

CLASSIC TRACTOR TALES

Some crawler tractor oddballs

By Ian M. Johnston, The Tractor Historian

Early crawler tractors, along with all other types of vehicles, had their share of the unconventional, the bizarre, the freakish — the oddball! Some of these idiosyncratic machines performed as capably as their more orthodox counterparts, and indeed sometimes better. Others were simply engineering ineptitudes, remembered only for their eccentricities.

FORDSON E27N ROADLESS

Roadless Traction Ltd. of Middlesex (UK) commenced producing add-on crawler tracks for agricultural tractors, back in the early 1920s. Bristol, Ransome and Rushton tractors each were equipped with full length Roadless tracks. In the 1940s various British and European tractor manufacturers offered the option of Roadless half tracks fitted in lieu of rear wheels.

As every Aussie tourist to Wales soon discovers, it always rains in the Welsh Uplands (well, nearly always). In response to a particular problem experienced by the local hill farmers in such districts as Llanfihangel-yng-Ngwynfa and Pentre-lyncymmer (try pronouncing these!) the Ford Motor Co. of Dagenham, Essex, equipped a number of Fordson E27N Major tractors with Roadless half tracks.

The wet clay soil commonly encoun-



A 1949 Fordson/Roadless half track restored by the author. The four cylinder side valve petrol/kero engine of 4,380 cc delivered 32.5 belt hp and on half tracks produced a 6,000 lb drawbar pull at 1.54 mph. The unit was equipped with a three forward and one reverse gearbox. The operating controls were identical to that of the wheeled version. (Photo I.M.J.)

tered in these areas, made it difficult for wheeled tractors to obtain traction. Few of the farmers were in a position to afford the relatively high costs of a conventional crawler such as a Fowler VF or a Caterpillar D4. The Fordson Roadless pro-

vided the answer. It was priced right, available and could pull a plough across the steep sticky soil without loss of traction.

A handful of these Fordson half tracks found their way to Australia, where they excelled in opening up scrub country that was notorious for puncturing rear tractor tyres.

When exhibited at classic tractor rallies, it is interesting to note the 'double takes' from passers by as they discover a Fordson Roadless, and then home-in for a close inspection.

THE BEARCAT

Nothing could be more freakish than a crawler tractor having an Oregon timber chassis. Yet that is precisely what held together the Bearcat tractor, manufactured by the Bearcat Company of South Bend, Indiana in the 1920s and distributed by Yuba Products Company of San Francisco, California. (There was no connection between this firm and the Yuba Ball Tread tractor).

The strange looking Bearcat was powered by a model T Ford engine (what else?) and utilised assorted Ford transmission components. One could be forgiven for



This 1923 Bearcat, owned by Lou Hanslow of Tasmania, spent its entire working life in Queensland. The wooden chassis is clearly evident. (Photo I.M.J.)

assuming this strange concoction of wooden planks and Model T hardware added up to a homemade bitzer. But not so. Documents from the prestigious Smithsonian Institute and the Chicago based Model T Ford Club confirm that this oddball was commercially produced. In fact, it seems around 600 were manufactured.

The Bearcat featured in the accompanying photo is owned by Tasmanian tractor collector Lou Hanslow, who has traced its history in Australia to Queensland, where it was used very effectively for hauling logs out of steep forest country.

DEMAG 130

Resembling a Wehrmacht reject, the Demag bulldozer of the 1950s proved that a capable track machine did not necessarily have to look beautiful — although to be

honest, a brief acquaintance with one of the Massey Harris or John Deere stylists would not have gone astray.

The 12 tonne Demag was manufactured by Deutsche Maschinenbau AG at its Duisberg factory in West Germany. In addition to its grim pillbox aesthetics, it was also unconventional in its design concepts.

Sitting in the driving seat was like riding upstairs at the front of a double decker bus. But what an excellent idea! From this lofty perch the operator enjoyed an uninterrupted view of the world around him, including precisely what was occurring within the bowl of his dozer-shovel. No guess work here!

The engine and gearbox, plus all the other transmission bits, were behind him. So there was no necessity to peer along a bonnet or be subjected to engine heat

blasting back into the cockpit.

A buyer of the Demag 130 was offered a choice of power units. The most popular was the six cylinder 150 hp Berlin built Kamper 13.5 litre diesel. The alternative engine was the four cylinder 140 hp Modag two stroke diesel of a whopping 21.7 litre capacity. The gearbox provided four forward and a single reverse speed. Power was then transmitted by a bevelled gear to the front located drive sprockets. The hydraulically controlled wet disc steering clutches were operated by a toggle lever.

The track design was similar to the open link style favoured by Soviet and Chinese manufacturers. Although antiquated in appearance, the long tracks of the Demag proved durable and had excellent self cleaning capabilities.

CITREON KEGRESSE

Around 1916 the CEO of the Russian royal family (the Tza, Nicholas II) had a vexing problem. Not the one about his subjects dying in huge numbers from starvation. No, the other inconvenience. His Rolls Royce kept getting bogged in the snow!

Adolphe Kегresse, a French engineer was summoned to the Imperial garage to solve this tiresome problem. Simple! He swapped the rear wheels of the Roller for his specially designed half tracks.

The Kегresse half tracks consisted of a driver, an idler and in between — some track rollers. But the clever part was the material used for the actual tracks. A rubberised fabric was stretched between the driver and idler, resulting in the rubberised tracks being driven by **friction engagement**. Not that the technicalities of the fix for the Rolls Royce were of much interest to the Tzar. By this time, his loyal adoring subjects had dragged him from his limousine for the unhappy purpose of carrying out his execution.

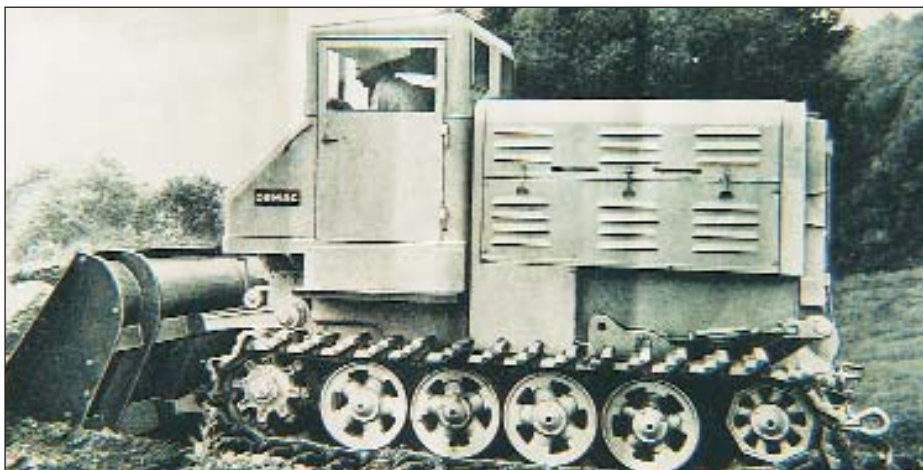
Kегresse returned to France where he joined car magnate Andre Citroen. By 1920, special Citroen vehicles were being equipped with Kегresse half tracks. Custom built Alpine cars had skis in place of front wheels and half tracks at the rear. The first motor vehicle to cross the Sahara was a Citroen Kегresse in 1922-23. A year later a similar vehicle was driven from Algeria, on the Mediterranean, to The Cape of Good Hope.

In 1934 four Polar Citroen Kегresse tractors were shipped to Alberta in Canada, with the aim of being driven over-

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The Demag was surprisingly capable bulldozer, with no pretensions of looking beautiful. The big 12 ft dozer blade was operated by sensitive hydraulic controls, rendering it ideal for shaving or grading operations, demanding a high degree of accuracy. (Photo I.M.J. archives.)



In this photo the length of the tracks can be gauged. Note the front located driving sprocket. This design of track gear was used on early military tanks. (Photo I.M.J. archives.)

land to the North Pole. The severe cold and the ice crevasses proved insurmountable for the vehicles and the expedition was aborted.

The Kegresse principle of rubberised tracks being driven by friction engagement, has been resurrected in recent years and incorporated in the Caterpillar Challenger series and John Deere T series.

AVELING BARFORD CALF DOZER

It is difficult to imagine a world without hydraulic excavators, but such a world did exist prior to the 1960s. Cable excavators with winches driven first by steam and later by big slow revving diesel engines were the order of the day. Compared with their hydraulic successors, the cable machines could apply only limited down pressure to break open new ground and they were fairly hopeless at back filling. Every trench opened has to be back filled!

Aveling Barford Ltd. was Britain's largest producer of cable excavators, and in the 1940s saw the need for a mini bulldozer aimed primarily at back filling and levelling work-sites. When the prototype was assembled and ready for trials, the design engineers were not amused to note the smirks on the faces of their factory col-



A 1949 Aveling Barford Calf Dozer owned by P and E Smith of Coalgate, New Zealand. The twin cast gearbox housings, each containing an over-centre clutch, are massively overbuilt for the nine hp engine. (Photo I.M.J.)

leagues. How could such a wee contraption claim to be a **bulldozer**? So it was christened on the spot — the Aveling Barford **Calf** Dozer.

The diminutive crawler tractor was compact in the extreme, having a length of a mere 188 cm, a tiny width of 136 cm and an overall height of the same. It would fit in the rear of a small panel van — except for its weight, a substantial 1.65 tonnes.

The engine used was a custom designed Dorman 800 cc single cylinder four stroke petrol engine delivering nine hp. An impulse magneto provided the necessary sparks. Twin massively proportioned gearboxes were provided with an inbuilt over-centre plate clutch. The tractor could be contra rotated around its own axis. The



A front view of the Calf dozer showing the hazardous operator position. The levers at either side are the clutch controls and the front left lever is the control for raising and lowering the blade. (Photo I.M.J.)

tracks had cast grousers with free floating track pins. Top speed was a rattling 1.4 mph, providing there was no head wind!

Only one problem! Where to locate the operator? Stick him out the front, immediately above the angle tilt blade, and hope he doesn't fall off! Or worse, don't let the calf dozer tumble into the trench being back filled!

So tell him to hang on like grim death to the clutch control handles (the only other controls being the throttle and the lever for raising or lowering the blade). Forget about the foot pedal for the brake — it never worked. But the heat from the radiator at his back will certainly keep him warm in winter. Don't even think about the summer heat in Oz.

IAN'S MYSTERY TRACTOR

QUESTION: The accompanying photo shows the view of the operator controls of a lightweight crawler tractor. Can you identify the tractor?

CLUE: It is pre-World War II vintage.

DEGREE OF DIFFICULTY: Seriously difficult.

ANSWER: See page 80.



The only surviving Citroen Kegresse half track Polar tractor which took part in the unsuccessful bid to drive overland to the North Pole in 1934. The roller located in front of the vehicle was aimed at preventing the front wheels falling into an ice crevasse. (Photo I.M.J. courtesy Reynold's Alberta Museum, Wetaskawin, Canada.)