

# I'm having a problem with the brake on my tractor.

A quick look at the history of the braking systems reveals some interesting innovations. In 1965, neither the 130 or 180 Case tractors came with any sort of brake on them. There was no parking brake and no "operating brake" like we are familiar with in our automobiles. The Operator was expected to use the travel lever to stop the tractor. Interestingly enough, the very first Colts built in 1963 offered an OPTIONAL drum brake but this was dropped in 1964.

In 1966, a "hydraulic brake" was developed for the Case 150 and 190 as well as the 2310, 2510 and 2712 Colt models. This "hydraulic brake" was actually a foot operated control valve that was bolted over top of the drive motor ports. If you stepped on the brake pedal, the valve began to close off both ports of the hydraulic motor, thus preventing oil from exiting or entering the motor. When the pedal was fully depressed, the valve closed 100 percent, thus locking up the drive motor 100 percent. The hydraulically locked drive motor prevented the gears in the trans-axle from rotating and likewise the rear wheels were prevented from rotating as well.

The major downfall to this method was that the brake worked only when the trans-axle was

engaged in either high or low range. If the operator decided to shift out of high range and go to low range on the crest of a hill, he or she better hope that the tractor did not begin to roll while the trans-axle was momentarily in neutral. If that happened, the hydraulic brake would have no effect on stopping the tractor because it was now mechanically disconnected from the trans-axle due to the shift lever being in neutral.

This hydraulic brake continued to be used on the 1967 155 and 195 models along with the early 1968 155 and 195's. By the time 1968 arrived, a new trans-axle began to appear on the 155 and 195's that sported mechanically operated disc brake assemblies. These were mounted on the trans-axle housing, just inboard of the rear wheels. This may well

have been the best braking system ever offered on a Case GT. Had they continued with this, every forum today would be talking about converting those dual discs to operating with two pedals instead of one. This would have allowed the operator to use one brake or the other so that he could make a spinning wheel stop, thus transferring power to the non-spinning wheel.

That would have allowed owners to get unstuck from mud, snow or ice. In 1969, Case redesigned the trans-axle once again and this time they engineered an external contracting band brake or drum brake. Take your pick. Both descriptions apply. When you step on the brake pedal, mechanical linkage cause a steel band with brake lining glued to it, to squeeze against the outside of a smooth drum.

Make no mistake, this drum brake was never intended to be an "operating brake" such as we use in motor vehicles to bring them to a stop. Instead, the drum brake is little more than a "Parking Brake", meant to keep the tractor from rolling away when the Operator leaves the seat. If you consult the Operator's Manual, it emphasizes the use of the Travel Lever as the primary braking system. The only time it mentions depressing the mechanical brake is when you are descending a steep grade. But even then, the Operator is instructed to keep the engine running at full throttle while pulling the Travel Lever back to the "RETARD" area shown on the dash decal.

The Operator is also told that stepping on the brake pedal

causes the Travel Lever to immediately return to the Neutral position, thanks to a spring that links the two together. In order to use the brake and the RETARD section of the Travel Lever, the Operator is required to keep a firm grip on the Travel Lever at all times.

There is a toothed bar protruding through the lower left side of the dash tower. You step on the brake hard and then push the toothed bar downward while slowly releasing the brake pedal. The toothed bar catches on the dash tower and keeps the brake depressed. That is how the parking-brake function works.

Moving now to the drum brake itself.

If you examine your drum brake mechanism, you will note that there is the ability to adjust the brake. All too often, the adjustment is seized due to rust and old paint. The complete brake band should be removed to allow the threads to be carefully cleaned up and then coated with an anti-seize compound prior to re-assembly. It takes a bit of playing around with the adjustments but you can improve the grip of the band on the drum this way.

It is not unusual for water to get in between the lining and the band to form rust that eventually dislodges the lining from the steel band. If the lining is still in good shape, then either media blast the steel band to bare metal or use a powered wire wheel (Safety goggle time) to clean it up. The

use a rust converter to deal with any residual rust not removed by the wire wheel process.

Use a hand-held wire brush or some coarse sandpaper to clean up the back of the brake lining. Coat the back of the lining and the inner brake band with any decent quality contact cement and let them dry until they are no longer tacky to the touch. Then carefully align the two items and press together. Install the band back on the tractor's brake drum and clamp the ends together tightly. This will apply solid pressure against every part of the brake lining to bring it firmly in contact with the band.

Remove the clamp after 15 minutes, remove the repaired brake band, mask off the lining



and then paint the steel portion of the band. Allow the paint to dry thoroughly and then re-install the rest of the refurbished and repainted brake parts onto the tractor. If you consult your Operator's Manual, there are instructions on how to adjust the brake. It is essential that you have the correct Op Manual because over the years, the design of the drum brakes changed.

The only reason to seek out a new band is if your steel band is broken or otherwise damaged beyond repair. If you intend to buy a used band from someone, then get the serial number of the tractor that band was removed from so you can look up brake band part numbers for both tractors and compare. This can be done right here at his forum

by consulting the tractor parts manuals in our TECH SECTION.

New brake bands, complete with the lining attached are available from an Ingersoll dealer but they are currently in the seventy-dollar range. Eastman/Ingersoll no longer sells just the brake lining material.

You can purchase enough lining material to reline two brake bands at <http://www.mcmaster.com> and have it delivered by mail for less than ten dollars.

For those who are determined to have a brake that is capable of locking up the rear wheels no matter what, then check out the FAQ that discusses the hydraulic disc brake conversion.

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