

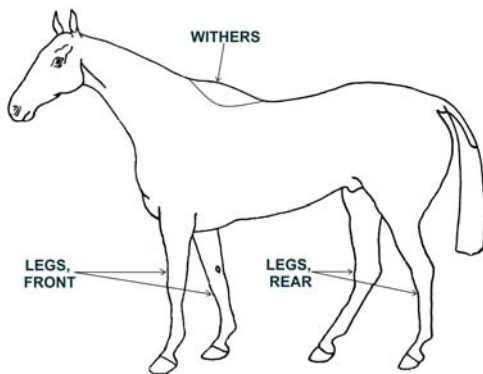
BRITISH ARMY HORSE TRANSPORT



Clive Elliott continues the story of animal transport in the British Army.

Throughout the history of human conflict no animal has played a greater part in warfare than the horse. The role of the horse can be very varied such as a fighting platform, for reconnaissance, message carrying and transport. It is the pack transport role in the British Army that will be considered here. This transport can either be in a pack role (directly carrying the load) or a draught role (pulling a cart or wagon).

A horse is an animal, together with donkey and zebra that belongs to the genus *equus*, the modern horse is the species *Equus caballus*. The height of a horse is measured in hands, a hand being 4 inches. This height is measured from the ground to the highest point on the *withers*.



There is often confusion between a pony and a horse. Although ponies and horses can have certain characteristics of shape, stature and behaviour, as a working definition, a pony can be regarded as a type of horse not greater than a certain height. Depending where you look for the definition this height varies from 13, 14 and 14.2 hands. The British Army definition was 14 hands, even so activities of polo and pony racing sometimes cut across this height definition. Unlike people, the age of a horse is not based on its birthday but on the anniversary of certain dates, this varies with the breed of horse and the location. Army horses at home were aged from the 1st April, but in India it could vary from 1st January, 1st April or 1st October. In peacetime horses between the ages of 4 and 7 years were accepted, but in wartime this was extended from 6 to 12 years.

Horses for military service had to be sound, free of disease and bad habits. They were mature horses and could be either mares (female) or geldings (castrated males). Stallions (uncastrated males) and rigs (males with one testicle removed, the other undescended) were not chosen as there was always a risk of noisiness or bad behaviour. Horses with docked tails i.e. cut back to the fleshy part of the tail, were not to be purchased because the tail was helpful in dispersing flies. But in Victorian times there was a tendency for horses in service to have their tails docked for smartness. This rendered the horse “practically unfit for service” in areas where flies were prevalent. Tail docking was a common practice although it contravened the regulations on the length of horses tails. To stamp out the practice, inspecting officers were required to report all instances of docking. The length of tail requirements were then incorporated into the Queens Regulations of 1883 and I see are still there in the Queens Regulations of 1955. Lightly coloured horses were only accepted for special purposes. Horses described as having a “washy” colour were not accepted as they were assumed to lack hardiness, a view expressed in 1908 that was repeated in 1933. Darkly coloured horses were chosen as they were less conspicuous against almost any background. Although there were instances in East Africa where horses were painted to make them look like zebras! Apart from colour, for many of us a horse is horse, other than some being bigger than others. But there are other characteristics that were helpful to the various units within the British Army. For non-horsy people like me, these features are best appreciated by photographs and a brief description. For completeness I will describe all five main types of horse used in Army service, not just those in a transport role. This is based on the criteria in operation in 1909.

Household Cavalry

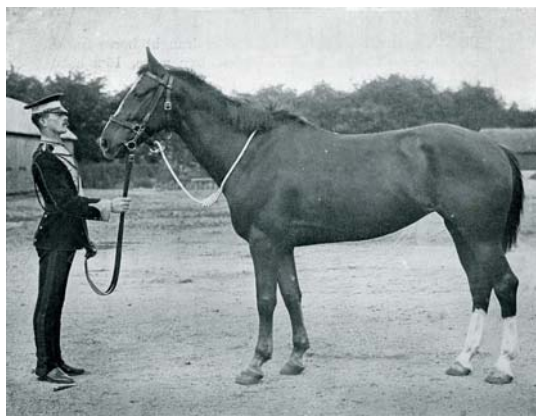
Household Cavalry horses had to be black and as prestige horses were mainly employed in an escort role in London, so they had to be good-looking. Consequently the purchase price of these horses was much higher than horses in a general service role. The height required at 4 years was 15.3 hands and at 5 years 16 hands.



A 6-year old black gelding from the Royal Horse Guards standing at 16 hands

Cavalry of the Line

Cavalry of the Line refers to cavalry other than the Household Cavalry. The requirements were for a shorter horse and colour was less important. The height required at 4 years was 15.0½ to 15.2¼ hands and over 4 years 15.1½ to 15.2½ hands.



A 5-year old mare from 21st Lancers standing at 15.3 hands

Royal Artillery

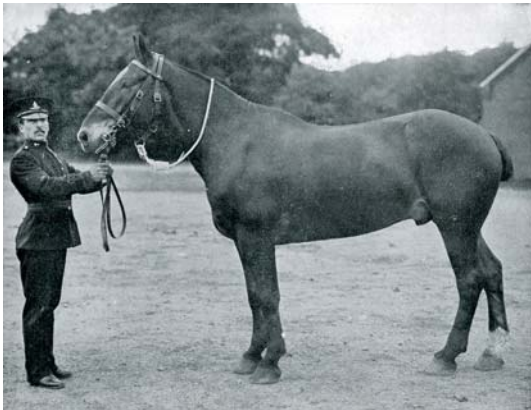
Royal Artillery horses were needed as weight carrying horses whether in a draught team or not. It was important to have a similar type of horse whether they were in a gun team or not, so a wounded animal could be replaced effectively. The height required at 4 years was 15.2 to 15.3 hands and over 4 years 15.2½ hands to 16 hands.



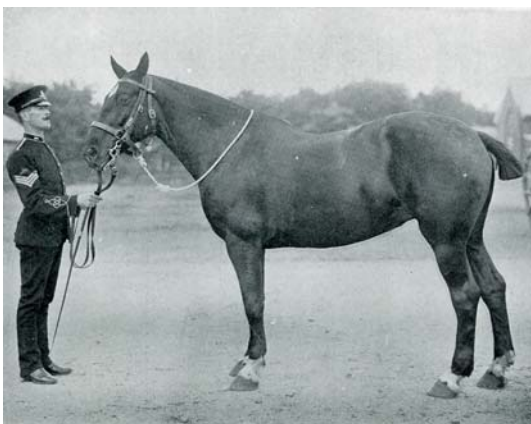
A 9-year old gelding in the Royal Horse Artillery standing at 15.3½ hands



A 13-year old gelding in the Royal Field Artillery standing at 15.0½ hands



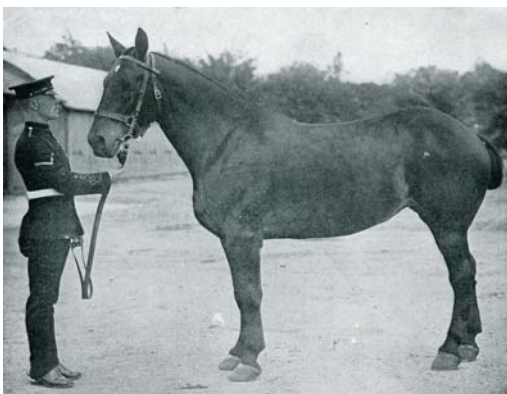
A stocky 8-year old gelding in the Royal Field Artillery standing at 15.2 hands



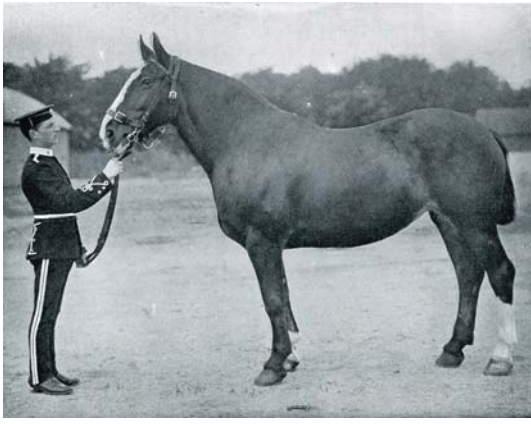
A 10-year old mare in the Royal Field Artillery standing at 15.2½ hands

Royal Engineers & Army Service Corps

Royal Engineers & Army Service Corps required draught horses more of a “cart horse” type but able to give good speed although not as much as in the Royal Artillery. Royal Engineers specified the height required at 4 years as 15.2 to 15.3 hands and over 4 years 15.2½ to 16 hands. Army Service Corps specified the height required at 4 years as 15.2¼ to 15.3 hands and over 4 years 15.2½ to 15.3½ hands.



A 12-year old R.E. mare standing at 15.0½ hands

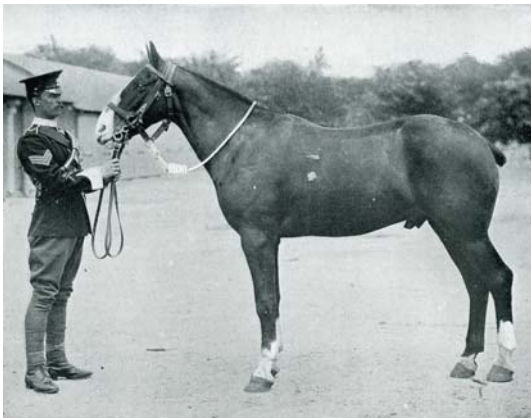


An 8-year old A.S.C. mare standing at 15.2 hands

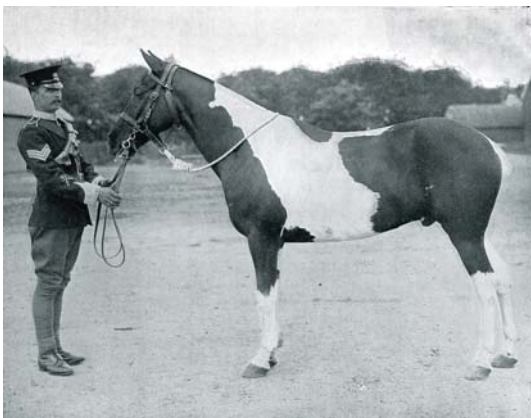
In peacetime the R.A, R.E. & A.S.C. required 1,360 replacement horses each year.

Mounted Infantry

Mounted Infantry may sound a contradiction, whilst the Cavalry fought on horseback, Mounted Infantry merely used the horse as a means of transport to the battle where they dismounted and fought on foot. Horses were needed that could gallop fast over short distances, the most suitable were found to be cob or Galloway types. Slightly older horses were used and a height chosen to be above the standard for polo, ensuring a plentiful supply of the right quality of animal. In peacetime 140 replacement horses (remounts) were required each year, this was in sharp contrast to the Cavalry requirement of 1,000 horses.



A 12-year old Mounted Infantry cob standing at 14.2½ hands

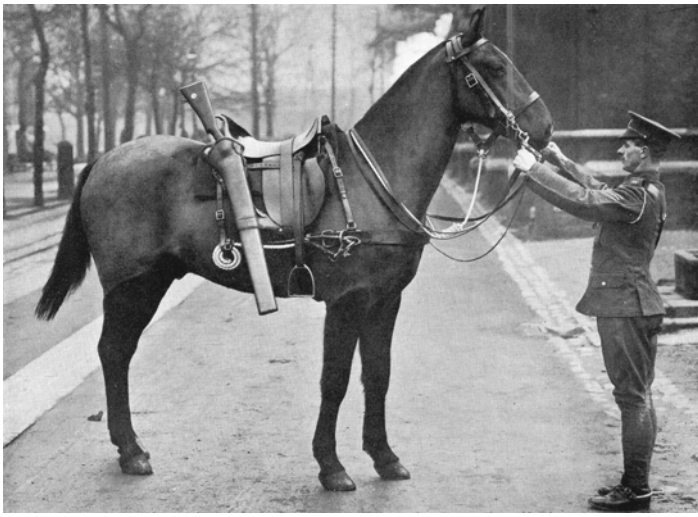


A 9-year old Mounted Infantry cob standing at 14.1½ hands, no doubt benefiting from “disruptive camouflage”.

Saddlery

Last time I described the characteristics of mules and their various types. Although this article is primarily about horse transport, as far as pack saddlery goes, in most instances pony and mule saddlery is identical.

A riding saddle has a seat for the rider and the load is spread from the centre of the saddle to sides of the animal’s back, but with clearance to avoid pressing on the animal’s spine.



A riding saddle on an N.C.O.'s horse

A pack saddle has no seat but like a riding saddle has a *tree* that forms the underlying structure of the saddle. *Pannels* made of leather and stuffed with horse hair, form a cushion between the animal and the rest of the saddle. Note that for much of the last century *pannel* was spelt that way, from the Latin *pannellus*.



Part of an unissued 1943 pack saddle pannel seen at Sabre Sales recently

The saddle is secured to the animal by *girths* that go under the animal's belly. Forward or backward movement of the saddle is restrained by straps around the front and rear of the animal. A *surcingle* is a long strap that goes over the whole load and under the animal's belly, it is merely to steady the load, the securing of the load is by ropes.

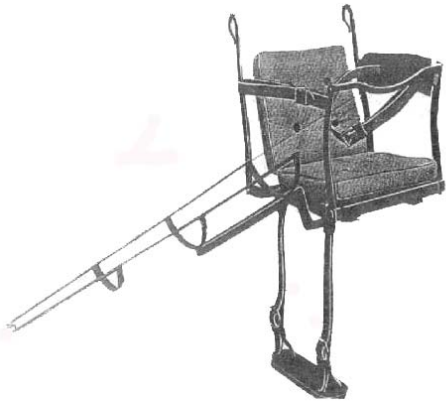
P.A. = Packsaddlery, Artillery
P.G.S. = Packsaddlery, General Service
P.M.G. = Packsaddlery, Machine Gun

The purpose of any saddle is to distribute the weight of the payload to the animal's back in a way that neither causes injury, soreness or restriction of movement. It should be remembered that the saddle and any accessories are part of the payload and this weight must be deducted from the weight of the goods to be carried. Loads must be placed both side of the saddle in a balanced way and just because a payload can be fitted to a pack saddle, it doesn't mean the animal can carry it for long. Overloading an animal is not only cruel but it means that the animal will have a reduced range of travel before it becomes exhausted. Correct fitting of the saddle and accessories is important to avoid injury to the animal and reducing its effectiveness.

Pack saddles evolved into two sizes, small and large. Small saddles could carry a normal payload, but large saddles could be used to carry either a normal payload or a pair of cacolets. These were iron-framed chairs for carrying sick or injured patients. Given that a pair of the chairs weighed 56lb added to the weight of the saddlery, then with two patients, it was a heavy load for an animal to bear. The large saddle was specifically designed to allow the use of cacolets which were introduced into the British Army in the Crimea based on a pattern used by the Turks.

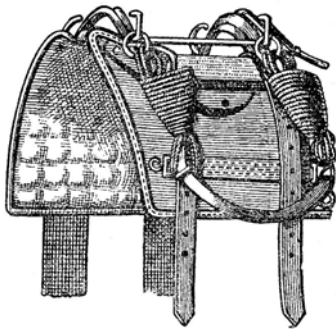


Pack Saddlery G.S.- Cacolet, causing grins on the faces of two of the soldiers

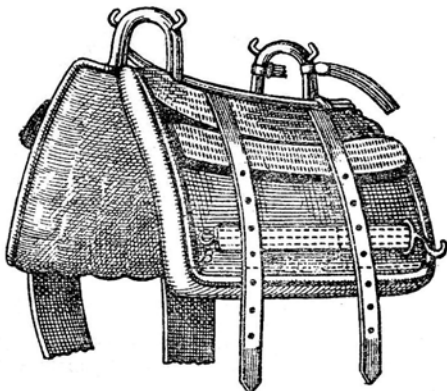


Patients with leg injuries could be supported in a Rests, Leg.

1884 saw the introduction of *Pack Saddle, G.S., Mark III*, available in both small and large versions. The quoted weight of a saddle included the weight of all accessories i.e. bit, head collar, girth, reins etc. The small saddles weighed 46 lbs and the large 49 lbs.



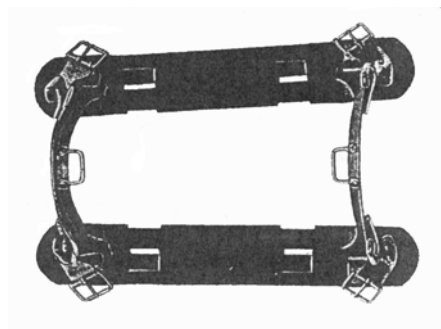
Pack Saddle G.S. Mark III, Small.



Pack Saddle G.S. Mark III, Large

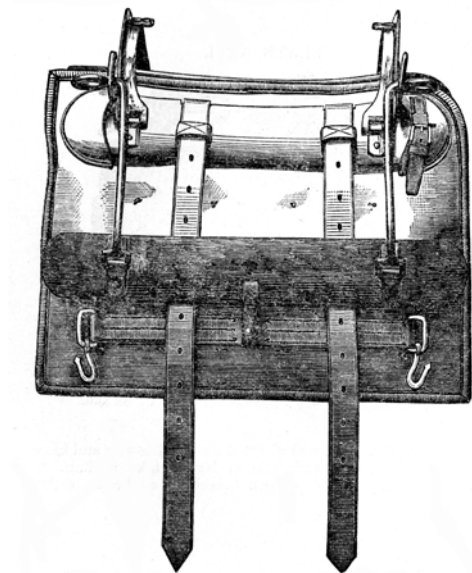
The tree of the large saddles consisted of metal arches connected to hard wood side bars running horizontally. The upper bars were fixed to the metal arches, but the lower bars were hinged to allow the pressure to spread when cacolets or a heavy load was carried. Small saddles differed in that the upper bars were metal and there are no lower bars. The metal used in Mark III saddles was of cast angle iron. In 1890 these were replaced by steel in the Mark IV model, which was otherwise almost identical.

1904 saw the introduction of the *Universal Pattern, Pack Saddle, Mark V*, which by 1909 had evolved into the *Pack Saddle, G.S., Tree, Adjustable, Mark I*, although Mark V was the designation that seemed to persist even to 1949. The whole tree was made of steel with arches jointed and moveable, this meant that the saddle automatically adjusted to the shape of the animal's back. The adjustable tree had already been employed by the Austrian Army around 1890 in a riding saddle. An example was brought over here for assessment and although the concept was well received the idea was not taken up for some years.



The adjustable tree.

Hanging bars and girth were issued for use with cacolets and other loads, *Frame, Wood* was issued to be fitted over the tree to convert it to a machine gun or ammunition saddle. These embellishments were said to satisfy the need for only one size of saddle, which would have been a major step forwards in pack animal transport. However I see in a 1931 Vocabulary that similar pack saddles were available in small, large and extremely large.

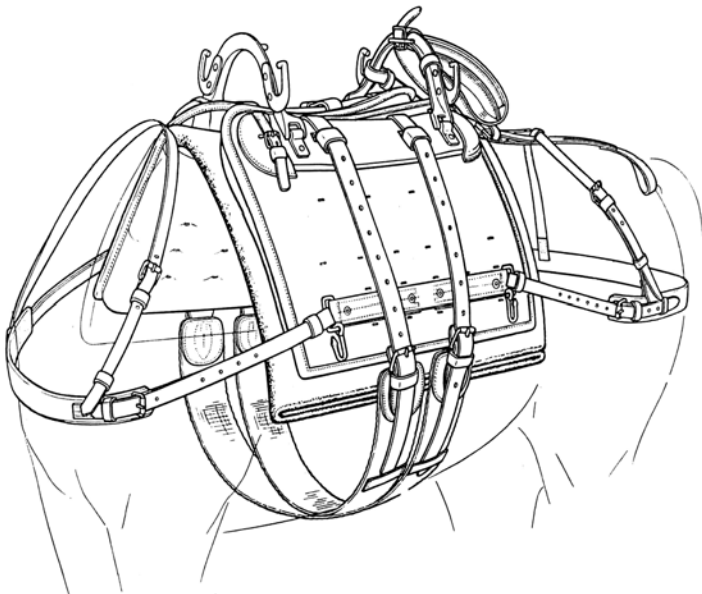


Pack Saddle, G.S., Tree, Adjustable, Mark I, with hanging bars

Some of the associated "harness" was made smaller; chains were replaced with straps and buckles. Baggage ropes of Italian hemp replaced cotton ropes as they were stronger and lighter. The whole setup reduced the weight of saddle and accessories to 35 lbs 13 ozs., this allowed an increase in payload. Although the fitting of a pair of *Bars, Hanging* added 6 lbs 4 ozs. These bars were for any load that required lower bars on the saddle including cacolets. The adjustable tree saddle was in general use by 1909 as it gradually displaced the Mark III, Mark IV and Mark IV* non adjustable saddles. These newly issued saddles were fitted with *Pannels, P.G.S., Mark V*.



All the pack saddlery accessories, although only one Pannel, P.G.S., Mk V, is shown.



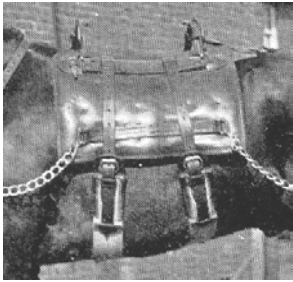
The pack saddlery all fitted.

Although there were variations for animals chosen for special roles, the standard weights to be carried, excluding the saddles and accessories, were:

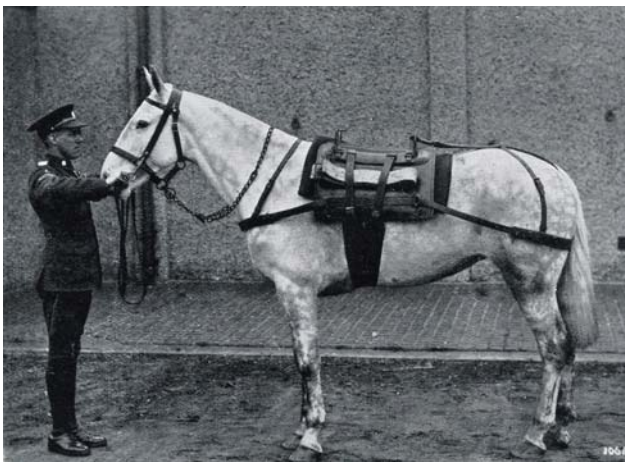
Donkey	100 lbs
Mule or pony	160 lbs
Horse	200 lbs

It was important to saddle up the animal correctly; time spent on this would reduce the incidence of sore backs. It was important to clean the saddle pannels and the horse's back to avoid dirt or matted hair pressing into the back. Attention was needed to keep the horse hair stuffing in the pannells free of lumps and well distributed. After short use of a new saddle the stuffing was augmented. New saddles were provided with 1½ lbs of horse hair which had to be packed into the saddle after a short amount of use, and this was in addition to the annual allowance of horse hair. Proper tensioning of all straps was important as well as ensuring the saddle is well balanced. Any shift in position of the saddle should not be corrected by trying to push it, the whole load and saddle needed to be removed and the error corrected before reloading. A loading party of three men was required:

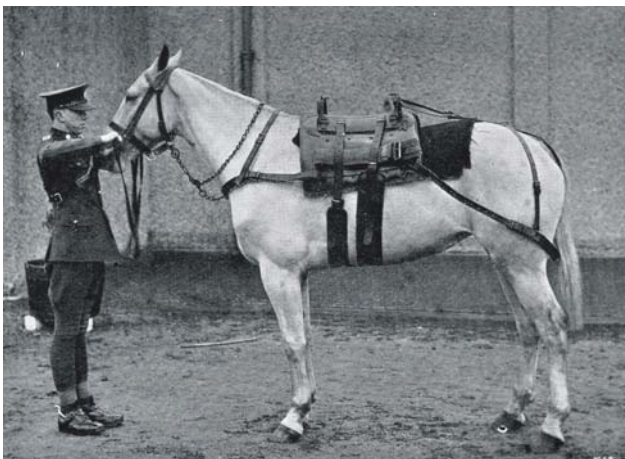




Twin girths were provided to give the saddle improved stability and were a feature of pack saddles of the time. Most riding saddles have a single girth and although less stable, this can be compensated for by the rider shifting his position to move the centre of gravity. Once a payload is no longer balanced on a pack saddle it can easily become displaced, either being lost or compromising the animal's efforts. The above pictures were taken from a manual dated 1909 and amended in 1915, when girths were required to be spaced by about 12 inches. However by 1937 the girth arrangement had changed, so that the girths crossed under the animal's belly. By this stage it had become redesignated as *Pack Saddlery, G.S.- Old Pattern*.



Pack Saddlery, G.S.- Old Pattern, correctly fitted with girths crossing under the belly.



Pack Saddlery, G.S.- Old Pattern, with common faults in saddling.

Although a new pattern of saddlery was now in service, much of it including the saddle tree was identical. The main components to change were in the girthing equipment. Loading loosens girths, so adjustment was always needed. The problem, even with the latest *Girths P.S. Mark V*, was that it was very difficult to adjust once the load was on the saddle. The other problem was that there was no means of attaching the surcingle that was strapped over the whole load.



This R.A.S.C. Sergeant awkwardly adjusting Girths, P.S., Mark V

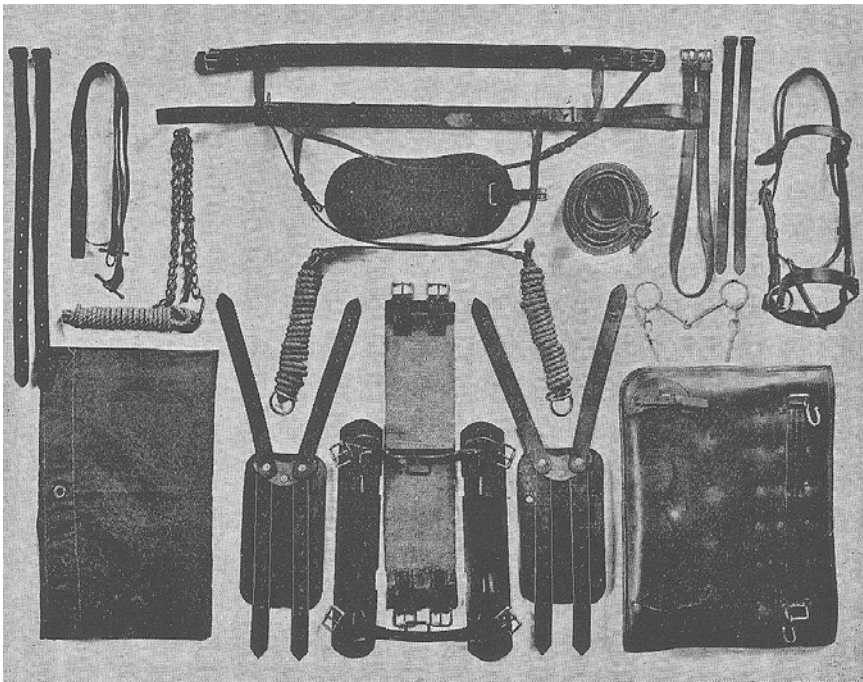
The breakthrough was the introduction of a “V” attachment to the saddle, this allowed a single girth to be used. The girth was shorter which meant that the buckles were now lower and more accessible. The girth was also stronger and wider than a pair of Mark V girths, giving greater security and less rocking of the load. Note that there is a pair of buckles at each end of the girth and three leather hoops to keep the surcingle in position.



The “V” attachment making adjustments much easier.

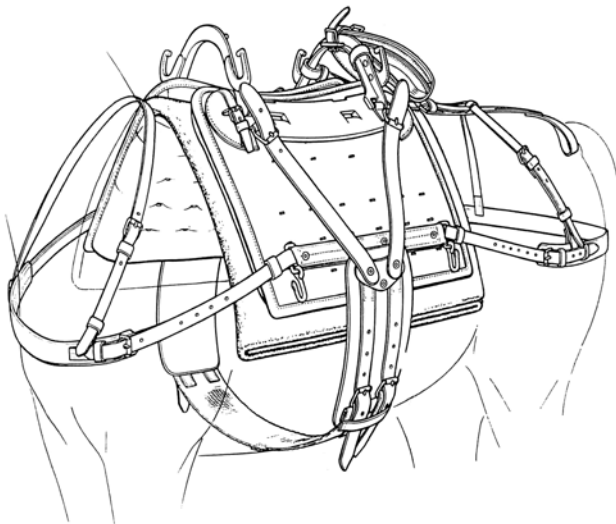


The “V” attachment folded down, seen here at Sabre Sales in perfect condition.



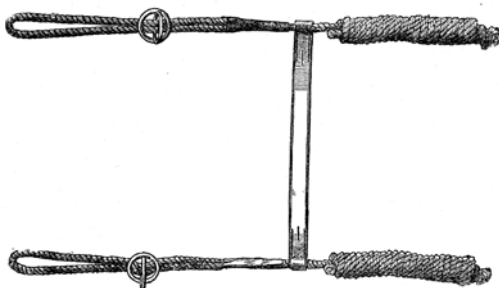
Pack Saddlery, G.S. – “V” Attachment, only one Pannel, P.G.S., Mk. V is shown.

A saddle blanket was not yet included as an item of pack saddlery equipment. Blankets had long been in use under riding saddles, but eventually it was acknowledged as desirable to cushion the burden of a loaded pack saddle with a blanket. This helped reduce the incidence of sores that might impede the animal’s progress.



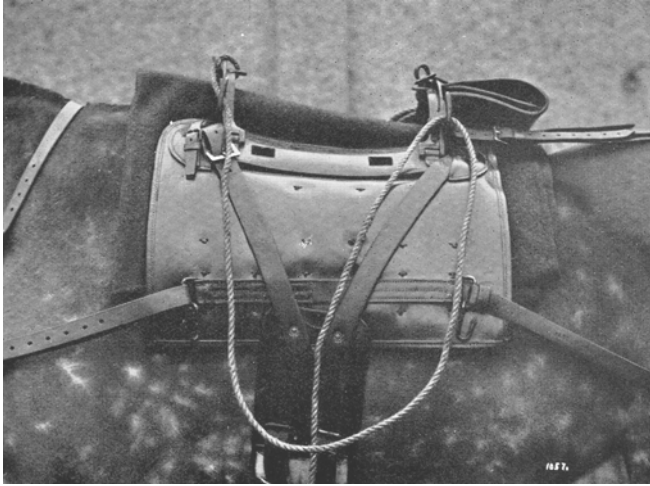
This is essentially the earlier saddle modified by the addition of “V” attachments.

The “V” attachment improved the stability of the saddle, but this was of little value if the load was not effectively secured to prevent it falling off or slipping. Two pairs of baggage ropes were provided, which consisted a leather strap 18 in. long to go centrally over the load leaving a rope 13 ft. 6 in. on each side of the saddle. The looped end was secured to the saddle with rings the other end was to tie the load onto the saddle. Other pack animals had a single baggage rope, for donkeys it was 40 ft. long and for camels 60 ft. long.



Pack Saddlery, G.S., Ropes, Baggage, Mk. 1 (The length of the strap was adjustable on the Mk. 2).

Lashing of the load to the saddle needed skill and forethought, not just provide security for the load but to allow easy unloading. Ideally knots should be used that allow easy adjustment and where possible undone by a single pull on the rope. It was not just in consideration of the destination but the need to rest the animal along the route. Resting the animal does not just mean standing still, it must be rested by the removal of the load. Pack animal attendants were expected to be skilled at loading the saddles in a sensible and balanced way as well as being proficient in the use of a wide range of knots.



The first stage of a Basket Hitch.



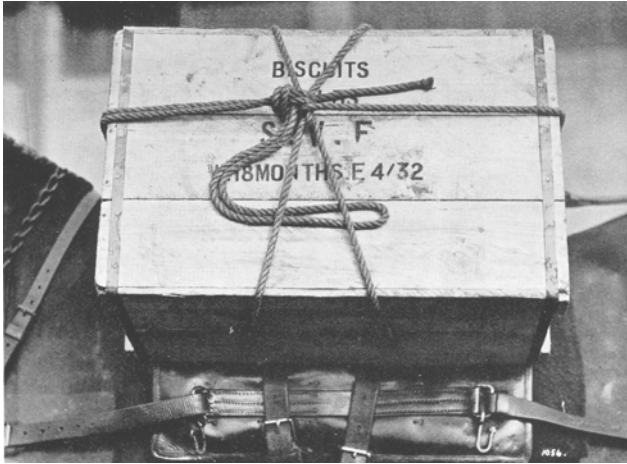
Coordinated tensioning in the second stage of a Basket Hitch.



Diamond Hitch, Stage 1.

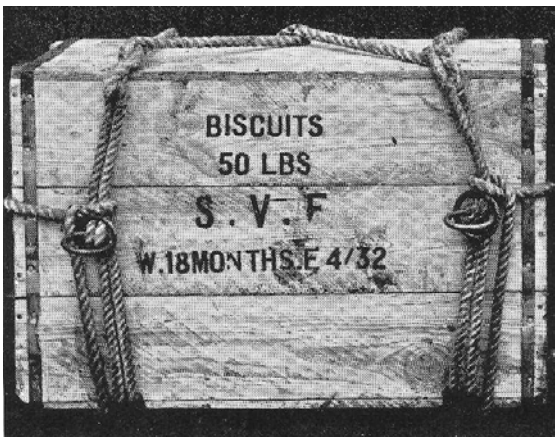


Diamond Hitch, Stage 2.

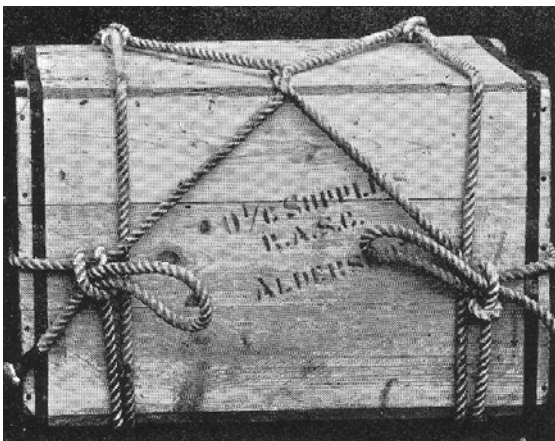


Diamond Hitch, Stage 3

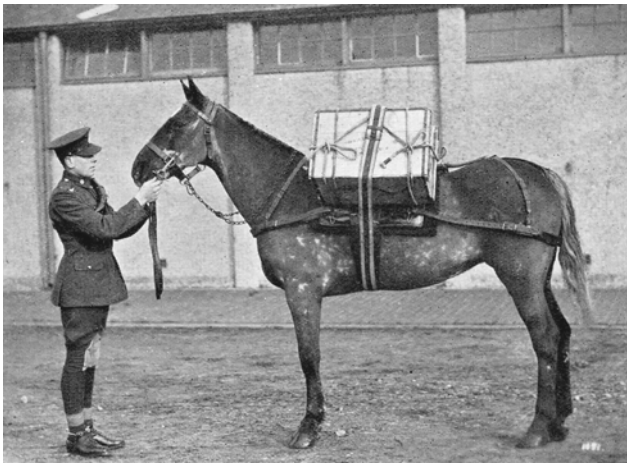
Sometimes loads can be roped in readiness, which can save a lot of time.



Ready roped box on the saddle side.



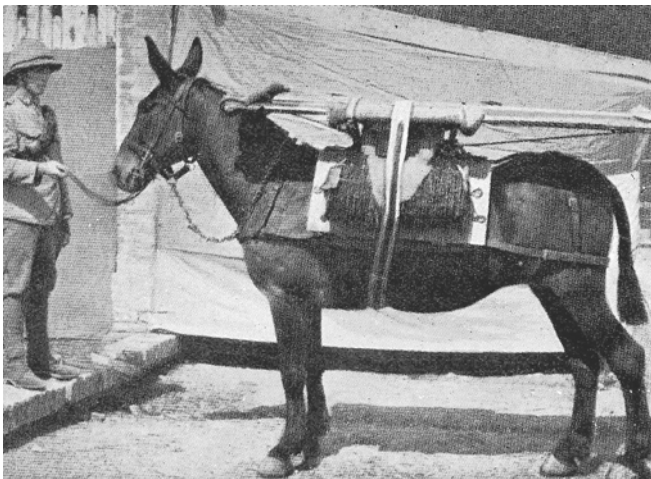
Ready roped box on the outer side.



Ready roped boxes fitted, note the surcingle over the load providing stability.

When ammunition boxes were carried the rope handles were not to be used for securing the load. Nets to carry loads were troublesome as they rarely fitted the load properly and were unstable. Although some supplies had to be carried in nets e.g. chopped animal feed, cooking pots etc.

Top loads tended to be unstable and were best avoided as they were unsteady and the weight above the saddle tree tended to open out the saddle tree giving a poorer fit at the sides. If some of the load could be carried at the sides this helped retain the fit of the saddle. But difficult loads such as a sheet of corrugated steel or a stretcher could be carried by the use of boards lashed to the saddle.

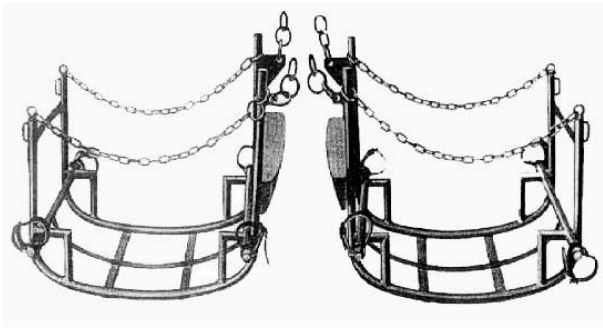


Top and side loads with much needed support from the surcingle.



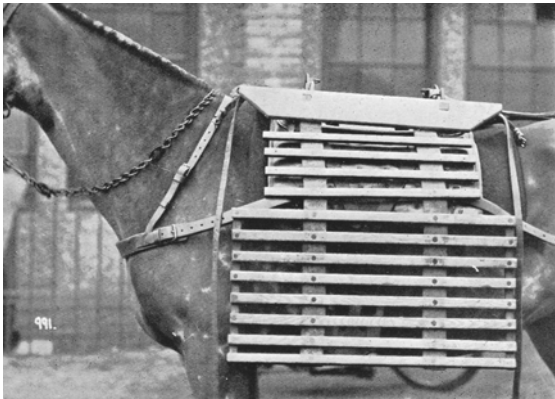
Blankets providing a more balance top & side loading.

Cacolets provided a rather sedate way of moving casualties, less comfort was afforded by basket like frames hung from the saddle by rings.



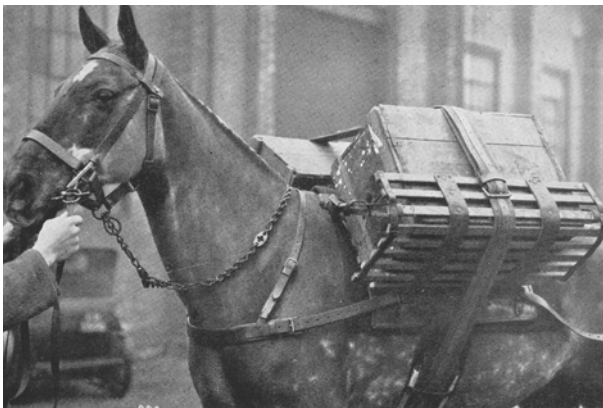
Carriers, Casualty, P.G.S.

As we shall see later there were all sorts of specialised saddle frames for particular equipment. The movement of some stores could be problematic not just in the time taken loading and unloading but in trying to accommodate awkward shaped stores securely. A very useful device was the Universal Carrier which consisted of a series of wooden slats attached to leather straps allowing a load to be bundled up and secured.

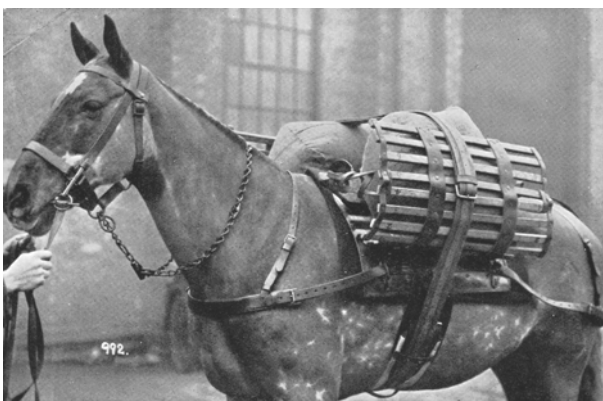


Carriers, Universal, P.G.S.

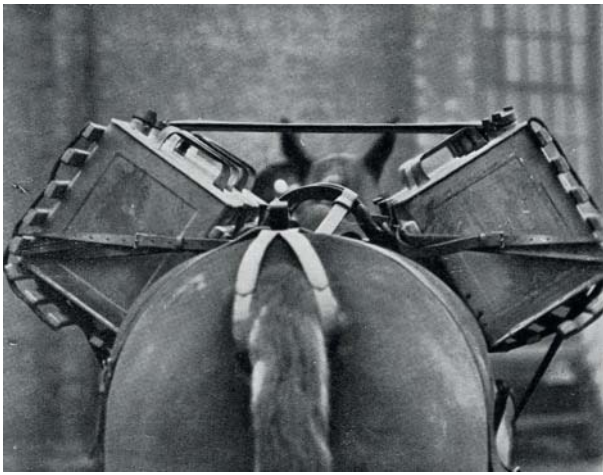
The ash slats were 1 in. wide and $\frac{3}{4}$ in. thick. The upper four slats were 23 in. long but the lower eight slats were 33 in. long. They were all riveted to two $2\frac{1}{2}$ in. leather straps with additional thinner straps at the ends of the longer slats. The slats were rolled up under the load and held by leather straps at each end. The surcingles maintained the carrier in position and held the load down, ropes were not usually necessary although a set of baggage ropes were issued as part of the kit.



Carriers, Universal, P.G.S.- Box Load.

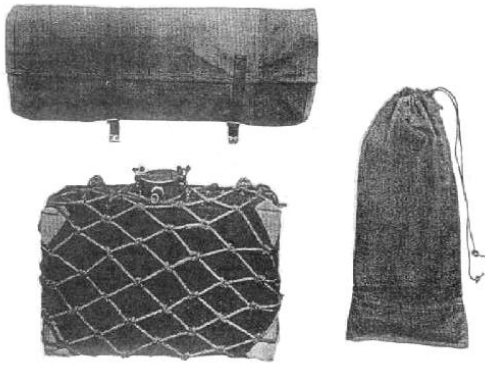


Carriers, Universal, P.G.S.- Sack Load



Carriers, Universal, P.G.S. - Petrol Cans

A range of accessories were available for carrying particular loads more easily. There were special panniers for General Service, Field Medical, Medical Comforts, Groceries, Intrenching Tools, Signalling, Canteens (A, B, C, D), Carpenters & Saddlers Tools. (Intrenching is the correct spelling)



Above: Valises, Greatcoat, P.A. Canvas.

Underneath: Tanks, Mule. On the right: Bags, Line gear, P.A., Canvas



Above: Bags, Intrenching Tool, P.G.S., 29-in x 20-in

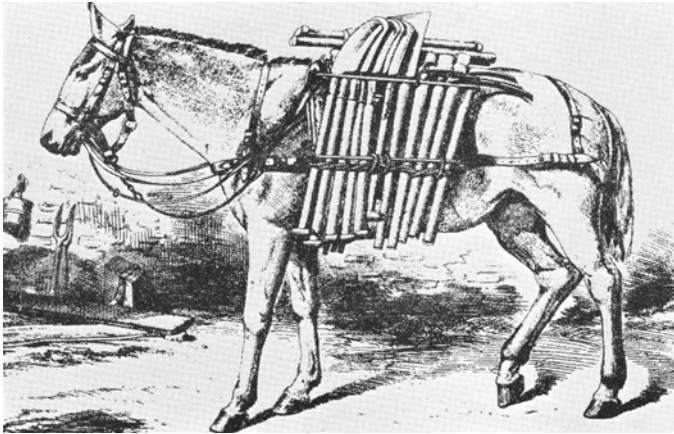
Below: Boxes, Pack Saddle, Mk 2.

Pack animals had a role to play in signals, there are even paintings of animals engaged in line-laying in Victorian times. The line laying continued alongside the usage of wireless sets mounted on animals and in some instances a charging generator! Equipment from Wireless Set No.1 to No.22 has been animal mounted, but I can find no mention in any Vocabularies of specific saddlery for such purposes. This suggests the equipment was adapted to fit existing saddlery. There could be no such improvisations for some engineering roles and in particular artillery. Some of the specialist accessories included leatherwork to be hung over the saddle and strapped down. The picture below, I think, is one side of *Racks, Intrenching Tools, Flaps*. The flap was hung from a bearer that was a flat bar which itself hooked onto the saddle.



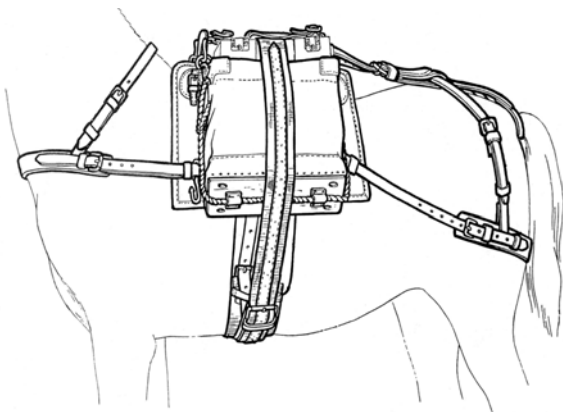
Complicated pack saddlery seen at Sabre Sales recently.

Only limited tools were carried on such saddlery, this is in contrast to the large amount of digging equipment loaded on the pack saddlery of a Field Company of the Royal Engineers in about 1870.

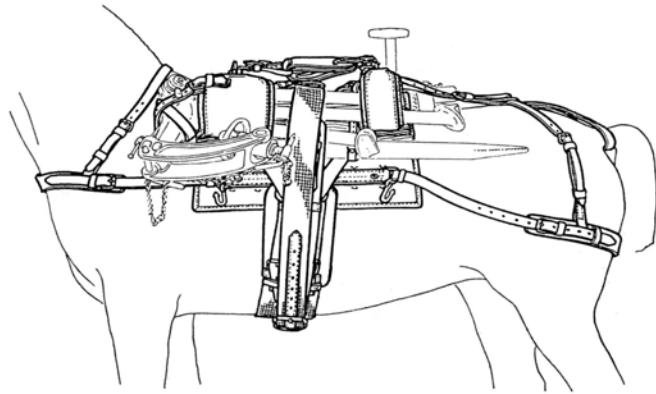
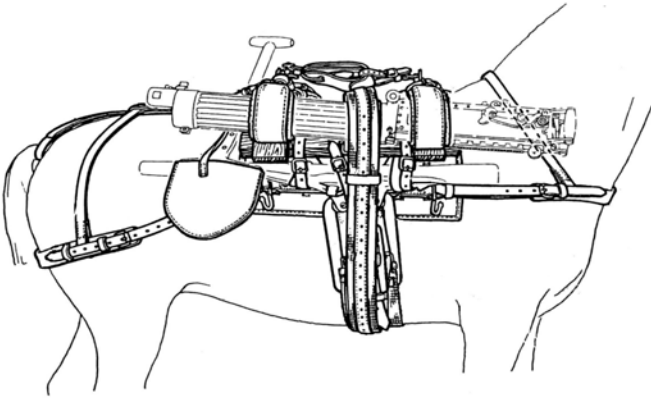


Such loading of tools on a pack animal was phased out with the introduction of the limbered R.E. Tool Cart in 1887, which carried a more comprehensive range of tools.

Pack transport was not just for work behind the front lines, fighting units relied on pack transport to carry heavy weaponry and its ammunition. Below can be seen *Pannels, P.G.S., Mk 6* accommodating *Racks, Boxes, Belt Ammunition, Infantry* and a more complex set up for carrying the *Vickers Machine Gun* itself, shovel and a box of spare horse shoes.

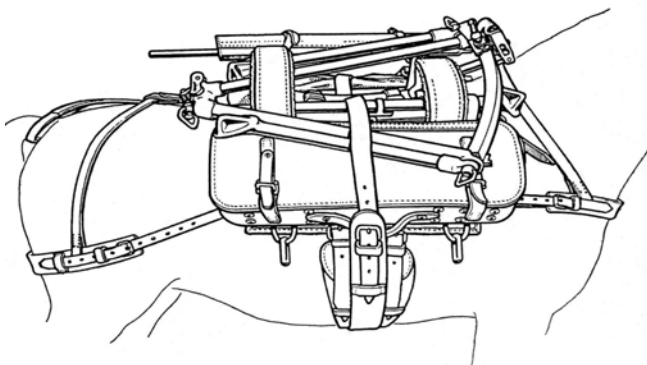
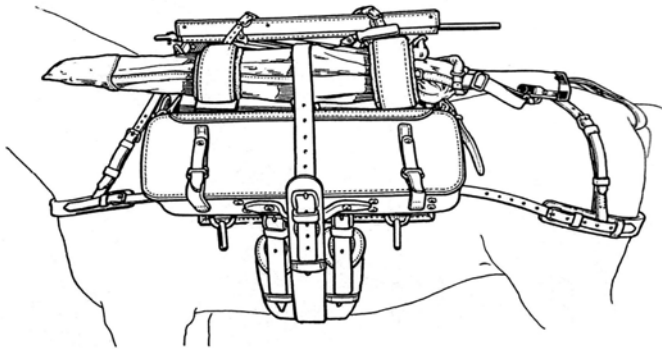


Pack Saddlery, Vickers Machine Gun, Ammunition Set

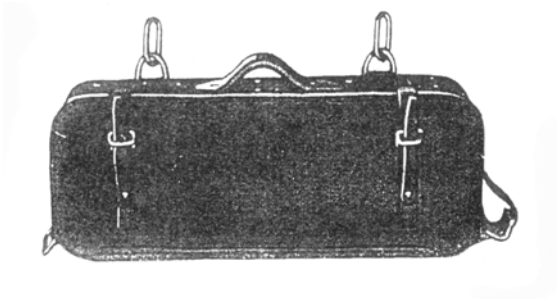


Pack Saddlery, Vickers Machine Gun, Gun Set Assembly

There was also a carrier for the Bren Gun, although this was mounted on an unmodified pack saddle. Meaning that it wasn't fitted with the "V" attachments and relied on two girths crossed over underneath and still used the Mark 5 pannels.

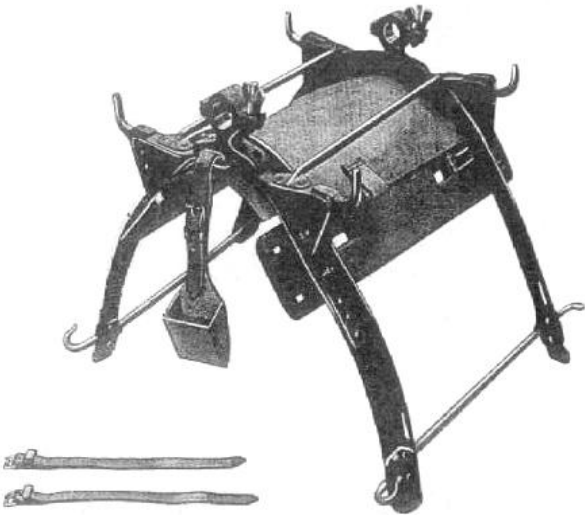


Pack Saddlery, Machine Gun, Bren, Infantry, - Set Assembled.

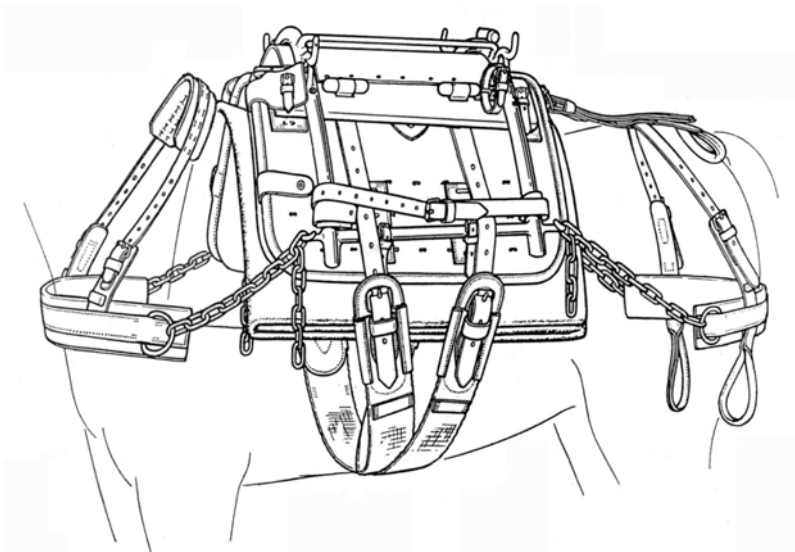


Carriers, Ammunition, Bren were carried on each pannel.

The basic saddle could be adapted to more specialist load carrying by fitting a frame, this was particularly important with heavy items ensuring the weight was evenly distributed and did not shift during the journey. Originally this was achieved by *Frames, Wood* that fitted over the saddle. The use of metal frames added to the versatility of what could be carried. A typical example was a frame to carry intrenching tools strapped to hooks on each side and a crowbar clamped centrally with an end protector.



Saddles, Packsaddle Artillery, Intrenching tools & crowbar, Mk 1.



Packsaddle Artillery – Ammunition Saddle Assembled



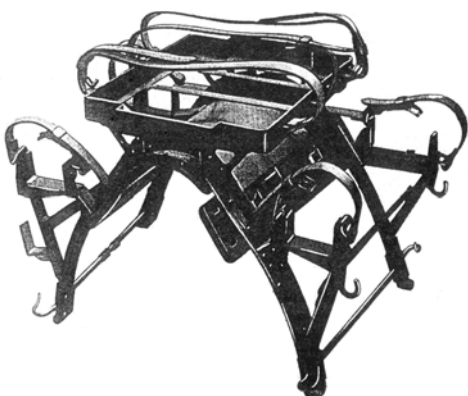
Collars, Breast, Packsaddle Artillery, this goes around the animal's front.. An example of 1944 saddlery from Sabre Sales.

Much of the specialist packsaddlery was devoted to the transport of artillery in mountainous regions. These are areas where wheels could not travel, be it drawn by an animal pulling or even in modern times towed by a vehicle. But if it was possible to break a gun down into components, then these parts could be carried by a group of animals and then assembled at the destination.

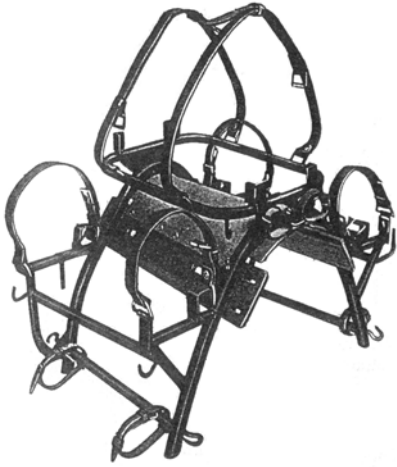
Although 3 pdr. Guns had been carried on mules, during the Afghanistan campaign in 1841, the first entirely mule borne artillery unit was not established until 1850, again for service in Afghanistan. Even with a gun broken down into its components, some of these parts would still be extremely heavy and approaching the maximum load for a mule. Because loads carried as a “side load” had to be balanced with a similar load on the other side, there was no option but to carry a heavy item as a “top load”. Being top heavy meant great care was needed to secure the load and keep it there. It also meant the men top loading a mule had to be very strong and very tall (over 6 ft). The gun in service was the 4 ²/₅ in. Howitzer. Although it had passed out of general usage in about 1800, it continued in the service of mountain batteries until 1865. The next gun in use for mountain artillery was a 7 pdr Rifled Muzzle Loading gun weighing 150 lbs, superseded by a longer barrellled version weighing 200 lbs. Then in 1879 came the famous Screw-Gun, mentioned by Rudyard Kipling during his time in Afghanistan. Officially described as 2.5 in. *Jointed R.M.L. Gun*, five mules were needed to carry the Screw-Gun and its associated stores. In 1901 the 10 pdr Breech Loading Mountain Gun was introduced, to be superseded by an improved version, in 1911, known as the 2.75 in. B.L. Mountain Gun, which now required six mules to transport it.

The final descendant of all this was the 3.7 in. Quick Firing Mountain Howitzer, introduced in 1917, which benefited from a hydro-pneumatic recoil system. The various components needed special saddlery, although there was some common usage of some saddle types, it was complicated by the fact that the gun evolved into three Marks and some saddles were not compatible with different Marks of gun. The gun was declared obsolete in 1960.

I have identified sixteen types of packsaddlery for the Q.F. 3.7 in. Howitzer. The specialised nature of the saddles can be judged from the two examples for similar components.



Carriage, Trail, front or rear. Mk 2



Carriage, Trail, front or rear. Mk 3

It should be noted that in general the most valuable part of a pack animal and its load, is not the animal or the load but the pack saddle itself. A pack saddle was generally of more value than a riding saddle. Wastage rates through warfare were not just due to enemy action, but like vehicles, saddles need constant maintenance and care. In wartime this was rarely achieved and unrepaired damage could lead to failure or lack of oiling caused cracking then tearing of leather or soreness to the animal. Stores can be replaced and animals replaced or supplied locally. But the manufacture of pack saddles is a process that cannot be dramatically increased even in times of warfare. Locally obtained saddles would be riding saddles or so crude that they were of no value in effectively transporting military stores. Attempts to make improvised saddles were always disappointing as loads were lost or full loads could not be carried. It was different for riding saddles though, there was a cutback saddle known as the *1915 Pattern*. This was clearly a wartime economy version as it was nearly half the price of the standard officer's saddle. It must have been fairly durable as it was still listed in a 1940 Vocabulary!

One might have assumed that after WW2 the role of the pack animal would be limited and that there would be enough saddlery left over after the war to cope with contingencies. But in July 1947 the Interservices Technical Committee meeting in India considered the merits of various types of saddle in order to come up with a universal pattern of saddle that could be used by the armies of Britain and India. After many considerations it was decided that the Indian Pattern was to be adopted as it could be used either as a pack saddle or as a draft saddle. Given that India was the area where most pack saddlery would be needed, one can see that with the independence of India in the following month that the British requirement for pack saddlery was dramatically reduced. So the wartime pack saddlery continued in service in many trouble spots around the world.

For those of you who understand about horses I am sorry that my coverage has been somewhat limited, but this is just an attempt to give a flavour of the technicalities that lie behind what military vehicle owners might consider a more basic form of transport. I am grateful for the input of Roger Dennis and Tom Ready, who are both experts in military accoutrements. Although for the last thirty years I have lived in close proximity to horses, my fascination for them has been limited, much like my wife's interest in anything that has wheels and painted green! Next time I will cover wagons and carts.

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