld or adapter-mounted microphone. Built-in power-supply interface, phantom power or internal battery. Fiber-reinforced, high-impact plastic body and boundary. 7" long. XLR connector.

PZM-10 Security and surveillance mic. Inconspicuous. Mounts in drilled hole, XLR output. **PZM-10LL** is line level, 12-24V DC powered.

PZM-11 Security and surveillance microphone. Inconspicuous. Mounts in electrical box. Screw-terminal output. **PZM-11LL** is line level, powered by 24V AC, DC, or phantom.

PZM-11LLWR is water-resistant, line level, powered by 24V AC or 12-24V DC. Mounts in electrical box.



SASS Series

SASS*-P MKII PZM stereo microphone. Wide, smooth frequency response. Sharp and spacious imaging. Mono-compatible. No matrix box required. Battery/phantom powering. Low-cut switches. 20 Hz - 18 kHz. All accessories included.

SASS*-P MKII HC Same but without carrying case or accessories, lower cost.



LM Series

LM-201 Supercardioid lectern microphone with swivel mount for noise-free adjustment. Pop filter and shock mount. Low-Z balanced. Powered by phantom or 12-24V DC adapter.

LM-300A Economical and elegant dual gooseneck mic that retains its shape. Supercardioid condenser element. XLR output, low-cut switch. Optional metal-screen grille and LM-300SM Shock Mount.

LM-300AL Same as LM-300A but 5" longer.

LM-301A Same as LM-300A but screws onto a flange. Allows cable to exit downward or out the side.



MB Series

Five styles of surface-mounted, supercardioid mini mics. Some use MB-100 or MB-200 interface with programmable switching and sensing. Inconspicuous, affordable multi-miking for conference tables, security, distance learning, boardrooms, and courtrooms.



GLM Series

GLM-100 Miniature omnidirectional condenser microphone. High SPL capability. Reduced pickup of handling noise and wind noise. XLR connector on 8' cable. 20Hz - 20kHz. Model **GM-100E** comes without connector for connection to wireless microphone transmitter.

GLM-200 Miniature hypercardioid condenser microphone. Increases gain-before-feedback, reduces pickup of leakage, background noise and room acoustics. XLR connector on 8' cable.

PCC Series

PCC*-160 Supercardioid surface-mounted microphone for stage floors, lecterns, and news desks. Increases gain-before-feedback and rejects sounds to the rear. XLR connector on 15-foot cable. Black or white.

PCC-170 Same as PCC-160 but attractively styled for conference-table use. Mini XLR connector on rear or stereo phone plug on bottom. **PCC-170SW** has on/off membrane switch.

PCC-130 Same as PCC-170 but with cardioid element and smaller. **PCC-130SW** has on/off membrane switch.

Microphone Warranty

Crown's professional microphones are guaranteed unconditionally against malfunction from any cause for a period of three years (one year for Sound Grabber) from date of original purchase. Should one of our microphones malfunction, it will be replaced or repaired at our expense, including all U.S. round-trip shipping. This warranty does not cover finish, appearance items, cable or cable connectors. This warranty does not cover normal wear and tear, malfunction due to abuse or operation at other than specified conditions. See your Crown dealer or representative for complete warranty details or contact Crown direct at 1-800-342-6939.



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Information Exchange

Your ideas on how to use Crown microphones are important to us, and to the readers of Mic Memo. Could you let us know what you are doing with your microphones? Write or sketch your idea here, tear off this portion, fold and tape. No postage needed. You may also send the information via e-mail to bbartlett@crowntl.com

I hereby authorize use of this material in the Crown Mic Memo. You may may not use my name.

Signature _____

Name _____

Company _____

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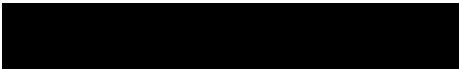
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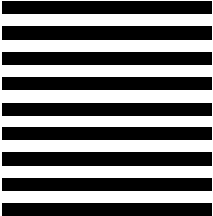


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