



## **Microphone Choices: The Shure Thing Continues (Bullets Have Hearts, Too)...**

**“At The Harmonica Microphone Bench” with Fritz Hasenpusch, [www.harmonicassessions.com](http://www.harmonicassessions.com)**

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As we've seen, 1939 was a big, BIG year for Shure Bros. It saw the emergence of what would become arguably the most recognizable icon of the post-1940 microphone world: the Shure 55 (lovingly referred to here as the “Fat Elvis” mic). In the shadow of this microphonic monolith walked its two junior stable mates, the 705A “Rocket” and the 7A, Shure's first true “bullet” designs. The significance of their designs was influential, far-reaching, and in some ways, groundbreaking both within and beyond their industry.

A quick look at the Shure 55 and the road that brought it to us: Live audio reinforcement has always been problematic, but imagine a performing world without unidirectional microphones? Not being able to isolate sound sources to the front of a microphone would be an acoustic nightmare. That's the way it was in the beginning. Early attempts at developing a mic with a focused frontal pattern involved combining an omni-directional element with a bi-directional element. Engineers found that when summed, the two patterns yielded the desired unidirectional pattern. Unfortunately, housing these components together under one roof produced some HUGE (if charmingly exotic) microphone designs. It was also found that combining the two elements had adverse effects on their frequency responses, rendering less than natural results. Along comes an engineer by the name of Benjamin Baumzweiger (I am NOT making this up!) whose mission it was to create the world's first true cardioid unidirectional dynamic microphone utilizing a single cartridge: The Unidyne was born, Shure became a major player in the field of microphone technology, and Mr. Baumzweiger changed his name to Ben Bauer. There lies the importance of the Shure 55...

Back to 1939: While Shure was releasing its new 705A and 7A microphones utilizing piezoelectric “crystal” elements licensed from the Brush Development Corporation of Cleveland, Ohio (like most everybody making crystal mics at that time), design patents were being issued to a Leslie H. Wadsworth for a new acoustical “magnetic unit”. Who? What? L.H. Wadsworth (followed two years later by Grenville B. Ellis) was one of the first to patent a design for a transducer type that would become known to harp players as the heart of the Shure Green Bullet's signature sound, the Controlled-Reluctance and Controlled- Magnetic microphone element. It would be ten years before this type of magnetic transducer would see production for public consumption in some of Shure's best-known communications mics, but it was World War Two that served as their proving grounds. Several companies including Shure contracted to supply microphones to the Armed Forces utilizing the CR/CM type of design. Good thing, too! Could you imagine having to rely on a microphone with a temperamental crystal element to send life-or-death communications from a soggy tropical rainforest or sleet-covered mountain range?

Thankfully, the magnetic design acquired a reputation for being as rugged as the G.I.s who used it...

Next time, the origins of the Controlled-Reluctance / Controlled-Magnetic design, and some interesting (surprising) comparisons, on the MIC BENCH.

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For pictures and descriptions of most of the microphones listed visit  
[http://www.harmonicamasterclass.com/vintage\\_collection.htm](http://www.harmonicamasterclass.com/vintage_collection.htm)

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