

What the heck is an INDEPENDENT BRAKE?

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In the last issue we examined the automatic brake, this time we turn to the independent brake.

A simplified version of the independent brake on a multiple unit diesel locomotive consist is shown in applied and released position. The "independent" brake control is the brake control for locomotive units only. Note that the disadvantage of having all air furnished by the lead locomotive is overcome by the use of air operated relay valves so that each unit supplies air for the actual application from its own main reservoirs.

The "reference pipe" between units is necessary for this brake and a separation of the pipe would cause loss of independent brake on units behind. Separation between units rarely occurs and if it did, the units behind the separation would still have braking ability due to the automatic brake portion of the locomotive unit brake system.

In addition to the brake pipe, there are other air

pipes on locomotives that the engineman should be familiar with. These pipes are used to control locomotive brakes when locomotive units are coupled in multiple, forming a locomotive consist. These pipes run the length of the unit with a cut-out cock, a hose and gladhand on each end. These pipes are smaller than the brake pipe and are usually identified by badge plates at the hose connections at the ends of the unit. In order to have proper control of the consist, these pipes must be connected by the hoses and the cut-out cocks open between units. Main reservoir equalizing is usually a 1" pipe that serves, as the name indicates, to equalize main reservoir pressure between units. This is done to aid in synchronizing compressors and also to furnish air to a unit with an inoperative compressor. Another smaller pipe serves as a "reference" air pressure pipe to control the brake cylinder pressure on the trailing units to correspond with the brake cylinder pressure on the lead unit. This pipe is used with the "independent" brake control, which is the brake control for locomotive units only. This "reference" pipe is identified by two different names, being called *brake cylinder equalizing pipe* on No. 26 equipment, and *independent application and release pipe* on older No. 24 equipment. Although these pipes are identified differently on the locomotive, they should be coupled together between units of a consist having mixed brake equipment.

Also running through and between units is another small pipe identified as "actuating pipe." This pipe is used to transmit air from the lead unit independent control to release all locomotive unit brakes without releasing train brakes, or in other words, for independent release of an automatic application.

Another feature of the braking system is the "Independent Release". Using this feature the engineer can hold off or release the automatic application on locomotive units only while leaving train brakes applied. This is also known as "bailing off" the locomotive brakes.

