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NEWS RELEASE

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DETROIT'S NEW FORD FIELD OPTS FOR PRECISION DIRECTIVITY™ SPEAKERS FROM JBL PROFESSIONAL

Six Main Arrays of PD™ Series Speakers Provide World-Class Sound for \$500,000,000 Stadium

NORTHRIDGE, CA – JUNE 12, 2002 – In 1999, the city of Detroit and the Detroit Lions announced the construction of their new stadium in downtown Detroit, Ford Field. Three years later, on September 24, 2002, the Detroit Lions hosted the Green Bay Packers in the inaugural of the new \$500,000,000 facility. Ford Field was designed to be totally first class in every detail, from the roof to the field including the sound system. With this in mind, world-class acoustic and sound consulting firm Wrightson, Johnson, Haddon & Williams, Inc. chose JBL Professional's new Precision Directivity (PD) Series as the primary speaker system. Designed for large stadiums and arenas, the PD Series delivers clear, full range audio in larger sport and performance centers. First used at the new American Airlines Center in Dallas, these speakers are also featured in many major arenas and stadiums in the United States, including the Comcast Center at the NCAA basketball champion University of Maryland

Ford Field is a 65,000 seat stadium that uses Detroit's historic Hudson's Warehouse as its cornerstone. 119 of the 132 luxury suites are on four levels of the warehouse on the stadium's south side. According to the Lions press materials, "The inspired design that integrates luxury suites into the historic Hudson's warehouse affords each site holder significant opportunities including: optimum views, easy access and customized floor plans. By eliminating endzone suites, Ford Field luxury suites offer goal line to goal line, corner-to-corner views of every play."

**Array of PD Series Loudspeakers at Ford Field, Detroit.
Includes PD125, PD743, and PD764 models.**



The primary sound system consists of six large PD arrays hung from the ceiling, positioned above each corner of the field and above midfield on either side. Over 1000 speakers were used throughout the facility, including 158 PD models in the main clusters. Thirty JBL Custom Shop FFT8 three-way speakers, with four 12” low frequency drivers, were used to provide full range sound for the endzone seats. FFT9 three-way speakers have been installed for delay and extra coverage in the upper seats. Compact, versatile JBL Control25-AV speakers are in several areas including concourses and at the inside and outdoor ticket booths. Sound Media of Whitmore Lake, Michigan installed the audio system.



“At Ford Field, WJHW opted for a cluster system, using just six arrays of PD loudspeakers. Most football stadiums have a distributed system, or a single end-fired cluster system situated above the endzone. A distributed system approach, where 30 to 50 positions are outfitted with speakers to cover a small portion of the stadium, was not adopted. This building, which is asymmetrical, did not offer consistent mounting points throughout or have steel supports at all of the points necessary to accommodate a distributed system,” explained Brad Ricks, Design Engineer for JBL Professional, who assisted with the design, installation and tuning of the system. “There was however, enough structural steel on the ceiling to allow the use of only six large clusters of speakers above the field. Ford Field is unique, in that this is actually a very large arena-style cluster – it’s like a big arena, but because the building is so large, these are some of the largest clusters in the country. The cluster approach provides two key advantages, louder sound and more directional control, especially for the low frequencies, for which the PD series is designed.”

PD Series loudspeaker systems were chosen for two primary reasons. The clusters, designed to deliver 105 dB at the seats, needed to be very large to fill the entire stadium. With coaxial designs and very lightweight/high-powered components, the PD Series arrays were able to meet the requirements in a system that is considerably lighter and smaller than other systems available. The



One of four endzone arrays of PD Series Loudspeakers at Ford Field, Detroit.

second reason was the ability of the PD125's ability to steer the low frequency energy to specific areas of the stadium, providing coherent, controllable low end. Also, the PD Series has an effective throw of 200 to 230 feet due to the dual high-frequency drivers in the PD700 Series speakers, which makes the ceiling mounted system viable. Typical systems have a throw of 120 feet at the sound levels needed at Ford Field.

Acoustic treatment was also including in the WJHW design. White baffling material is hung from the ceiling to help reduce echoes and acoustic distortion. The suites have a minimum of glass and have no doors to reflect the sound. "It was a difficult sell at first," reported WJHW Principal Jack Wrightson. "Originally the developers had decided to eliminate virtually all acoustical treatment from the design." After literally three years of lobbying for the treatment, it was added to the project in the winter of 2001, nearly four years after the start of the project. "With the addition of the recommended sound absorption, the stadium went from having potentially the worst acoustical quality of any domed stadium around to one of the best," according to Wrightson. "The combination of the acoustical treatment, and the excellently controlled directivity of the PD boxes allow Ford Field to have far better speech intelligibility in comparison with other 'hard top' domed stadiums. We've had the PD series product in four projects now with good results. The stuff just works."



“Hanging the PD clusters and the accompanying cabling was the biggest challenge - the cabling was 170 feet in the air. Our first intention was to install the speakers to the roof before it was lifted, but we opted not to do this, as we did not want to leave the speakers outside all winter,” stated Steve Robinson, President of Sound Media. “Once the roof was installed, we brought in cranes to lift the speakers. The cranes were also used to help pull the cabling.” Each cable was almost 2” in diameter and each cluster used three cables. The amplifier racks were also lifted up to the catwalk by the cranes, as each rack weighs about 1000 pounds.

The entire sound system was designed and modeled using EASE 3.0. On site, the main cluster is processed by a BSS FDS-366 Omnidrive Compact Plus, controlled by Soundbench software. The back-of-house system includes 19 different zones, all controlled via BSS Soundweb. All speakers are powered by QSC amplifiers, which are monitored using QSCControl software.

In addition to the sound system, the stadiums video system is massive and extensive. Two 97 x 27 feet DaktronicsLED digital scoreboards offer scores, videos, and advertising in each end zone. Hundreds of TV monitors also provide a closer look at the action in the suites, extensive press area on the seventh level and primary concourses.

Headquartered in Northridge, California, JBL Professional is the world’s leading designer, manufacturer, and marketer of professional loudspeakers for recording and broadcast, musician, cinema, touring sound, commercial sound and contracting applications. JBL Professional is part of the Harman International network of professional and consumer audio companies. For complete product and company information, go to the JBL Pro website at www.jblpro.com.

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