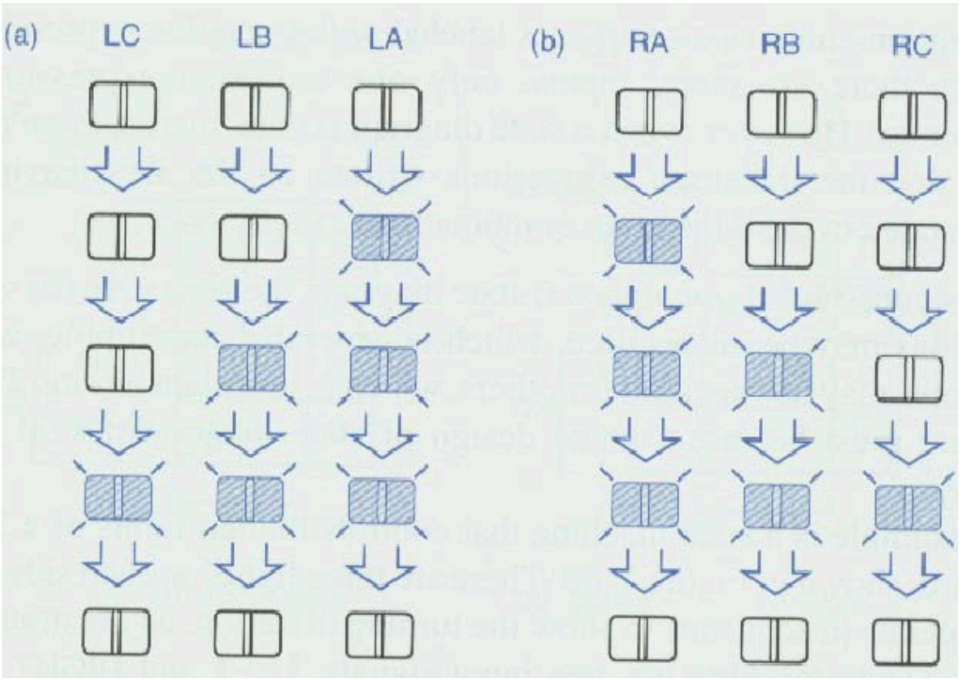
Design



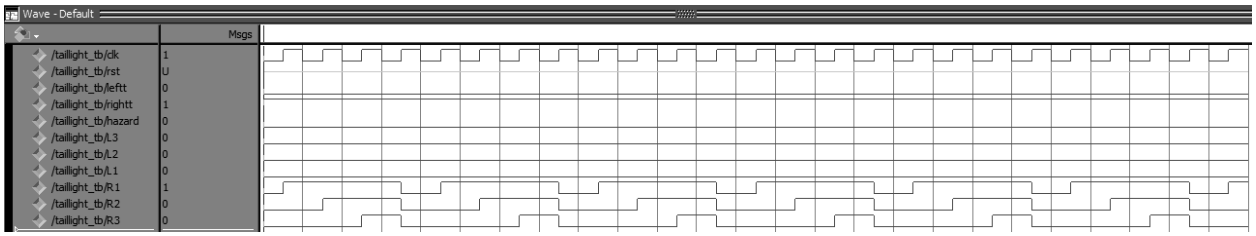
Taillight Sequences for a 1965 Ford Thunderbird

- 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

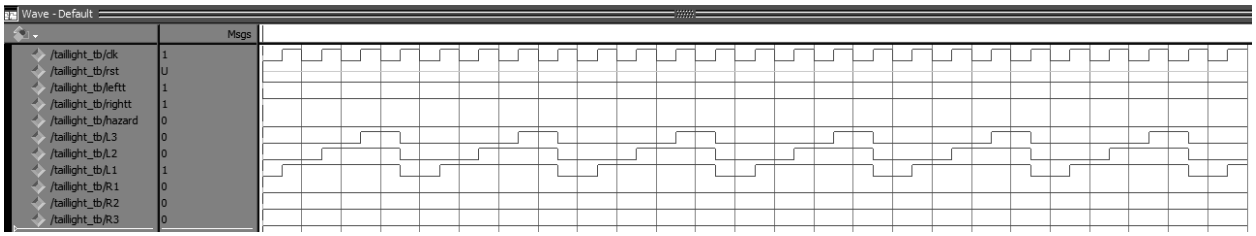
TCL Script

```
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
```

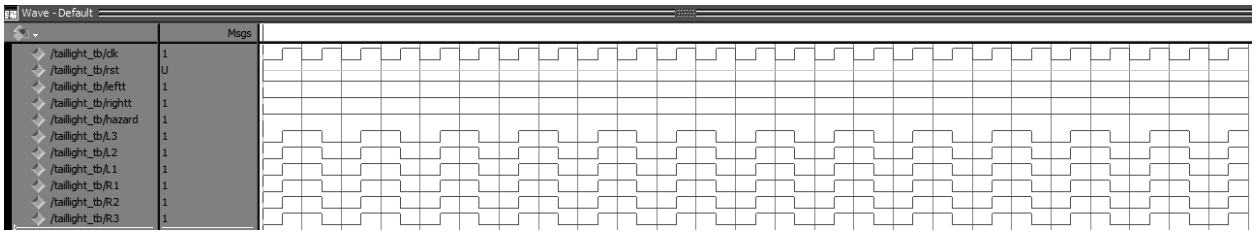
ModelSim Waveforms



Right Turn Signal



Left Turn Signal



Hazards

RTL Viewer Schematic