

# Laser Charge with Temperature Cut-Off

**H**ands up anyone who can honestly say they have NEVER overcharged a set of Ni-Cads. I suspect there are very few. If this fate has not befallen you it will one day, but it highlights one aspect of charging which is the only common denominator in charging all cells — heat.

No two packs take the same time to charge, nor peak at the same voltage. All packs get hot when charged, if the charge is not removed packs can, and have, burst apart covering the local area with toxic chemicals and acid.

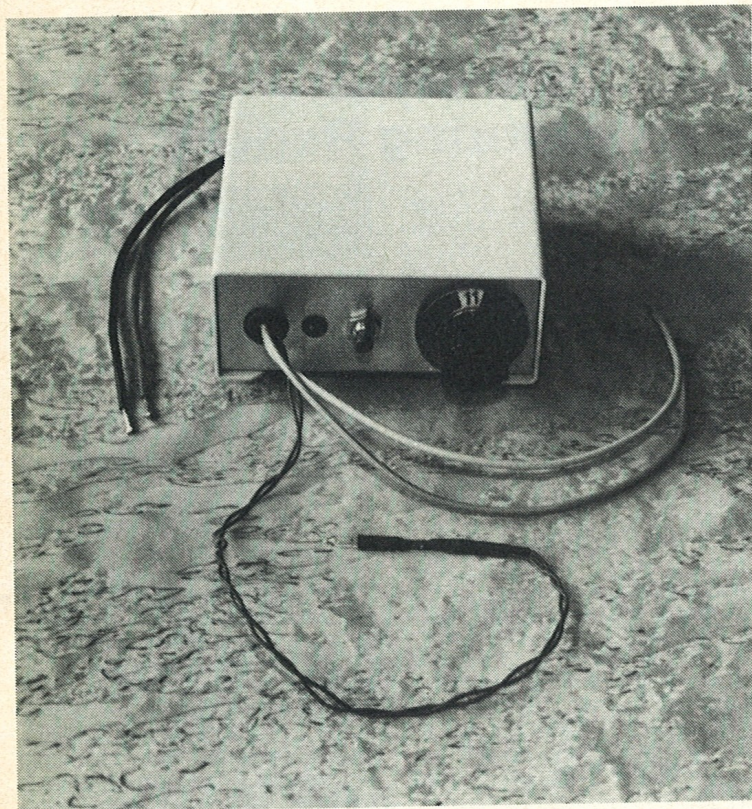
If temperature is such a good guide, why has it not been used before? Lack of understanding and a tradition of not overcharging go some way to explaining the reasons. In the early days of 1/12th I was taught that to correctly charge a pack the voltage should be allowed to reach a maximum and then drop back no more than 0.1 volts.

Clearly I was not the only one, since a number of peak detection chargers came on the market. Peak detection has ruled the roost for the last five years. Mike Reedy (*Associated*) Ernie Provetti (*Trinity*), Christian Sterr (*CS*) and Christian Keil (*MIH Pushed*) all use some method of selecting cells which is unknown to me. They all have one thing in common, they are SC type cells. *Associated*, *Trinity* and *MIH* all use heat to determine when the cells are charged. The availability of peak detection chargers has led almost every racer to go against the trend of the major cell suppliers — but now we can all follow the big boys.

*Laser* have supplied the pulse charger for some time, and as a low cost reliable unit it is unrivalled. It's pre-set cut off was not the best device ever invented. Now *Laser* have added a temperature sensor, to replace the preset cut off.

The sensor is connected to the





front of the unit by a pair of thin wires. A tiny glass phial houses the sensor and this is placed under the shrink wrap at the opposite end of the cells to the leads. When charging the sealed *Tamiya* race packs, cut a small oval hole in the shrink wrap to allow the sensor to sit next to the cells.

This is important. Never sit the sensor on the outside of the cells.

When the temperature recorded by the sensor is below 25°C, the charger switches on automatically. Care must be taken in this condition to ensure the output leads do not touch. Cells are connected in the normal fashion and the sensor placed in position. Never charge cells without the sensor in place.

On completion of charging, when the cells reach about 40°C, the charger cuts off and the red light comes on. This is slightly confusing at first, convention has it that 'light on' means charging. One soon gets used to it, but not without the odd momentary panic in the first weeks of use!

To re-peak the cells before racing the sensor is removed and cooled by blowing on it gently. Replace sensor, press the button and charging recommences while the light goes out.

The *Laser* temperature sensing charger will not accept cells or 12 volt incorrectly connected. In these cases the charger will cease functioning. Always use *Tamiya* or *Mate 'n' Lock* plugs on the output leads and cells to prevent an accident.

In two months use the charger has proved faultless. The rate of charge can be varied from 3 to 6 amps using the dial at the front, although settings less than meticulous are rarely required. This is one advantage over the competition. The second advantage is that the unit works faultlessly

*Above: the Laser temperature sensing charger. Constant current charge rate can be set between 3-6 amps. The sensor must be placed right next to the cells.*

from a transformer (THIS IS A SPECIAL UNIT — NEVER CONNECT ANY CHARGER TO THE MAINS DIRECT) which cannot be said of most peak detection systems. The third advantage is adaptability. By adjusting the charge rate the unit will cope with four, five and six cell packs with ease.

At £33.00 the unit meets the *Schumacher* 'PC1' head-on in the market. It shows certain advantages over the 'PC1', but in the end there is little to choose between them. Were I a beginner, prone to the normal errors of incorrect cell connection, etc., then I would go for the more sturdy 'PC1'. For the more experienced racer keen to get the best from cells, it's six of one and half a dozen of the other. I must declare that I drive for *Team Laser* and will use the charger.

If you use a mains transformer supply, the *Laser* is your choice. *Laser* are following the trend of the works teams, *Schumacher* are producing a device for the wider market. You pay the money — you choose the charger. Neither will disappoint. *Schumacher* no longer have the market to themselves, *Laser* are on the attack!

*Laser Products*, 230 New Road, Booker, High Wycombe, Bucks. Tel: 0494 444238.

Price: £33.00, plus post and packing.

Available from *Laser*, *Howes of Oxford* and all good model shops.

**Reviewed by Pete Winton**