

# Basic Detail Report

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## Electric guitar

### Date

1934-1935 ca.

### Primary Maker

Vivi-Tone Company

### Description

This guitar is based on Loar's U. S. Pat. 2,020,557 (filed 1934, awarded 1935), in which electric amplification is combined with an acoustic guitar body. The design offered a player the option of switching between electric and acoustic amplification, or combining both, with metal posts through the bridge that transfers vibrations from the strings to the bar-armature. With the posts raised, the bridge comes in contact with the soundboard for exclusively acoustic amplification; with the posts lowered to contact the metal bar-armature, both acoustic and electric amplification is engaged, and with the posts lowered completely, the bridge is lifted off of the

soundboard and supported only by the bar-armature for exclusively electric amplification. The back of the guitar, made from arched spruce, with two f-shaped soundholes, incorporates another of Loar's ideas, covered more extensively in U. S. Pat. 2,046,331 (filed in 1934 but awarded in 1936), to use the back of the instrument as a second soundboard by transferring bridge pressure from the top. Though Dennis Hartnett took good care of his ViVi-Tone instruments (mandola NMM 10809, mandocello NMM 10810, and this guitar), all three show signs of extensive use. Indentations on the bar-armature and wear to the screw-ends of the posts on the guitar pickup indicate that Hartnett also used the instrument for electric-only amplification, in addition to the electric/acoustic set up in which he left it. Hartnett's guitar is preserved with an amplifier (NMM 10812) by Webster Electric Company of Racine, Wisconsin, and an accompanying foot pedal. Electric (magneto-acoustic) guitar. Bridge fit in to slot in top, resting (over a white and black celluloid platform made from binding material) on a paramagnetic metal bar-armature, the vibration of which varies the intensity of the magnetic field between two pole pieces (each attached to opposite polar ends of a U-shaped permanent magnet), inducing an electric current in a wire coil-winding surrounding one of the pole pieces. The bar-armature is divided into two sections with unfriendly resonances using either a notch or a dividing block to prevent its own natural frequency vibrations from overwhelming other frequencies. Through differing divisions of the bar-armature, its total length, its thickness and width, and stiffness or elasticity, it is possible for the manufacturer to pre-determine the tonal qualities of the instrument. The electrical output of the magneto-acoustic unit is sufficient for use with headphones for

practice, or it can be fed into an amplified loud-speaker. Bar armature tuned to low F and C-sharp (tritone).  
Stringing: six steel strings Soundboard: two-piece spruce: medium grain broadening toward the flanks  
Back: two-piece spruce: fine grain on bass side broadening to medium at the flank, wide grain on treble side; slightly arched; two f-holes; recessed 11 mm from edge of ribs Ribs: 7-ply plywood, the outer layer birch, the inner layers mahogany, the outer veneer layer grain running perpendicular to plane of top and back; panel on bass side with nickel-plated steel plug; slides out for access to pickup unit Head: mahogany veneered with white celluloid on front faces Neck: mahogany; integral with head; rosewood stripe Heel cap: white celluloid Binding: white celluloid; black and white celluloid strips on inside edge of binding; on top only Fingerboard: ebony bound in white celluloid on sides but not lower end; 20 nickel-silver frets; single abalone dots behind 5th, 7th, 9th, , and 15th frets; triple mother-of-pearl dots, the outer dots smaller, behind 12th fret Nut: ebony Bridge: mahogany capped with ebony; nickel-silver-plated steel screws to adjust bridge height and pickup contact Tailpiece: cast aluminum with two openings and decorative outline cast with "Vi Vi Tone" in recessed lettering, screwed to lower rib with three nickel-plated steel dome-headed screws Pegs: six nickel-plated steel worm-gear machine tuners by Grover with convex head surfaces and decoratively cut plate outline Endpin: black bakelite; extends through tailpiece Soundhole: three conjoined circles in top where bridge feet rest on bar-armature; two f-holes on back Pick guard: imitation tortoise shell plastic raised on wood brace affixed to top with two steel dome-headed screws Lacquer: dark orange-brown sunburst

### **Dimensions**

Total guitar length: 983 mm (38-11/16") Back length (including ribs): 464 mm (18-1/4") Upper bout width: 247 mm (9-23/32") Waist width: 199 mm (7-27/32") Lower bout width: 331 mm (13") Rib height (including edging) at heel: 95 mm (3-3/4") Rib height, at waist: 95 mm (3-3/4") Rib height, at end block: 95 mm (3-3/4") Head length: 177 mm (6-31/32") Head width, top: 64 mm (2-1/2") Head width, bottom: 67 mm (2-5/8") Neck length (nut to ribs): 342 mm (13-15/32") Neck width, nut: 47 mm (1-7/8") Neck width, heel: 60 mm (2-3/8") Soundhole height: 38 mm (1-1/2") Soundhole width: 94 mm (3-11/16") Vibrating string length (nut to bridge edge): high E: 617 mm (24-9/32"); low E: 625 mm (24-5/8")