

Automatic engine stopper for two-wheelers⁶²

CONSOLATION

Tukaram Verma (48) is a motor mechanic living in Tilda Nevara in Raipur, Chhattisgarh. He has about 30 years experience in the field and earns about Rs.50, 000 a year. His family consists of his wife and three children. His daughter is in the higher secondary and his sons are in high school.

Genesis From a very young age Tukaram has been working in a garage as a mechanic. Even then he had noticed that generally two-wheeler drivers stop many times at railway crossings, traffic lights etc., or when there is a jam, but leave their vehicles running resulting in unnecessary waste of fuel adding to pollution. In rural areas he observed that if two people came across each other they used to spend some time chatting, forgetting to switch off the engine of the two-wheeler. Another factor that spurred him on was that even in ordinary cheap tape recorders there is an auto stopper, so why couldn't there be one in much more expensive machinery like vehicles. He reveals that he constantly thought about this idea since he was 17 years old and after years of efforts and improvements he made the present model of the auto-engine stopper. He claims that this can be used in four wheelers also and that he has tried it on a Mahindra and Mahindra jeep.

The Innovation

The instrument consists of an electronic timer, a relay and a neutral indicator switch. The switch is connected with the timer and gear box and the timer is connected with the relay. The relay is

connected with the power supply cable of the spark plug. A welded curved rod is attached to the existing speed changer body, switch, timer-circuit and gear status indication system. The switch is attached in such a way that at various gear positions it makes the circuit complete for each gear indication. Four bulbs indicate the gear status. These bulbs are supplied power through the main cable after regulation. When the vehicle is in neutral position, the switch which is connected with the gear lever gets switched on automatically and completes the circuit due to which the timer starts. After a preset time, the relay stops the current supply to the spark plug and the vehicle engine stops automatically within 25 to 30 seconds as the ignition is cut-off. The power supply could be either from battery or magneto coil. This device can be used only in geared vehicles.

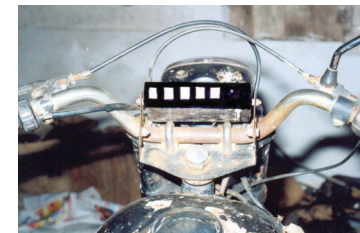
Advantages

The basic unit cost comes to around Rs 175, which makes it affordable to the common man. The cut off time can be adjusted according to the range of the timer. Negligible amount of energy is consumed by the instrument. The instrument function is independent of the fuel used in the engine and therefore it is safe for any type of engine. The working



Address

Pt. Dindayal Upadhyay
Chowk, Tilda, P.O. : Neora
Raipur, PIN-493114
Chhattisgarh



of the instrument is also independent of the engine starter and so does not affect it in anyway. This machine can be used in vehicles which run on both petrol and diesel. The machine is light in weight. It is easy to install and can be switched off as per requirement. Attachment of this element in two wheelers saves fuel and reduces pollution. This is very relevant especially in the context of the looming energy crisis as well as the ever increasing prices of fuel. In addition the number of vehicles is also increasing on our roads leading to a disparity between demand and supply forcing us to spend precious foreign exchange on oil imports to meet our needs.

Success in spite of hurdles

Tukaram reminisces that the major problems he faced in the process of innovation were lack of financial support and technical guidance. For the entire process of innovation he claims to have spent about Rs.80,000 to one lakh. He considers his lack of education also a hindrance and regrets that he had studied only till the primary school. But inspite of all these stumbling blocks he found the experience of innovation an interesting and satisfying one. He remembers with gratitude Mr. Suresh Kumar and Mr. Babulal Sen who constantly supported and encouraged him in every way. He also confides that his family appreciated this innovation after he got appreciation from others. But now he proudly claims that neighbours and others in the community know about it and acknowledge that it will be very useful. The innovation has also been featured in the newspapers twice. NIF has sanctioned Tukaram a sum of Rs.57,500 from the Micro Venture Innovation Fund

for making the prototype for the market survey of this innovation.

Currently his goal is to see that this innovation reaches every person who needs it and he hopes that someday it will be installed in all vehicles. He feels that two-wheeler companies could incorporate the element as an inbuilt part of the motorcycle body. But till date he has not received favourable responses from them though he had sent letters to various manufacturers. But undeterred, he declares, that in the future also he would like to work on further improving the efficiency and effectiveness of the innovation.

Tried and tested

This product was exhibited at the Rungta College of Engineering and Technology, Bilai and also tested in their Mechanical Engineering Dept, Lab. In the technical feasibility report they have stated that till now only neutral indicators were available in all modern vehicles but this instrument uses neutral indication to switch off the engine. It goes on to say this type of product is not available in the market and is very advantageous as per the fuel economy and air pollution is concerned.

Mr. Choudhary, the Senior Deputy Director of Automotive Research Association of India (ARAI), Pune, talking about the concept mentions that there would not be any legal ramifications of the technology, since riders anyway stop the engine at traffic lights. He also put forward the point that this is purely a customer driven technology and it is up to the customer to validate it.