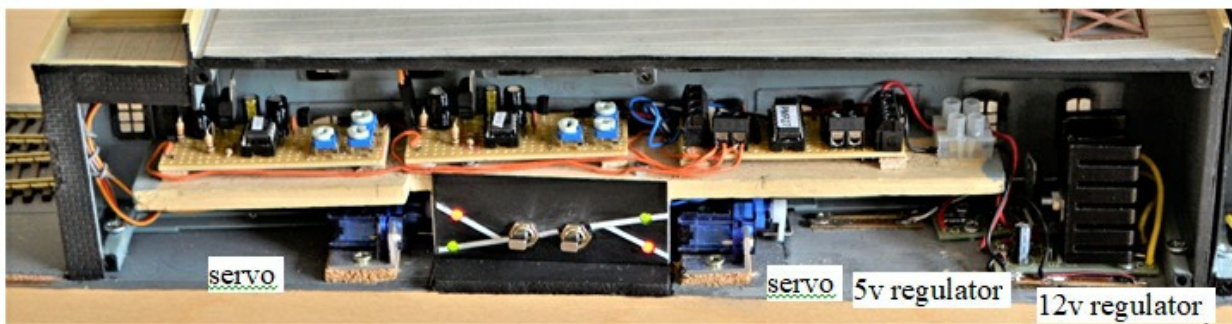


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## Red River Valley Railroad Local Turnout Selection

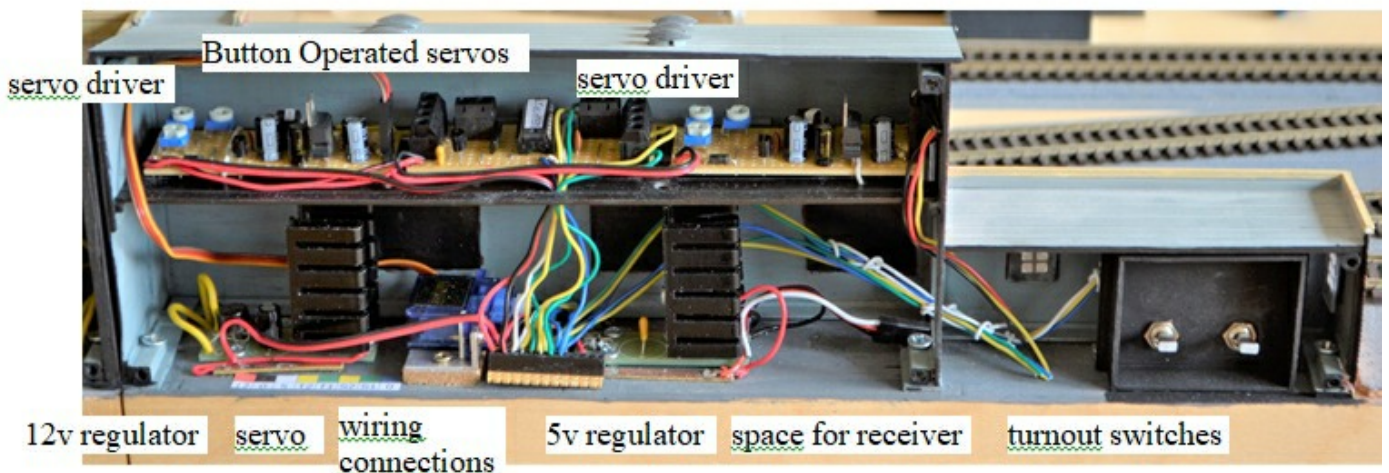
The Red River Valley Railroad (a shortline has to have a long name) is a set of four modules built to NMRA BR Freemo HO standards that can also be run as a stand alone layout. The originally planned stand alone operation was for battery on board radio control, so the only essential electrical requirement was a 12v/5v supply derived from 16vac connected to the accessory buses to power the turnout servos, radio receivers and any other accessories. However, like some train journeys, the destination is not always that envisaged when setting out and, if it had been, the route may well have



been different, although possibly less adventurous.

At the heart of the Red River Valley Railroad is the locomotive works and storage shed. At the heart of the works is a Peco code 83 double slip turnout operated by a pair of SG90 servo motors mounted in home made aluminium angle brackets. And at the heart of this is a description of the turnout operation.

Following a difficulty in obtaining supplies of radio receivers, local control of the turnouts was re-thought, leading to what should be improved operation when in communal use. Members of MERG (Model Electronic Railway Group) have access to a range of inexpensive kits and with a 12v supply already on board it was decided to use two Ezyoints servo drivers in conjunction with a Button Operated servo kit. The space allocated to the controls is extremely limited, was to be covered by a building



and the servos were already in place. Although the kits are quite small (65mm x 25mm), it proved difficult to fit them in. The solution was a stripwood off-cut mounted above the servo motors as a mezzanine in the proposed building.

The Button Operated servo kit is quite versatile and, given the unreliability of some push buttons, it was decided to use passing contact switches. It can also be set for single or double button use, ie a single button changing the turnout alternately or buttons set in each diverging route on a mimic panel. The kit also comes with resistors and circuit diagram for using LEDs as panel light indicators.

Interpreting the setting of a double slip proves difficult for some people, so to make it easier it was decided to use two switches in a small panel with indicator lights to show the set route. It would have been quicker and easier to have used some LEDs to hand and only lit the set route, however, wouldn't it be nice if you could see a red route turn green? An order was placed for some red/green LEDs. Later that night, lying in bed, the thought dawned (a bit early!) - the ordered LEDs had two leads, the circuit was for two LEDs connected anode to cathode, ie three. A search uncovered a simple circuit that would produce the desired result which was tested on the breadboard, but *in situ* there was a problem with reduced intensity of the green LEDs and it was back to playing with resistors on the breadboard.

The location of the panel was constrained by the limited space, the need for easy access and wish to keep the switches inboard to prevent damage. It was decided to use a small length of aluminium angle (from that used for the servo mounts) suspended from the piece of stripwood drilled out for the switches, LEDs and mounting holes and set back from the baseboard edge. To keep the wiring neat it was decided to use a piece of stripboard with the appropriate holes elongated to fit over the poles of the switches. Thus all the servo electronics are mounted on one easily removable piece of wood that is only connected to the 12v supply and servo sockets. This may change to include further connections to duplicate operating arrangements on the opposite side of the baseboard, because the modules could be used either way round, and to a radio receiver if one can be sourced.

The adjoining baseboard also has two turnouts and a similar arrangement. One is the connection to the works from the main line and the other for the two shed roads, but in place of a panel their status will be indicated by colour light positional approach signals fabricated in the railroad's own workshops.

