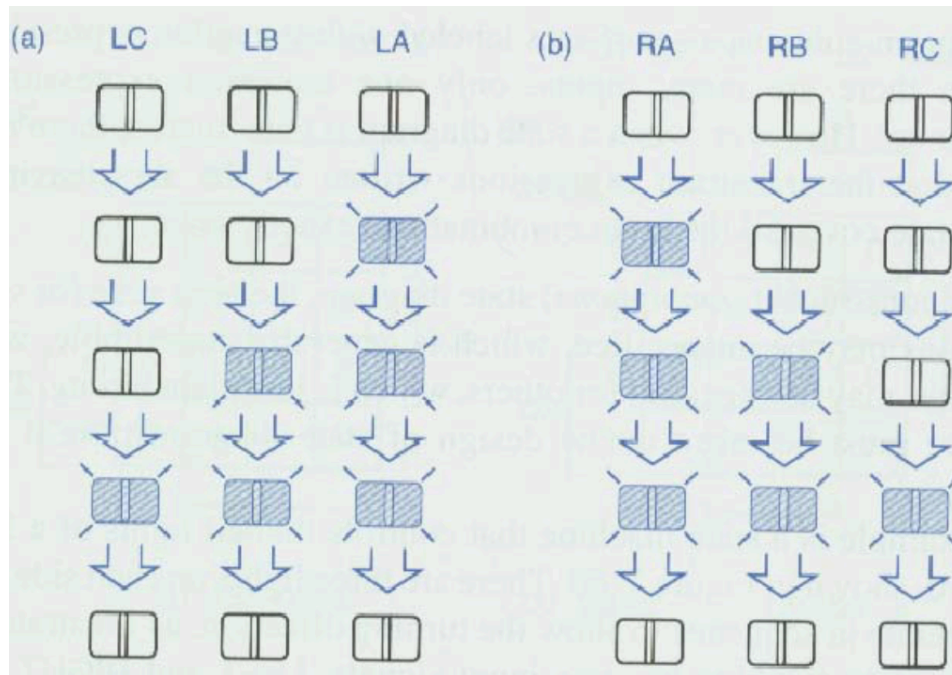


Design



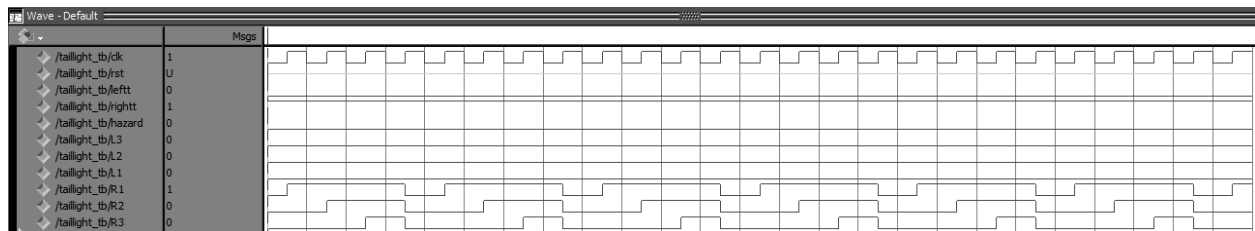
Taillight Sequences for a 1965 Ford Thunderbird

- Inputs
 - SW2 (left turn signal)
 - SW1 (right turn signal)
 - SW0 (hazards)
 - KEY3 (reset)
- Outputs
 - LEDG7 (LC)
 - LEDG6 (LB)
 - LEDG5 (LA)
 - LEDG2 (RA)
 - LEDG1 (RB)
 - LEDG0 (RC)
- Signal Priority
 - hazards > left > right
- Example Behavior
 - If SW2 and SW1 are both set to logic 1, LEDG5-LEDG7 blink in sequence because the left turn signal has higher priority than the right turn signal

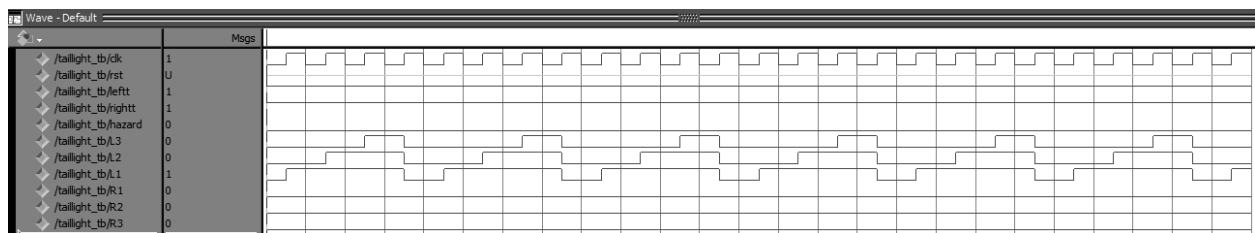
TCL Script

```
set_location_assignment PIN_Y2 -to clk
set_location_assignment PIN_R24 -to rst
set_location_assignment PIN_AC27 -to leftt
set_location_assignment PIN_AC28 -to rightt
set_location_assignment PIN_AB28 -to hazard
set_location_assignment PIN_G21 -to L3
set_location_assignment PIN_G22 -to L2
set_location_assignment PIN_G20 -to L1
set_location_assignment PIN_E25 -to R1
set_location_assignment PIN_E22 -to R2
set_location_assignment PIN_E21 -to R3
```

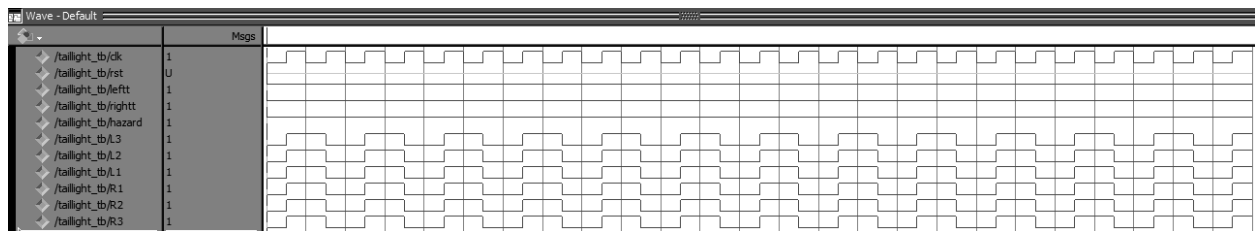
ModelSim Waveforms



Right Turn Signal



Left Turn Signal



Hazards

RTL Viewer Schematic

