

GM Collects Wrecked Cars For Steering Tests

Milford -- Senior Project Engineer Wilton D. Nelson is cautious of more than 400 damaged automotive steering columns at General Motors Proving Ground. Patiently and deliberately he is adding to his collection.

It consists of energy absorbing (EA) columns removed from smashed 1967 vehicles in all parts of the country, Nelson and his fellow engineers in GM's Safety Test Engineering Department carefully examine and measure each specimen as soon as it is received.

Primarily they are interested in how many inches the column was com-

pressed by impact of the driver's body. It is designed for controlled compression up to 8-1/4 inches, depending on the impact force. It yields at approximately 1,000 pounds of impact at a rate that can be tolerated by a person's chest or rib cage.

IN SOME CASES to verify its performance, engineers will give the damaged specimen laboratory compression tests and disassemble it for complete inspection of all parts.

The column assembly consists of a steel mesh jacket that absorbs impact

energy. Inside the jacket are the steering shaft and gearshift tube. They are designed to "trombone" or telescope under impact.

In addition, engineers study the accident report accompanying the damaged column. An effort is made to reconstruct the case and determine precisely how the steering column was involved.

If details are incomplete, a telephone call is made for the missing information. If that fails, an engineer may fly to wherever the wrecked vehicle is and make a detailed technical inspection.

These hundreds of EA column post-mortems have convinced Nelson the GM steering column is an extremely effective safety feature. GM introduced it last fall at the beginning of the 1967 model year, after more than five years of experimentation and development.

From biomechanics studies with cadavers at Wayne State University, engineers obtained vital data for design of the EA column system and projected human tolerance to impact forces.

However comprehensive a test and development program may be, the

ultimate payoff occurs in the field. There is no way, for instance, to anticipate all crash situations, with their infinite variables, in the laboratory or on the proving ground.

When the EA column was announced as standard equipment for 1967 models, GM organized a comprehensive information gathering program.

In addition, independent investigators—Dr. Donald F. Huskins of the University of Michigan and Dr. Alan Nahum and Mr. Arnold Siegel of the University of California, Los Angeles—have sent their data directly to the

Proving Ground and Saginaw Steering Gear Division, producer of the EA column.

Insurance investigators were asked to return to GM any columns they found that were compressed in accidents.

More instantaneous feedback came from accidents involving GM employees' company cars. Nearby police and public safety agencies were alerted to contact GM's Automotive Safety Test Engineering Department if they observed or were involved in crashes affecting steering columns.

Don't Argue With Computer Phone Girls

"This is a special operator. What number are you calling, please?"

"955-2368."

"You have dialed a non-working number. Please try again."

Better not argue with her, for the operator may be aided by one of the latest, lightning-fast computers.

COMPUTERS are now being used by many telephone company facilities throughout the U.S. This is only the beginning of a vast revolution in handling phone calls. Already, "Intercept" operators, who handle about 150,000 calls to non-working numbers in Chicago each day, have data on over three million telephone numbers in a computer at their fingertips. In less than a second they can receive answers to such questions as when a phone was disconnected, and what a person's new number is.

"Say you call you cousin," a Bell Telephone Company official comments, "he's moved, and you get the intercept operator. As you give her the number she's punching it into the computer. The computer's answer appears on a small display screen in front of her a few seconds later."

The Illinois Bell Telephone Company system in Chicago also provides callers with names and addresses associated with phone numbers -- except for non-published numbers which are maintained in a separate file. As the computer revolution continues, your own telephone company will probably add such a service. About 15,000 people use it in Chicago each day.

SINCE MANY types of data can be held in the computer memories, telephone operators will be able to give you much more information than at present. The UNIVAC computers in the Chicago system, for instance, hold both working and non-working numbers. Before they were installed, the intercept operators only dealt with non-working numbers. Twenty per cent of intercepted calls are from people who are calling working numbers but who have made mistakes in dialing.

In your own area, operators, aided by computers, will probably someday be able to also tell you why phones were disconnected, and when a new phone will be connected. And they will give you time and charges on calls much faster.



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33 ONYX

34 ONYX

35 ONYX

36 ONYX

37 ONYX

38 ONYX

39 ONYX

40 ONYX

41 ONYX

42 ONYX

43 ONYX

44 ONYX

45 ONYX

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