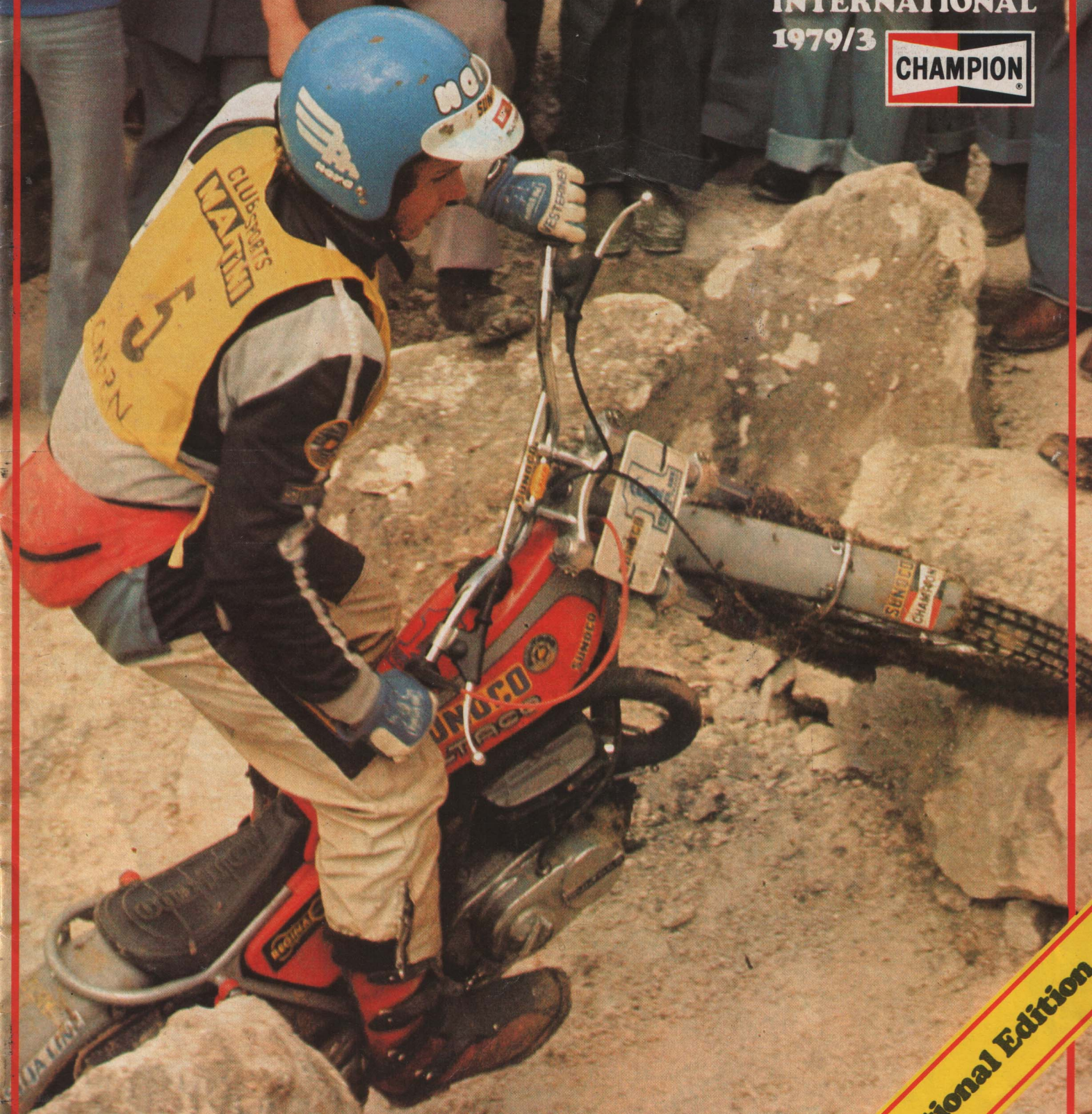


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Yrjö Vesterinen – Bultaco

International Edition

TIME for TRIALS

Like many sports, Trials were invented in Britain. Developed in the 1920's by a group of British motorcycle enthusiasts, the sport was initially dominated by names such as Ariel, Cotton, Greeves and A.J.S.

And like most good ideas, trials have become international in manufacturer, rider and spectator interest.

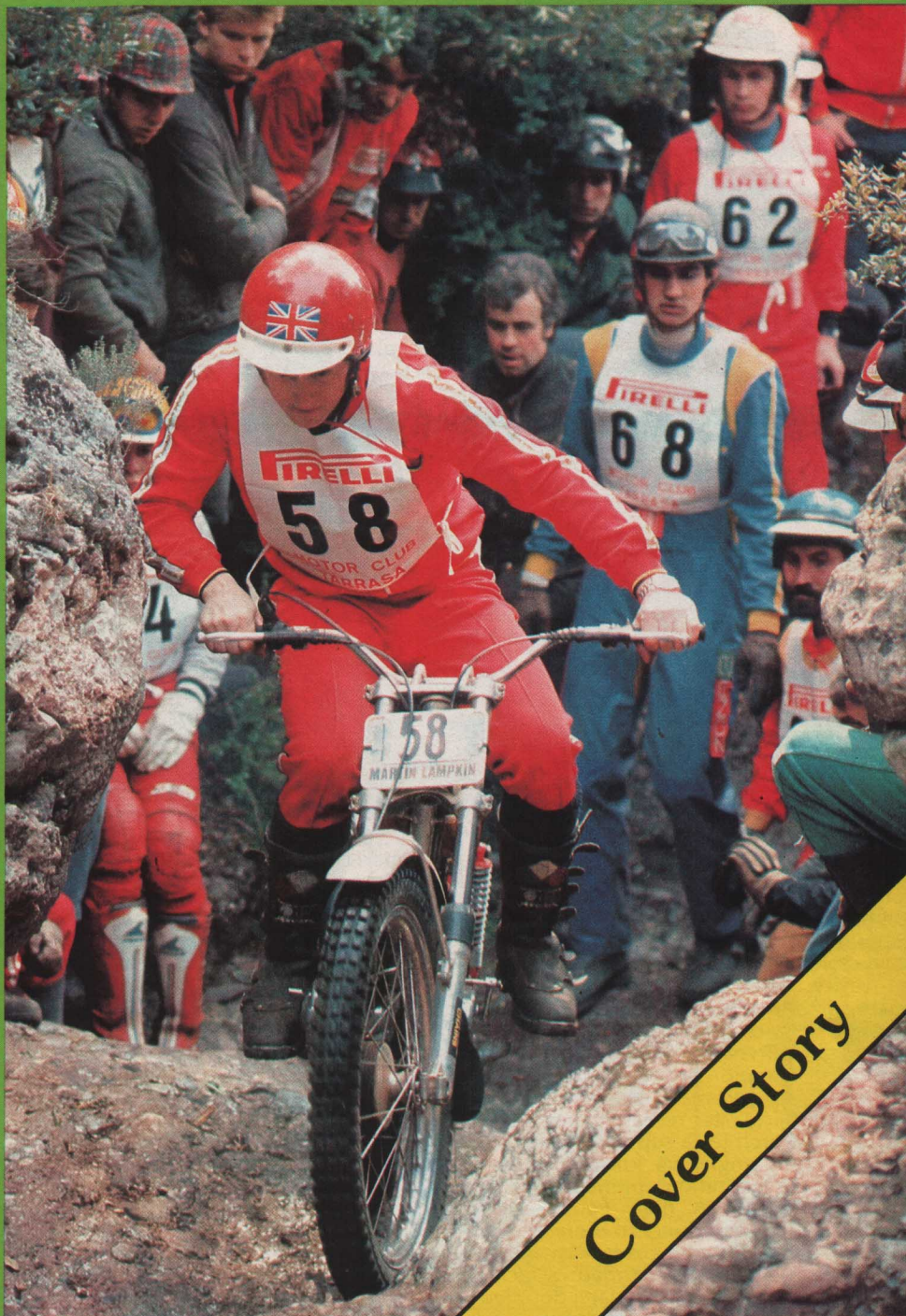
The basic concept of a motorcycle trial is to test the rider's ability to control his bike precisely over difficult terrain. A trial will consist of 10 to 25 "sections" marked out in the most difficult conditions the organisers can find. Each competitor has to cover the sections under observation and loses points for every time his foot touches the ground (up to a maximum of three points). The main objective is to keep the machine moving; the penalty for stopping or straying beyond the narrowly-defined limits of the section is five points or a 'maximum' as it is known amongst enthusiasts. There is no aspect of speed in trials. There is an overall time limit within which the competitor must complete the course, but being the fastest rider carries no additional points.

Because of their emphasis on precision rather than speed, trials are not a mass spectator sport. The fact that they are run in rough country and cover a large area are additional reasons for low public interest. However, the sport could be on the road to mass acceptance with the development of indoor trials. Run in large halls and sports stadiums, indoor trials concentrate all their activity in the small space of the arena and allow the spectators to follow all the action from a comfortable seat. Like most developments which bring specialist sports to a wider audience, this trend in trials isn't all that popular with the purists who consider the difficulties involved in watching 'real' trials as part of the fun.

One might expect the Japanese to be 'top dogs' in trials, as they are in most other forms of motorcycle sport. This is not the case, however, and Spanish manufacturers have made trials their own territory, with the names of Montesa and Bultaco filling the championship lists with such riders as Ulf Karlson, Malcolm Rathmell, Marland Whaley and Jaime Subira on Montesas and Yrjo Vesterinen, Martin Lampkin, Bernie Schreiber, Soler and Gargot on Bultacos.

To find out something about what makes the Spanish manufacturers so successful, Motor Mail talked to Pedro Pi of Montesa about their design philosophy. According to Pi, one reason for the Spaniards' success is the fact that their approach is more on a human rather than on a technological level.

You cannot measure the 'feel' of a bike



Cover Story

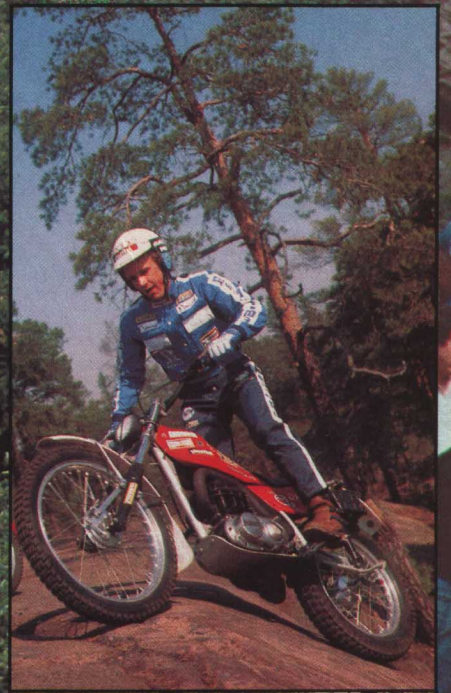
on a dynamometer and you cannot develop a good trials bike on a drawing board. You have to ride the bike and modify it according to what you find in competition - only after you have done this can you put the bike into production. The smaller Spanish factories, depending on the intuition of craftsmen rather than massive Research and Development departments, are better suited for working in this way and this, believes Pi, is a big factor in their success.

The requirements of a trials bike engine are rather special, according to Pi, the most effective being the single-cylinder two-stroke. Engine capacity has shown a gradual increase to its present figure of around 350cc, but sheer power is of little use in trials riding - it is torque and balance which count.

Ignition for trials engines presents particular problems. Because of their low

operating speeds - normal idling speeds are of the order of 700 to 800 r.p.m. and can be as low as 500 r.p.m. - electronic ignition is unusable because at this speed it will simply not function. The low speeds also demand special performance from the spark plugs. Idling at 500 r.p.m. means low combustion chamber temperatures so the plugs must be able to fire without cold fouling whilst at the same time being able to run up to 7000 r.p.m. without problems when needed.

Close collaboration between Champion and the factory teams in trials competition has led to both Montesa and Bultaco specifying Champion for their production bikes. Champion for their part make no secret of the fact that they have learnt a great deal about motorcycle plugs from trials - lessons that they have been able to apply to plugs for road bikes and even mopeds.



Naturally, the specialist nature of a trials bike demands certain peculiarities of frame design. Pedro Pi explained why. "You have to remember that we are dealing with a very unusual way of riding a bike. In trials, the rider spends nearly all his time standing up so the footrests are mounted well back and the handlebars well forward. The saddle is practically redundant so it can be very simple. Ground clearance is very important so that has a great influence in frame design. Because a trial doesn't cover much in the way of distance, we can get away with a small tank that only holds something like 5-6 litres of fuel. Machine control is the most important consideration so we pay particular attention to steering geometry and the suspension system. The suspension itself is entirely conventional, but we do go to great lengths to match the spring rates and shock

absorber settings to the characteristics of each course."

"Wheels need to be light to reduce inertial forces and we can use small brakes because the bikes don't reach high speeds. However, it's most important that the brakes continue to work in waterlogged conditions. Tyres are very important. Tread compounds are soft and the carcass must be flexible to work efficiently on rough ground. Riders aren't able to change their tyres to suit different conditions so a good trials tyre must be able to work on dry or wet surfaces of all types from sand to grass to boulders to deep mud. The tyre designers are limited in what they can do because trials tyres are still limited by the original British rules, which decreed that since a bike has to travel on the road from one section to another, the tyres must be safe for road as well as cross-country use. There are

strict rules about such things as tread design, pattern depth and sizes."

In Señor Pi's opinion the main qualities demanded of an ideal trials rider are concentration, balance, and machine sympathy. It is strange but true that these qualities are often combined in the top trials riders with a sense of humour and a pleasant personality. There are no superstar egos in trials, probably because of the need for a gentle touch, rather than strength, for controlling the bike.

Perhaps it is something in the Spanish character - a character which appreciates the artistry and skill of the bullfight rather than the act of killing, a character which idolises those who can coax rather than drag melodies from a guitar, which has made their machines the best in the world for this, the most gentle and precise of the motorised sports.