

# US WW II Linemen's Jeeps & Associated Equipment

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One of the lesser-known items of equipment that was commonly fitted to US Army Jeeps during WW II was the RL-31 cable reel unit. It was described by the US Signal Corps as 'RL-31 – A reel cradle for DR-4 and DR-5, carried by hand or in a vehicle.'

The RL-31 is a tubular metal frame used to hold large reels of telephone cable. Communications teams in the US Army infantry and armored divisions used the device for swift maintenance and installation of field telephone lines. It predates the Jeep and was initially designed for mounting in early Signal Corps 1/2 ton Dodge trucks.

As shown in the photographs the RL-31 can be used in three ways:

- The unit can be completely opened up and be carried by two men like a stretcher. In this method it was used to manhandle telephone line cable over rough ground or in places where a Jeep was unable to gain access.

- Alternatively the unit can be dismounted from the vehicle and locked into a freestanding 'A' frame arrangement. In this application it was used to hold large cable reels enabling the lineman to manually pay out cable for repairs and maintenance of existing cable routes.
- The third method of use was to mount the RL-31 onto a vehicle and use the carrier to pay out cable as the vehicle moved at a steady speed.

The 1/2 ton truck when introduced to military service was initially seen by the US Signal Corps as being far too small for practical laying of field telephone cables. Instead the Signal Corps used much larger trucks to lay cables, primarily because of their superior load carrying ability.

After the successful introduction of the Jeep the US Army conducted tests on the RL-31. It was soon established that the main drawback of the 1/4 ton truck for line laying was its inability to carry the large amounts of cable necessary to lay long cable runs.

The off road maneuverability of the 1/4 ton however, combined with its 4 wheel drive and small size, meant that it was ideally suited to linemen required to maintain existing field phone trunks and lay short distances of cable. The Jeep could get to places that previously required manhandling of cable reels utilizing the RL-31 litter arrangement.

In order to enhance its functionality the existing RL-31 cable reeling assembly was examined and instructions issued to signal corps companies that the RL-31 should be mounted on the rear of 1/4 ton Jeeps.

Research has shown that in many instances no precise instructions were provided as to how the RL-31 should be mounted onto the vehicle. Veterans' accounts, together with period photographs, indicate that a variety of field designed mounting methods were used.



*View showing the rear of the Willys MB with the mounting brackets that support the RL-31. These were field manufactured, and are bolted to the rear cross member. The reel is positioned offset from centre allowing for the spare wheel to be located on board as per the regulation.*





*Rear view of the RL-31 unit mounted on the Jeep. The gas can and spare wheel are mounted inside the vehicle so as not to interfere with cable laying. The spare wheel carrier is shown mounted onto the rear of the RL-31. This is a non-regulation field mod – in practise if the carrier remains attached to the spare wheel as described in the TM it interferes with access to the rear tool box.*

There are many period photos that show the RL-31 installed onto the back of Jeeps at 45 degrees from the body. Thus the entire assembly was installed outside the tub allowing for greater load carrying ability.

The main problem with using the Jeep for laying field phone cable was that the rear-mounted spare wheel and gas can would snag the cable from the rear, whilst driving along at speed. This meant that, as essential items, the spare wheel and gas can had to be carried onboard.

Period photographs appear to show MBs with soft tops fitted and apparently no spare wheel. This is because the spare was often inside the vehicle and thus invisible to the camera. Veterans' accounts say that in some cases the spare wheel and carrier were relocated to the rear passenger external side of the Jeep as seen on postwar CJ Jeeps. This method was hazardous as the spare wheel could accidentally be knocked off the vehicle.

The US Army did produce a technical manual suggesting the official method of installing the RL-31 on the Jeep. It is likely however that this official method was devised after reports of problems due to installation of the spare wheel on the outside of Jeeps.

Manual TM 11-362, (dated 4 Oct 43 and modified in 5 Feb 44) called for the gas can and bracket to be mounted

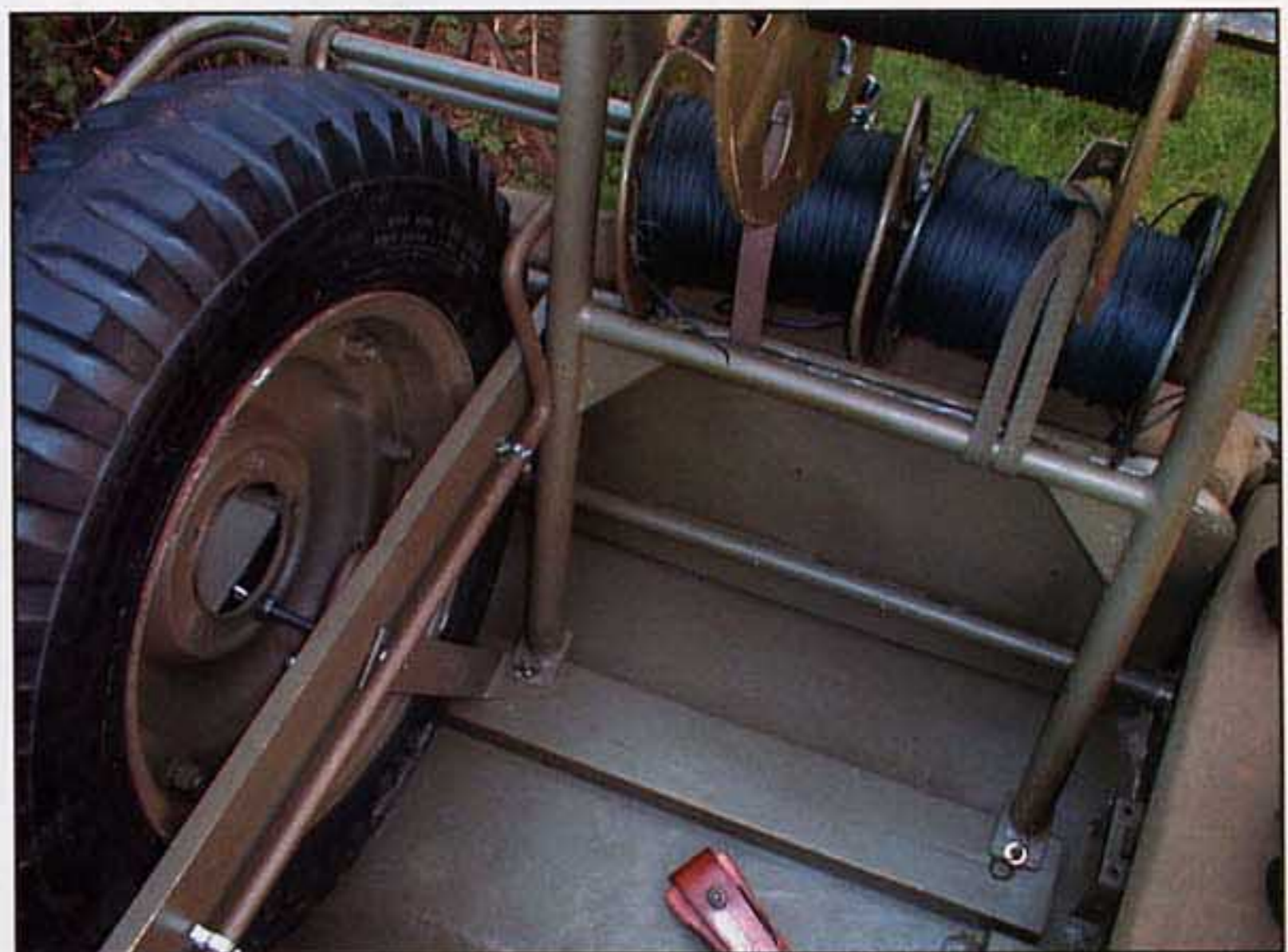
inside the vehicle as described in the previous article. The main drawback of this installation was that it reduced onboard load carrying ability, and rendered the rear seat, although remaining in place and folded, effectively unusable unless the RL-31 was completely removed.

TM 11-362 gave precise instructions for suitable wooden and metal fittings to be manufactured on a locally procured basis; the field mod kit itself was not supplied. Therefore it is very likely that variations to this method of securing the gas can and spare wheel occurred in the field. Some of the photographs show the spare gas can located behind the passenger seat. Suitable hardwood strengthening pieces were cut to the prescribed size and used when bolting the gas can carrier to the wheel arch.

The passenger seat was secured to the rear footrest using a web strap holding the seat in the down position, and securing the spare wheel in place. Additionally a metal bar was used to bolt through the spare wheel to the metal angle bracket fixed to the wooden beam on the cargo bed floor of the Jeep. This arrangement was found to hold the wheel quite securely in place.

The rear seat itself was not removed and remained in its stowed position. Although not mentioned in the TM I have found that the cushion from the rear seat can be easily installed onto the drivers side (left) rear wheel arch. This provided a seat for the linesman in the rear of the vehicle.

When paying out cable it is essential to have an assistant to operate the hand braking mechanism on the RL-31,



*Close up view showing the RL-31 unit mounted inside the Jeep rear deck as described in the tech manual. Note that the rear seat is in the folded position and unusable. The cushion has been removed and placed onto the drivers side rear wheel arch for the lineman to sit on when operating the RL-31 clutch/brake.*



otherwise the cable reel would gain speed and spin uncontrollably thus snagging the line. I have not been able to find any document that recommends a suitable driving speed when installing lines but have found that a reasonable speed can be maintained though practical experimentation.

Most period photographs of cable laying Jeeps in use show them fitted with tire chains, particularly in Europe where there were a lot of muddy conditions. These chains were essential to aid the cable line installation off road.

I have been unable to find much consistency in the way linesman vehicles were marked but, in general, the term *Wire Team* was often used to identify particular vehicles belonging to Commo teams.

### RL-31 Additional Equipment

The RL-31 cable reel assembly was supplied with a winding handle that allowed payed out line to be recovered. This was removable with a folding type locking handgrip.

Also supplied was a removable brake mechanism, previously mentioned, which would be operated by the lineman seated on the rear drivers side (left) wheel arch. The brake was a simple hand operated system that prevented the cable reel from spinning too fast whilst paying out cable.

The interesting point about the brake is that it appears to be capable of remote operation by using a piece of cord or rope tied to the handle. This same brake was supplied with the RL-35 cable-laying trailer described later and would probably have needed the cord or rope also in that application.



*RL-35 cable laying cart shown here towed behind the Jeep. The removable T piece draw bar can be seen on the rear of the cart located in its stowed position. Also shown are the BD-71 six line field switchboard, BG-164 water proof rubber equipment bag, and pole climber spurs storage bag. The cart is fitted with the reel hand brake mechanism similar to the RL-31. The carts reel brake has a hole in the handle allowing the lineman to operate the brake remotely from inside the vehicle by use of a separate lanyard cord. There are no road brakes or lights fitted to the RL-35 trailer.*

### Surviving RL-31

Most of the surviving RL-31 reelers that I have encountered seem to have been used until quite recently. Indeed the RL-35 and RL-31 pictured on my Willys were obtained from the Dutch Marines who were using this surplus US built equipment until quite recent years.

### RL-35 Cable Trailer

The RL-35 pictured is a combined handcart/cable reeler. It was manufactured by Johnstons Lawn Mower Co., Philadelphia in 1944 and again was used up until quite recently by the Dutch Marines.

Speaking with veterans it seems that the cable cart was not often encountered. Photographs of a similar cart being used in North Africa showed it towed behind a Jeep, albeit a flat bed version that has been field modified.

The RL-35 was in essence a modified two-man para handcart similar to the ammo cart used by airborne



*Close up detail of the RL-35 cable cart. The hand reel spindle can be seen fitted to the front of the cart in its stored position. The spare winding handle is located under the reels on the cart. Laying beside the cart are the EE-8A field phone and DR-8 cable drum.*



troops. The interesting features of the trailer are its removable draw bar 'T' piece handle. The handle fits across the eye loop at the end of the draw bar. When not in use there is a storage facility at the rear of the cart for holding the 'T' bar.

With no bar in place the eye ring can be used to tow the trailer behind a vehicle. The interesting thing is that the ring itself is of much smaller diameter than the standard WW II tow hook so, although the trailer does fit onto a Jeep hook, it rattles severely when towed. It would be interesting to establish whether veterans recall this?

Provision is also made on the trailer for the use of manhandling load harness ropes connected to loops on the front of the RL-35 cart. Anyone that has tried to pick up three fully loaded DR-4 reels will realize that they are extremely heavy thus explaining the need for load harnesses. I have been unable to determine the exact harness issued for use with the RL-35, but similar harnesses were used when manhandling artillery pieces and also snow sleds.

The RL-35 is fitted with the same braking mechanism (for slowing the cable reels) as the RL-31. The cart itself has no suspension or brakes and rattles and bounces severely when towed on the highway by a Jeep. Practical tests have shown that on a very smooth road a speed of 35 m.p.h. is obtainable, but in general I would imagine that the cart was more often than not transported in a larger vehicle when not in use, however this is pure speculation based on personal experience.

At the front of the RL-35 was stowed another bar similar to the 'T' draw bar handle. It could be removed and used as a simple axle by two men to pay out a single reel of telephone cable.

### **BD-71 and BD-72**

The pictures I have provided show the RL-31 and RL-35 units together with a variety of other associated equipment that would have been carried by such wire-laying team commo Jeeps.

Firstly the BD-71 and BD-72, telephone switchboard exchange (BD-71 is pictured). These are manually operated six and 12 line exchanges for field use. They are quite heavy, 45 and 75 pounds respectively, and would have been used at communication centers to connect to EE-8 instruments. These would likely be the type of exchanges to which the cable runs would be connected in the field.



*BD-71 six line field exchange (switchboard) pictured with lineman pole climbing belts and spurs (leg irons) The RL-35 cable trailers tire tread pattern detail can be seen here.*

### **EE-8**

This is the leather-cased, later canvas, field telephone, powered by dry cell batteries and used a hand turned generator initiate a signal. An EE-8 is shown beside the RL-35 cart.

### **Pole Climbers**

Most cable laid by Jeep would have been lain directly on the ground along tracks and roadsides. However it was also necessary to maintain cables installed on telegraph poles. For this the linesman would almost certainly carry signal corps climbers (leg irons) and a pole-climbing belt. These were direct copies of those used at the time by power companies etc. stateside, however examples in my collection are marked with the signal corps numbers. One of the more common manufacturers was Buckingham of New York.

### **TS-10 and DR-8**

The DR-8 is the small cable reel, two of which are pictured carried on the rear of the Jeep. These were use by infantry





*RL-31 unit mounted on the Jeep. The hand clutch/brake mechanism can be clearly seen and is used for slowing the drum when paying out cable. Also shown on the rear seat are the BC-611 Handie Talkie radio and TS-10 sound powered handset which would be used when testing a new cable installation. The web strap holding down the passenger seat can be seen fitted as per the tech manual.*

sections when advancing to provide secure wire communications. The DR-8 could be carried on a chest-mounted reel assembly CE-11 worn around the waist and neck and could carry 1/4 mile of W-130 cable. W-130 was the smallest size cable used in WW II and was also called *assault wire*.

Rather than carry the heavy EE-8 field phone the infantryman would normally carry the TS-10 sound-powered handset. This was simply a handset, which you spoke into. There was no provision made for ringing so the end user would need to be on the line permanently. Linesmen also used the TS-10 handset for testing lines when they were installing new cable runs.

### DR-4 and DR-5

These are shown mounted on the RL-31 dispenser. They are the larger cable reels and carry various types of cable. Interestingly the photographs show a DR-4 reel mounted on the RL-31 unit on the Jeep. Notice that the DR-4 reel has holes in its sides. This reel was located in 1999 in Normandy, France and was restored for use on my Willys MB. Most wartime pictures I have seen show that the cable drums were of this design.

Also pictured is a larger narrower reel. I am uncertain whether this design was indeed wartime or post war. Wartime pictures seem to show narrow cable reels in use but they generally have round holes in the sides rather than the smooth metal sides.

### BG-164

The use of electrical telephone communications was very widespread during WW II, together with radio equipment. At the time the field cable line was considered more reliable and secure than radio communications.

During the Normandy campaign the setting up of communications between the assault companies was seen as an important task that needed to be achieved as soon as possible. Consequently, special teams of communication assault troops were landed with the second wave assault troops; these men formed the JASCO (Joint Assault Signal Companies). These teams were responsible for laying communication lines on the beachhead.

The Signal Corps appreciated that the specialized electrical equipment taken ashore with the assault troops needed to be protected from water and a whole series of specialized rubber bags were produced solely for this purpose. The photos I have included show the BG-164 rubber bag, which was used to carry EE-8 phones and SCR-536 handie talkies and smaller equipment ashore.

The last item of interest in the photographs is the uniform itself. Linesmen were in effect rear echelon personnel. They were issued with the all-in-one HBT (Herringbone Twill) coveralls to wear over the wool service uniform. Often wire teams would be seen wearing the HBT Daisy May hats and leather working gloves.



*The linesman.*



Willys MB fitted with RL-31 cable reel unit. The RL-35 cable laying cart is pictured to the right.



Linesmen would often be armed only with a sidearm for personal protection or more commonly the M1 carbine. This would be carried in the standard Jeep rifle carrier attached to the windshield of the vehicle.

The vehicle pictured is my Willys MB. It was in British Army service from 1943 until 1953. It has been restored to present condition by Ian Griffiths and myself over the past nine months and now represents a typical WW II linesman's cable-laying vehicle.

The lineman's prime weapon was his technical knowledge and skill with telephone wire installation and maintenance. Aided by his set of wire cutters and his TL-29 pocketknife he fought WW II and fulfilled an extremely valuable role.

I apologize for any inaccuracies that may appear in this article and would welcome information from veterans who may have used this interesting communications equipment during WW II. I can be contacted at:

*Reconstructed pictures (left and right show Howard Aran (vehicle owner/author). These pictures were taken in Normandy, France, behind Omaha Beach. They show what a WW II lineman may have looked like. Note the pole climbing spurs, EE-8A field phone shown carried over the shoulder and signal corps lineman tool pouch worn on the M36 pistol belt.*

*Cables would either have been run directly along the roadside or in this case for more permanent installation the existing poles may have been utilized. On the beachhead lineman teams were continuously in demand to repair/maintain lines that had been broken by vehicle movement.*



The linesman.

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