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In My Opinion...

Dean Says:

The Controversy Continues— Part 2

One aspect of NFPA 72-2010, *National Fire Alarm and Signaling Code*®, that connects this edition with all previous editions rests in the fact that controversy regarding certain requirements within the *Code* will always exist.

One particular controversy continues to plague Authorities Having Jurisdiction as they try to sort out the proliferation of alternative service providers offering telephone services that may also transport alarm signals.

In the intervening 30 years since the consent decree in 1982, telephone service has changed markedly. At that time the vast majority of telephones in the U.S. connected by means of a solid wired pathway from the telephone instrument to the telephone utility switching center.

Two types of power supplies for telephone service had emerged. The first and most common consisted of batteries—and, in some cases, diesel engine-driven generators to allow the batteries to maintain a full charge over a long period of commercial power interruption—supplying power to the switching center and out over the wired connection to

the telephone instruments. If you placed a DC voltmeter across the terminals of a telephone instrument—what the telephone utility calls the “tip” and “ring” so named from the parts of the plug that original telephone switchboards used to make connections—you would read a nominal voltage. When a person lifted the telephone handset, the circuit resistance changed signaling the switching center to provide dial tone. The telephone utility referred to this as “loop start” service. Virtually all residential telephone service consisted of loop start service.

As businesses and other commercial establishments added multiple phone lines, the drain on the batteries at the switching center became too great. So the telephone service for these commercial establishments migrated to a system whereby loop voltage only appeared on a telephone pair when someone lifted the handset to initiate or receive a call. Lifting the telephone handset caused a momentary connection to ground to signal the switching center to provide dial tone. The telephone utility referred to this as “ground start” service.

Two key legal decisions paved the way for companies other than the authorized common carriers to provide telephone equipment to users: Hush-A-Phone and Carterfone.

The Hush-A-Phone decision occurred in *Hush-A-Phone v. United States* heard in the D.C. Circuit Court of Appeals in 1956. In summary, the Court ruled that tariffs on Hush-A-Phone—a

cup-like device that mounted on a telephone handset in order to reduce the risk of conversations being overheard and increasing sound fidelity for the listening party—represented unwarranted interference with a telephone subscriber’s reasonable rights to use his or her telephone service in ways that offer service in a privately beneficial manner without being publicly detrimental. This decision set aside the prior FCC order in favor of AT&T and remanded the proceedings.

The Carterfone decision by the Federal Communications Commission in 1968 permitted the Carterfone—a device that acoustically, not electrically, connected a mobile radio system to the public switched telephone network—and other devices to directly connect to the AT&T network, as long as they did not cause harm to the system.

This ruling opened the possibility of selling devices that could connect to the phone system by means of a protective coupler—SNI, standard network interface, now more commonly known as an NID, network interface device. The NID permits the telephone utility to have a line of demarcation between telephone utility owned equipment, including wiring, and customer-owned equipment and wiring.

Network Interface Device



As a result, the market soon opened to customer-owned equipment, specifically “any lawful device.” This permitted innovations such as answering machines, fax machines, and modems to flood the market.

I will continue this discussion and present additional pertinent details in the next issue of *TM-WSR*. □

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