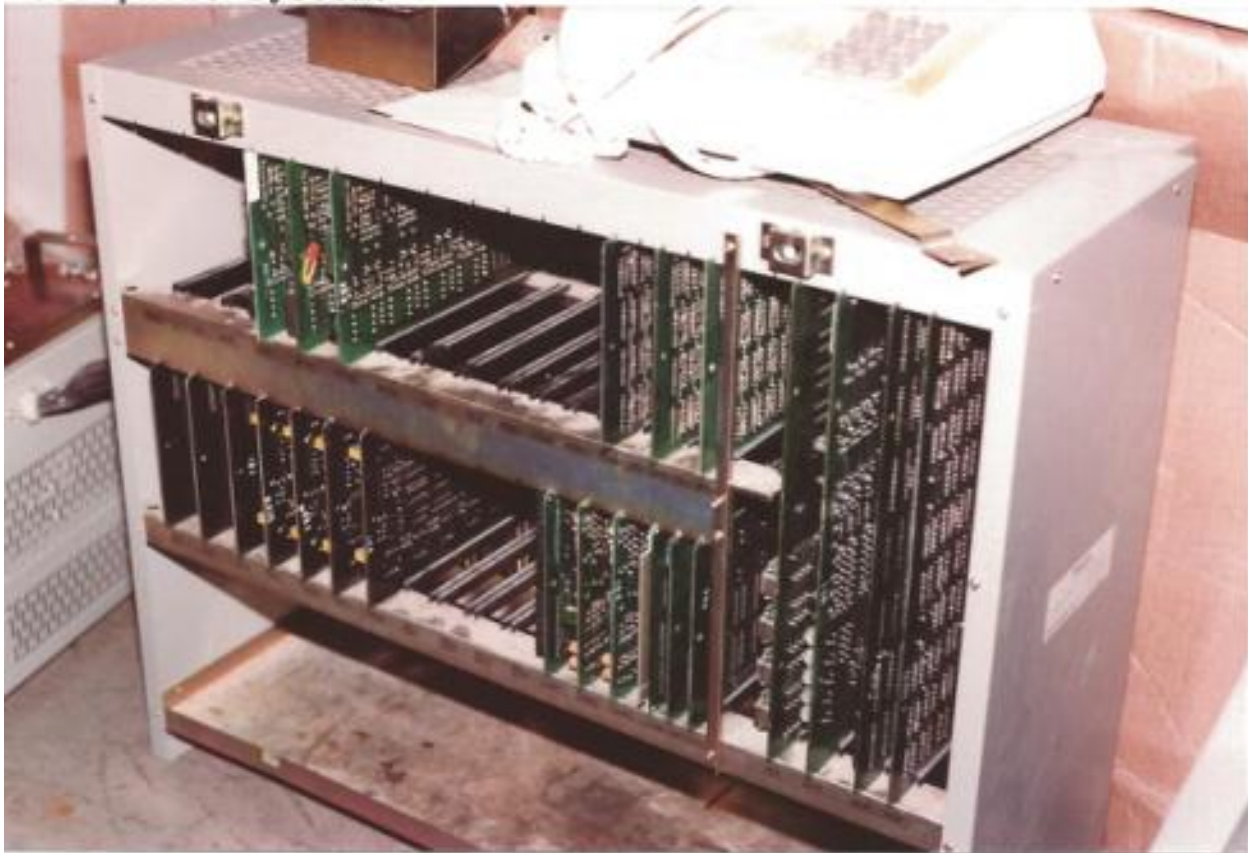


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LIGHTNING AND SOLID STATE: One cannot always tell whether lightning has damaged solid state electronic equipment by looking at it. The photograph below shows a telephone control center, most of whose circuits failed as a result of a lightning strike at an office building in Toledo, Ohio. The employees saw arcing in the doorways of the building when the lightning struck nearby, and they noticed that their telephones would not operate immediately afterward. Yet, as the photograph below shows, there were no visible signs whatever that lightning had struck. This insured's problems were compounded. Although they had purchased this telephone system only one year earlier, the printed circuit modules were already obsolete. They had to purchase an entirely new telephone system.



My first proof that lightning can damage solid state circuits with no visible evidence occurred in July, 1981 when lightning struck the house of our good friends (and neighbors). Their television failed, as well as their solid state lamp dimmer control in the dining room and some of the solid state controls in their kitchen range. No other damage occurred to their house, but the crash of thunder broke a glass table top on our patio into smithereens. I took the television apart and could find no burn marks or any visible indication anywhere that it had been damaged by lightning.

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ACTUAL LIGHTNING DAMAGE:

The photograph below shows some very large fuses which were truly damaged by lightning. The arc marks on the door were so far away from the fuses that only a very high voltage from a lightning strike could have jumped the gap to cause them.



LIGHTNING CLAIM DENIED:

A small hospital in western Kentucky claimed that over a dozen motors were damaged by single phasing after an alleged lightning strike caused a short circuit in one of the power company's service entrance cables to the hospital. But in an interview, their maintenance man forgot himself and told me that there was no lightning strike. He also did not know that when the short circuit occurred, he could have prevented the single phasing damage to the dozen motors by simply turning off the main circuit breaker immediately. He was in the circuit breaker room when the short circuit occurred.

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