

## HONDA NEWS

August 24, 1981

### **Honda Develops Driving Support Device, Honda Electro Gyroator, World's First Practical Application of a Gyro for Automobiles**

Honda Motor Co., Ltd. has completed research and development of the Honda Electro Gyroator, an inertial navigation device, and achieved practical application of the device for automobiles.

This device is equipped with a direction sensor developed as the world's first practical application of a gas-rate gyro for mass-produced automobiles, which enables the vehicle to detect the direction it is traveling. The combination of this direction sensor, a distance sensor and a 16-bit micro-computer enabled the system to detect the direction and distance of the vehicle's movement moment-to-moment and to display the locus of the vehicle as an image patterned on the map pre-set in front of a cathode-ray tube monitor. This driving support device enables the driver to select the most suitable or shortest route to a destination while avoiding roads with heavy traffic.

Honda began development of the Honda Electro Gyroator in consideration of the recent traffic situation where traffic congestion is becoming common especially on major roads and such congestion is leading to major energy loss including wasteful fuel consumption, physical and mental exhaustion of the driver and loss of time. Honda developed this device to prevent the vehicle and the driver from wasting energy and to help improve the overall efficiency of transportation. Moreover, Honda expects this device to help create new ways of using automobiles that expands the function of automobiles by providing the driver with peace of mind on unfamiliar or unknown roads and during night-time driving.

The system for this device was independently developed by Honda, with 66 relevant patent applications filed in Japan and 18 applications filed in four countries outside of Japan. Concerning production, the direction sensor will be produced by Stanley Electric Co., Ltd., and the displays, computer and distance sensor will be produced by Alpine Electronics, Inc.

Honda Electro Gyroator can be applied to any vehicles including passenger cars, trucks

and busses; however, it will be installed only to Honda vehicles for the time being. Before the end of the current fiscal year, Honda is planning to begin sales of the Honda Electro Gyrocat as an accessory through Honda Service Factory (SF) all across Japan.

<About Honda Electro Gyrocat>

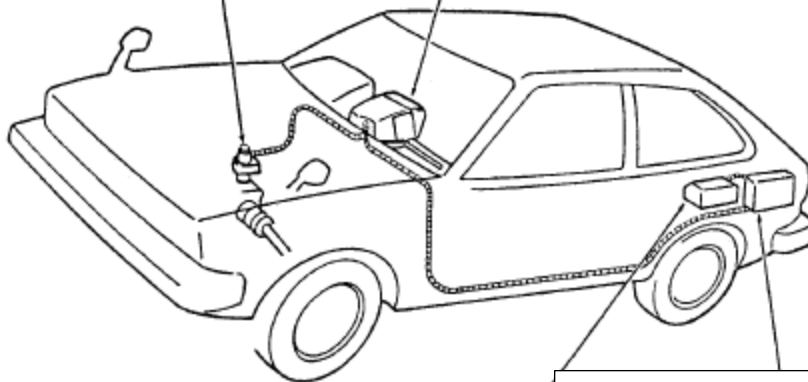
In terms of its functionality, the Honda Electro Gyrocat is the same inertial navigation system as the one used for the Jumbo Jet (nickname for the Boeing 747). In principle, a precise gas-rate gyro sensor and a distance sensor detect the direction and distance of the vehicle's movement, respectively. The microcomputer instantaneously integrates moment-to-moment changes of these two elements of movement and continuously memorizes and adds them to calculate the amount of the vehicle's movement. Then the system displays the amounts of the movement as a driving locus on a cathode-ray tube with a pre-set transparent map sheet. As a result, it is possible for the driver to confirm the driving route and current location on the map with great accuracy and select the most appropriate driving route. The Honda Electro Gyrocat reduces the impact of external factors and provides highly-accurate information as a patterned image.

●Distance Sensor:

Based on the pulse detecting system, the distance sensor emits electric signals according to the number of tire rotations and communicates the travel distance to the computer.

●Display Unit (6-inch CRT):

Based on signals from the computer, the traveling locus, current location and travel direction are displayed on a map sheet..



●Direction Sensor:

A precision gyro sensor with no moving element, filled with helium gas emits electric signals that respond very accurately to changes in the vehicle's travel direction and communicates the travel direction to the computer.

●Navigation Computer:

- Based on electric signals that indicate travel direction and distance, the navigation computer continuously integrates the current location of the vehicle and makes navigation calculations.
- The navigation computer automatically calculates and corrects an error.
- The navigation computer makes calculations to display the driving locus as an image.