COMPACT disc DIGITAL AUDIO
North American Philips Corporation
SONY®

Contact: **Albert Ruttner** (212) 697-3600 **William E. Baker** (212) 371-5800

1982 MARKETING IS PLANNED FOR COMPACT DISC DIGITAL AUDIO SYSTEM

CD Format Gaining As World Standard

NEW YORK, NY, May 27, 1981 -- Sony Corporation and North American Philips Corporation today demonstrated prototypes of the Compact Disc (CD) Digital Audio System. Akio Morita, co-founder and chairman of Sony, and Frank Randall, vice chairman of North American Philips jointly announced that the market introduction of the revolutionary sound reproduction system will begin in the fall of 1982.

The announcement of the marketing plans reflects growing endorsement of the Compact Disc system as the preferred digital audio format by equipment manufacturers and software producers around the world. Movement toward that broad acceptance was given impetus in June 1980, when Sony and Philips agreed to take full advantage of the technological capabilities of both companies and to co-develop the CD system.

Most recently, the worldwide Polygram Group, one of the leading international record manufacturers, and CBS/Sony Inc., the largest record company in Japan, announced plans to produce music programs in the CD format. In 1982, for example, CBS/Sony will release more than 100 Compact Disc albums in Japan simultaneously with the introduction of the CD players.

Philips and Sony jointly submitted the CD format to the Digital Audio Disc Standardization Conference and, in April 1981, the

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final report of its study of three major systems was presented. The study recommended the CD format as the standard for audio disc recording and reproduction. The system continues to gain international acceptance.

"Live" Fidelity

The Compact Disc Digital Audio System delivers concert-hall fidelity, eliminates distortion, preserves the original "live" sound quality, and can be played through any home stereo system. Its unparalleled musical realism results in listener enjoyment which previously could be fully experienced only at a live performance. It is said to demolish the "distance" and the difference between the sound produced in the recording studio and the sound heard in the listener's living room.

In a complete break with all earlier recording-playback techniques, the Compact Disc Digital Audio System employes a record that has no grooves, which rotates faster than conventional LP or 45 discs, and is smaller than either. Only 4.7 inches (12cm) in diameter, the smooth-surfaced Compact Disc carries up to a full hour of digitally-encoded stereo music on one side compared to the LP's maximum of 30 minutes per side. The sound is recaptured, exactly as recorded, by means of a miniature, low-power, solid state laser pick-up unit within the CD player.

Since the invention of the phonograph in 1877, the recording and playback of sound has been based on an analog principle in which the physical energy of a sound wave is converted to variations in the grooves on the record.

The most noticeable problem in conventional records is that, as the stylus responds to the physical variations within the wavy groove, it also picks up the presence of dust, dirt and groove imperfections as additional -- but unwanted -- sounds. The stylus also is the link through which turntable rumble and tonearm resonance are transmitted to the system's amplifier.

Digital Advantages

In digital recording, the original sound wave is sampled thousands of times per second and converted into binary computer language. At about one-sixth the size, the Compact Disc offers many advantages over the conventional analog LP record. It provides wider frequency response (20-20,000Hz) and less high frequency distortion (0.05%). The system provides a signal-to-noise ratio and dynamic range of more than 90dB for each. There is no contact between the laser pickup and the disc, resulting in an extremely long record life.

The digitally-encoded sound, in the form of microscopic pits and flat areas along a 2½-mile-long spiral track, is sealed with a transparent plastic that protects against dust, dirt, scratches and other damage.

The right and left sound channels are encoded as separate bits of information that cannot be mixed in the record. Channel separation is greater than in conventional LPs for a stereo effect that significantly increases realism in playback.

Significant Advances

Recognizing the sound advantages of digital systems, more and more manufacturers have been recording their artists in digital master tape for release as improved LPs. Although these recordings have been acclaimed as clear advances over conventional LPs, they do not completely close the distance between studio and living room and they force the LP record to its design limits.

"The Compact Disc Digital Audio System," notes Sony's Akio Morita, "achieves a genuine technology breakthrough that establishes a direct, trouble-free link between the musician and the listener."

Frank Randall of North American Philips called the new system "the most significant advance in consumer sound reproduction in more than 25 years."

Sony and Philips will both demonstrate the Compact Disc Digital Audio System at the Consumer Electronics Show in Chicago, May 31 through June 4.

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