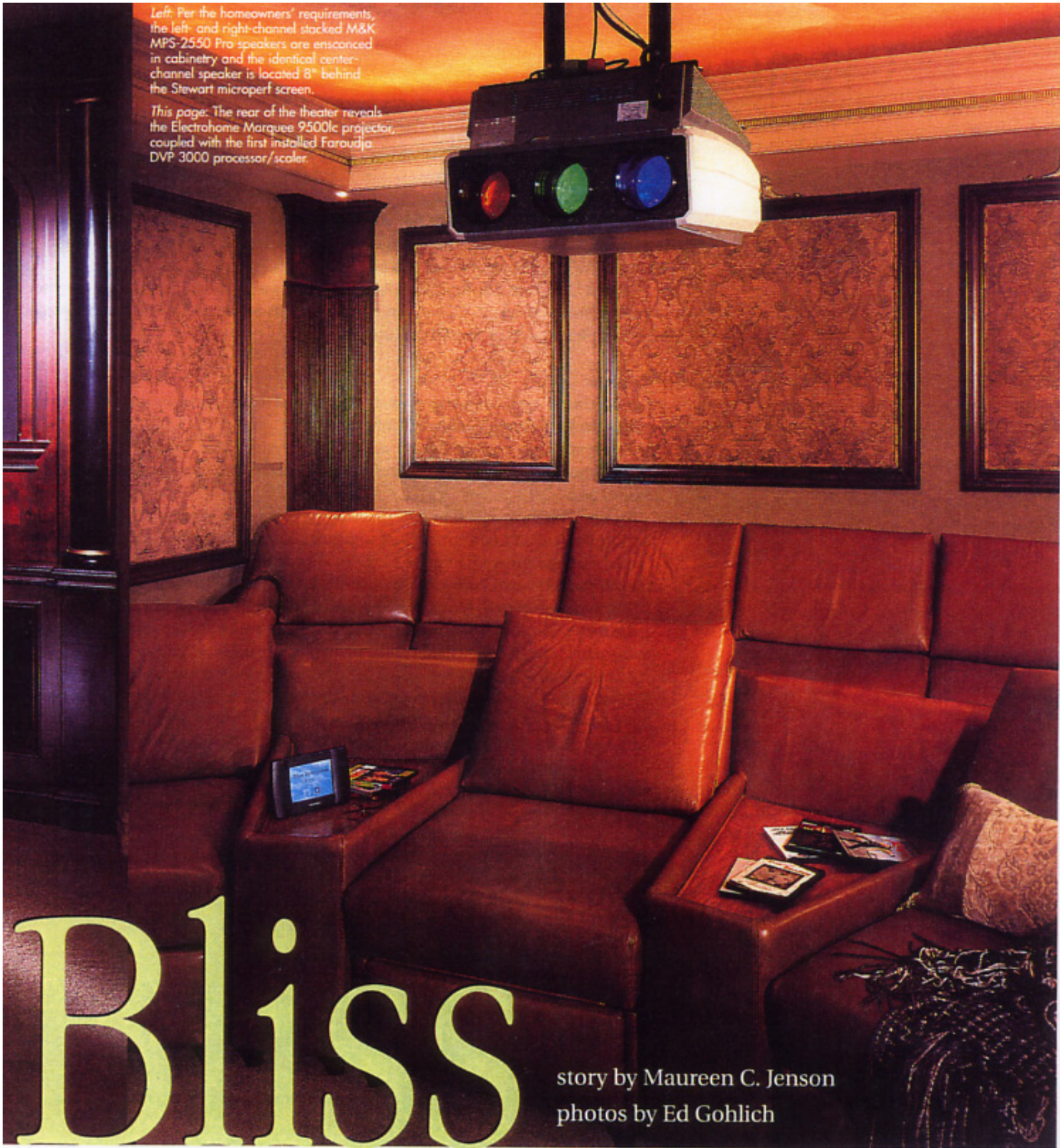


# The Theater

*A Southern California home theater is the recipient of three audio/video technological firsts.*



*Left:* Per the homeowners' requirements, the left- and right-channel stacked M&K MPS-2550 Pro speakers are ensconced in cabinetry and the identical center-channel speaker is located 8" behind the Stewart microperf screen.

*This page:* The rear of the theater reveals the Electrohome Marquee 9500lc projector, coupled with the first installed Faroudja DVP 3000 processor/scaler.

# Bliss

story by Maureen C. Jenson  
photos by Ed Gohlich

**A** dedicated home theater has become such a valuable real-estate commodity that, when Chrissy and Ray Boucher were house-hunting in Southern California, the new development they wanted to settle in already sported a stunning home theater in its top show-model.

"We loved the design and floorplan, and we especially thought the

home theater would get plenty of use," said new homeowner Ray.

So much use, in fact, that after the couple bought their home in the development, they initially wanted an exact duplicate of the theater, down to the components and aesthetic design.

But there was little time: the Bouchers were about to close on the house and needed to get their own theater underway. That's when they met Robert and George Bliss, of Bliss Enterprises Custom

# Gear Guide

## Home Theater

### Video Sources

Pioneer Elite DV-09 DVD player

Sony SLV-1000 Hi-Fi VHS VCR

### Display

Electrohome Marquee 9500Lcu 9" CRT projector

Faroudja DVP 3000 processor/scaler

Stewart Filmscreen 100" x 54" THX microperf screen

### Receiver

Sony SAT-A4 (UHF, AC-3 output)

### Surround Processor/Preamp

Lexicon MC-1

### Power Amps

Cinepro 3k6 Mk.II 375Wx6 (2)

Cinepro 3k6 Pro fan pack (2)

### Speakers

M&K MPS-2550 Pro LCR (6)

M&K SW-95 Reference in-wall (4)

M&K MX-350 THX subwoofer (2)

Clark Synthesis TST 229F tactile sound transducers (7)

### Cables

Monster OMC speaker cable

Canare LV-5CSB 300MHz RGB cable

Canare LV-61 custom cable

### Misc.

Crestron STS-C color touchpanel

Lutron GRX2503AWH lighting controller

Niles HDL-4 4-position high-power speaker selector (2)

Cinepro Power Light 1800 power conditioner

## Family Room

### Video Sources

Faroudja DV1000 DVD player

Philips VR988P50 SVHS VCR

### Audio Sources

Harman/Kardon FL8350 5-disc CD changer

Pioneer Elite PD-F19 300-disc CD changer

### Display

Mitsubishi VS50 Diamond Series 50" HDTV

### Receivers

Sherwood R945 (Dolby Digital, DTS)

Sony SAT-A4 (UHF, AC-3 output)

### Preamp

Audioaccess PX-600 (whole-house distribution)

### Power Amps

Audioaccess PX-612 12-channel multi-zone (2)

### Speakers

M&K S-125 LCR (2)

M&K S-125c center

Energy ES-10 subwoofer (100W amp)

RBH A610 in-wall (10)

Rockustics Rocky Jrs. (20)

### Cables

Canare LV-61 custom cable

Straight Wire 16-gauge speaker cable

### Misc.

Audioaccess MC-1 RS232 interface card

Panamax Max 6 surge protector

Crestron STS-C Color touchpanel

Home Theaters. Explained George Bliss, "As in most developments, the model homes are decorated and equipped to demonstrate the possibilities of each floorplan. The performance criteria, acoustics design, and whole-house control are implemented to market the home, not the theater itself; in other words, all show and no go.

"Our first step was to educate the client. For this reason our initial meeting was held at a theater we had recently completed in the same development. Before explaining the details of the room, I handed Ray the Crestron controller and didn't say a word. He touched the panel and 30 different commands were implemented with just a single touch. 'We'll need one of these' was his only remark."

Robert Bliss had Ray load the DVD of his choice, then sat him down. After only three minutes of *Apollo 13*, Ray was convinced. His only request was that the project be completed on time and within budget.

## Criteria

Ray Boucher is a man who knows what he wants and makes decisions quickly; his theater criteria for Bliss Enterprises were as follows:

*Performance:* A state-of-the-art audio/video system able to reliably exceed THX sound-pressure levels in an acoustically accurate room with complete light control and ease of use.

*Design:* The theater had to complement the rest of the Bouchers' décor while still having the feel and performance of a theater. Acoustical treatments had to be concealed and equipment had to be easily accessible for service and upgrades. Also, the theater had to accommodate 10 guests—the same number as the formal dining table.

*Whole-house control:* Music available and controllable throughout the house.

*Delivery:* The home theater had to be delivered "turn-key" (completely ready to go, in layman's terms) to the client within 16 weeks from the day the contract was signed.

Another individual who was going to be instrumental to the success of the project's aesthetic design and cabinetry was Neal Parsons of Home Theater Resources. George Bliss gave Parsons a detailed description of how Boucher wanted all equipment enclosed in rich cabinets, and the acoustical treatments hidden in a classical design. Parsons designed a color board and a 3D model of the room; the Bouchers hired him on the spot.



The equipment is mounted on a Middle Atlantic rack under the screen. Two 4" fans over the Cinepro amplifiers provide ventilation.



On either side of the screen, storage for a total of 600 DVDs easily pulls out from the cabinetry.

### The Starting Point

As the lead time required for making the seats is the longest, the first theater dimensions to be determined were the size and height of the seats.

"The sightlines to the screen, and the seating placements, are vital considerations," said George Bliss. He consulted with nationally renowned video calibrator William Phelps to calculate the exact positions of the projector and screen.

Using computer software, Phelps keyed in the seat and eye-level heights for the two tiers of seats, whose dimensions Bliss had given him. The front and back rows of seats place viewers' eyes 44 and 56 inches from the main floor, respectively. From this information, the optimum screen height was determined. For proper setup with this screen height, the projector was mounted 29 inches from the ceiling.

Added Bliss, "Some installers tend to mount a projector as close to the ceiling as possible, so that it is not protruding down into the room. But there is a compromise in doing this. With a projector mounted too close to the ceiling, it is impossible to get sharp focus on the bottom corners because, at that angle and height, the outside portion of the lens starts to distort the image on the screen."

### A Theater of Firsts

Most custom installers think the job they're working on at the moment is sensational, even groundbreaking. But three of the components used in the Boucher's theater were hot off the manufacturers' presses—true "firsts."

The first "first" was the premiere installation of the Faroudja DVP 3000 processor/scaler, a model that became available only one week before the project's completion. Making maximum use of the Faroudja's capabilities requires a projector with 9-inch lenses. Commented Robert Bliss, "We combined the DVP 3000 with the Electrohome Marquee 9500Lcu 9-inch CRT projector, and used a 100-by-54-inch Stewart THX Ultramatte 150 microperf screen. To view DVD at beyond-quadrupled rates [1080p] on a large screen is incredible. One anamorphic setup is all the Faroudja DVP 3000 needs. All of the aspect-ratio scaling is done within the processor."

The theater's second "first" was in the choice of speakers. Bliss required that the theater

be capable of a maximum sound-pressure level (SPL) of 115dB—10dB higher than the already generous requirements of THX! But because the theater was relatively small and its speakers had to be enclosed in cabinets flanking the screen, the speakers themselves couldn't be too big.

At a THX training session, Bliss had heard about a prototype speaker, the MPS-2550, being developed by M&K's Pro Division. He spoke to M&K, who were interested in testing the speaker to see if it would meet Bliss's needs. To meet the SPL requirement, the MPS-2550s were stacked in pairs using a specially designed brace. Thus configured in a package only 26 inches tall by 12 inches wide, the MPS-2550s hit 117dB. Commented Bliss, "From a dollar/performance perspective, M&K and the MPS-2550 can't be beat."

Which led to the third and final "first." M&K said they would need up to 500 watts of unclipped peak power for each speaker in each array to meet the



To meet the required SPL of 115dB, two M&K MPS-2550 Pro subwoofers were braced together for each of the left, center, and right channels. This unusual configuration resulted in a total system output increase of 6dB per channel.



A special accordion-style light blocking window panel was treated like the rest of the room to aid acoustics and the ambient light problem.

# Resources

## Audio/Video Design & Installation

Bliss Enterprises Custom Home Theaters  
5533 Spanish Oak Lane, Suite G  
Agoura Hills, CA 91301  
tel. (818) 706-2794  
fax (818) 706-3751  
www.blissenterprises.com

## Cabinet & Theater Design

Neal Parsons Home Theater Resources  
13250 Moorpark Street, #4  
Sherman Oaks, CA 91423  
tel. (818) 789-3020  
fax (818) 789-3051

## Acoustical Design Consultation

Tony Grimani  
Performance Media Industries, Ltd.  
862 Sir Francis Drake Boulevard  
San Anselmo, CA 94960  
tel. (415) 454-2087  
fax (415) 454-2171

## Video Calibration

William Phelps  
W.M. Phelps Consulting  
2711 Louis Road  
Palo Alto, CA 94303  
tel. (650) 493-4742  
fax (650) 494-6728

## Wall Upholstery

Alex De Laguarigue  
4485 Libbit Avenue  
Encino, CA 91436  
tel. (818) 788-0199  
fax (818) 788-2991

## Ceiling Artwork

Susan Krieg  
11311 Huston Street, #4  
North Hollywood, CA 91601  
tel. (818) 769-7143



The homeowners' only comment upon tapping the Crestron CTS-C touchpanel: "We'll need one of these."

SPL goal. Enter Eric Abraham of Cinepro. George Bliss spoke with Abraham about the project, and Abraham felt they had a prototype amplifier that could do the job.

Hooked up to a dedicated 30-amp service, Cinepro's 3k6 Mk.II 6-channel amp can deliver 3300W. The company claims that the 3k6 can deliver a finely detailed presentation due to its simple signal path: only three voltage gain stages and minimal negative feedback. Abraham said that, to meet the Bouchers' deadline, he would put a rush on the first production pair. He delivered. The total available system power with subs is 7300W, with a peak capability of 10,400W.

*[We assume that the high SPLs specified here were intended to provide maximum headroom for peaks—to prevent the system from ever being driven into overload. Readers certainly need to be aware that average SPLs anywhere near this high will definitely present a serious risk to your hearing. Sudden peaks at certain frequencies and very high levels are also bad news—which is why you wear ear protection on a firing range. You should wear such protection in any situation where continuous very loud sound, or sudden very loud sonic impulses, are anticipated.—Ed.]*

## The Next Step

The next step was to determine the layout of the audio system. With the help of Tony Grimani—formerly of Lucasfilm, Ltd.'s THX Division and currently with Performance Media Industries—the room's dimensions were run through a computer analysis to see where there might be problems with room modes and boundary effects. The results also went to cabinet designer Neal Parsons so he could see where the speakers and subwoofers would be positioned, and helped the installers decide on the materials and locations of the room's absorptive panels and diffusive and reflective surfaces.

It was determined that the back wall of the 10-inch-deep cavity behind the screen would be lined with 4-inch-thick studio-grade acoustical foam to absorb sound. The center-channel speaker, identical to the left and right channels, is positioned in the middle of the cavity 8 inches behind the microperf screen. A third of the way down the room on both side walls are 2-inch-thick Fiberglas panels covered with ¼-inch acoustical foam for more absorption. The rest of the room's surfaces are diffusive.

A pair of double doors with glass inserts in the left wall also had to be taken into account. Also, because of local building codes, the theater had to have a window to the exterior of the house. Neal Parsons designed a special accordion-style light-blocking panel of the same materials and acoustical treatment as the rest of the room. Said George Bliss, "We didn't want to overdamp the room; we wanted to keep the rear of the theater live, yet of course absorb first reflections."

## Preconstruction

With the seating and cabinetry already being built and the major gear decisions made, it was time to start working on the infrastructure.

The first consideration was the power supply. Three dedicated 30-amp runs of all-copper wiring were installed to power each of the two Cinepro 3k6 Mk.II power amps. A Cinepro Powerlight 1800 uses the remaining circuit to condition the power line and protect the other equipment. There are also two dedicated 20-amp runs to each of the two M&K 350THX subs and one dedicated 20-amp run for the projector.

The next project was to wire the lights. A three-zone Lutron Grafik Eye system provides the Bouchers with a variety of effects, including a slow, theatrical phase-out of lights at movie time.

The riser for the second tier of seats is 8 inches high, constructed of a frame of two-by-sixes and floored with double ¾-inch MDF, all secured with wood screws and glue to damp vibrations. Added George Bliss, "Ray wanted to literally feel the earth move. So we wired each seat location with Clark Synthesis Transducers to provide actual seat movement during low-bass implosions, for a truly earth-moving theater experience.

"For surrounds, two pairs of M&K SW-95 in-wall speakers were located on either side of the two rows of seating, 24 inches above ear level."



The family-room home theater houses another M&K surround-sound system in addition to the Audioaccess whole-house music system and the Pioneer 300-disc CD changer.

## Installation

The Bouchers were less than two weeks away from closing on their house. Almost all of the gear was ready to go, except for the “firsts”: the speakers, amps, and processor/scaler. Source components awaiting installation included the Pioneer Elite Reference DV-09 DVD player and the Sony SLV-1000 Hi-Fi VHS VCR. It was time to concentrate on theater control.

The Crestron STS-1550C color touchpanel had been decided on during the initial demo. It took George Bliss about 50 hours to design and program a multi-layered menu that would handle this system’s sophistication with the ease of use the Bouchers required. Another Crestron touchpanel in the family-room home theater—a room on the same level of the house as the dedicated theater, but equipped with a more modest M&K surround system—extends the whole-house automation to this informal viewing area. The Bouchers’ requirements for a whole-house audio system were fulfilled by a 15-zone Audioaccess PX-600 audio distribution system, which delivers sound through 15 pairs of speakers throughout the house and garden. The system can be controlled by an Audioaccess keypad in each room.

After the Bouchers closed on the house, Neal Parsons installed the diffusive acoustical wall materials and the cabinets, the pilasters, and the frames for the absorptive panels. All of the woodwork was stained on-site. The staining process took about a week, during which time George Bliss was able to hang the projector, and install a Middle Atlantic rack system in the cabinets below the screen to house the electronics.

Commented Bliss, “This is one of the areas we take immense pride in: the cabling and detail. We designed the rack so it can fully slide out from the front wall. These are very complicated systems and require maintenance and service, not to mention upgradeability. Easily identifiable cabling makes troubleshooting simple. This type of attention to detail is often overlooked because it is not in plain sight. The video cables are color-coded Canare LV-61 and Straight Wire silver-S. The speakers are wired with Monster OMC.”

Next it was time for a visit from video calibrator William Phelps. After six hours of video calibration using a Philips PM5639 color analyzer, Phelps had tweaked the picture to perfection.

Robert Bliss was about to install the seats when Ray Boucher commented that the room was wonderful, but that the ceiling lacked “personality.” Neal Parsons brought in artist Susan Krieg, whose work has appeared in galleries, and who was intrigued to work creatively on a home-theater project. The soft, sunset hues she ultimately chose set off the room’s warm tones and rich cabinetry and detailing.

## Critical Seating

The Blisses manufacture their own theater seating. “Most hardwood frames are made of alder,” George Bliss said. “We prefer oak, which is stronger and more durable. We use ‘high-resiliency’ [HR] foam by Carpenter because it has a significantly longer service life than any other foam on the market.” The seats are made firm for proper circulation, with screwed-and-glued frames upholstered in high-quality, double-stitched leather. “Our crew can build almost anything,” Bliss remarked. “All they need is a sketch, a photo, or the dimensions.”

## Final Thoughts

After everything—the theater built and calibrated, the photos taken, the interviews taped—we sat down for a well-deserved break, and to finally sample what the theater had to offer. We enjoyed several cuts from Fleetwood Mac’s *Reunion* DVD. I thought that “Silverspring,” a track I’ve seen and heard often, had a smoother, more musical response than I’d heard in some time. When Stevie Nicks and Lindsey Buckingham shared their last emotion-filled glance, the entire room emitted a collective “Wow!”

I asked Ray Boucher to sum up his feelings about the experts who brought his home theater to reality. Without hesitating, he replied, “Look, I deal with business professionals every day of my life, and I’ve never worked with a more professional, honest, enjoyable group of individuals who truly deliver. Make sure you print that.”

With pleasure.



Equally instrumental in the success of the theater are, from left to right: Neal Parsons, Ray and Chrissy Boucher, Robert Bliss, Jr., Robert Bliss, Sr., George Bliss, and Greg Spetter.