

Everything you wanted to know about the 67 Cougar Sequential Taillights

“Understanding how your cat’s lights flash in the blink of an eye”

Coach Jack
Coach.jack@att.net

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Introduction

Perusing the Cougar forums, there are a lot of questions and a variety of fixes for the sequential taillights for our beloved Cougars! Even though there is a solid state replacement for the sequential taillights, this only replaces the Sequential Motor, the sequential turn signal relays (Relays K9 and K8), the Emergency relay (K10) and for Cougars built prior to Jan 03 1967, the stop lamp relay (K11) . The circuitry is still dependent on 3 other relays (Turn Signal Relay K7, Turn Signal Indicator Relay K5 and the Emergency Warning Relay K6) as well as the turn signal switch, the emergency hazard switch, a couple of fuses and at least 1 circuit breaker and yes of course the bulbs

Below are the references that I used when putting together these notes. I recommend starting with Steve Citrone's "Sequential Signals of the 67/68 Cougar" as he provides comprehensive detail of the system. Next, download the "Sequential Turn Signal And Emergency Flasher Systems" as it contains essential information, working diagrams, wiring diagrams and a troubleshooting flowchart. Without the working diagrams, I would have been totally lost! Bookmark Vic Yarnberry's "Sequential Turn Signal Troubleshooting Guide" as you will be referring to this extensively. And last but not least search the Mercury Cougar forum and the Classic Cougar forum.

I expanded upon devildogs format from his posts on the classic cougar forum as he identified the relay, its function, location and indications of failure. I added notes, wiring and testing procedures for both off and on the car.

For the Turn Signal Switch testing, I expanded upon Vic Yarnberry's page for troubleshooting the Turn Signal Switch.

By the way, I have a late build 1967 Standard Cougar with all of the original sequential turn signal circuitry. I have not installed nor tested Vic Yarnberry's solid state sequential system but rest assured Vic has done his homework and other owners I have talked with and read via forums are very happy with his component. If you are a real die hard, West Coast Classic Cougars has used tested and verified relays for your Cougar.

I am not nor am I affiliated or associated with any companies discussed in this guide. I am a gear head as just like the rest of you (why else are you reading this). I hope this information helps you diagnose and troubleshoot your taillights!

Coach Jack

coach.jack@att.net

References

1. 1967 Cougar Fairlane Falcon Mercury-Intermediate Mustang Shop Manual, Ford Service Publications, March 1967, yes I have a printed version 1st edition. This manual is available in reprint from many Cougar and Mustang vendors.
2. Mercury Cougar, Sequential Turn Signal And Emergency Flasher Systems, downloaded from West Coast Classic Cougars web site <http://www.westcoastclassiccougars.com> or <http://static.cougarpartscatalog.com/19mecosetusi.html?attribs=75>
3. Sequential Turn Signal Troubleshooting Guide, by Vic Yarnberry at Cougar's Unlimited http://www.thuntek.net/cougars_unlimited/default.htm#Sequential_Trouble_shoot
4. Sequential Signals of the 67/68 Cougar, Steve Citrone, downloadable from <http://www.ebookweb.org/pdf/718840969>
5. Classic Cougar Community Forum, <http://classiccougarcommunity.com/forum/viewtopic.php?f=3&t=2518>
6. <http://classiccougarcommunity.com/forum/viewtopic.php?f=3&t=2518&p=32664&hilit=HZSW#p32664>, see devildog's information in this post
7. Mercury Cougar Forum, <http://www.mercurycougar.net/forums/forum.php>
8. <http://www.mercurycougar.net/forums/showthread.php?60594-Help.-Brake-lights-are-melting-turn-signal-switch.&highlight=turn+signal+switch> , see Buddy 97's post #12

Basic Working Detail

The Cougar taillights operate through a variety of relays, an electric motor and switches. Oddly enough there are five parallel circuits involved to synchronize the “dance” between the taillights, front turn signal lights, brake lights and dash light indicators.

The five parallel circuits are summed up as:

1. Emergency Relay circuit
2. Dash indicator lamp circuit
3. Sequential Motor Circuit (affects inner and outer taillights)
4. Sequential Relay circuit (affects left and right taillights)
5. Brake light circuit

Circuit Relationships

The table below summarizes how each circuit interacts with the other circuits (where applicable). The top row indicates the circuit and the values in the cells vertically (Direct or Indirect) indicate how it “affects” the circuit along the far left column. Reading the table across is the “affected by” relationship. For example, the Dash indicator circuit affects the SQM directly (reading down) however the Dash circuit is affected by the Emergency circuit (Directly) and by the SQM and SEQ circuits (Indirectly) .

I know this sounds rather confusing as there is a Direct AND Indirect relationship between the Dash circuit and the SQM but as you will see later, the K7 relay powers the SQM and the SQM current draw affects the K7 relay coil.

	Emergency	Dash Ind	SQM	Brake	Sequential
Emergency	X				
Dash Ind	Direct	X	Indirect		Indirect
SQM		Direct	X		
Sequential	Direct		Direct	Direct	X
Brake				X	

Emergency Relay circuit

When the ignition is in the ON position, there are 2 relays (Emergency Warning Relay K6 and Emergency Relay K10) that are HOT at their coils. K6 affects the dash indicator lights and K10 controls the inner and outer taillights. I know what you’re thinking, the dash indicator lights aren’t on nor are any of the rear taillights when you turn on the ignition.

The K6 circuit is a Normally Closed (N.C.) circuit therefore with power opens the circuit for the indicator lights separating the left and right turn signal indicators.

K10 is a Normally Open (N.O.) relay thus powering this relay Closes (connects) the inner and outer taillight circuits between the Sequential Motor (SQM) and the Sequential Main Turn Signal Relay. Interestingly enough when you turn on the hazard warning switch for the emergency flashers (HZWSW),

these two relays are de-energized, thus closing the contacts in K6 effectively tying the left and right turn signal indicators together and in the K10 relay opens the relay (disconnecting the circuit) for the inner and outer taillights between the SQM and the Sequential Main Turn Signal Relay. The Center taillights are ALWAYS connected between the SQM and the Sequential Main Turn Signal Relay. Note that when the emergency flashers are on, only the inner taillights flash.

Dash indicator lamp circuit

This circuit is controlled from the turn signal switch (TSS) thru the Turn Signal Relay (K7) and the Turn Signal Indicator Relay (K5). This circuit is powered only when the turn signals are activated (for left or right) or when the HZWSW is ON. This circuit is affected by the Emergency Relay K6. (Note K5 is only powered for right turns or HZWSW ON). K7 also provides power for the Sequential Motor Circuit.

Sequential Motor (SQM) Circuit

This circuit provides the magic to make the inner, center and outer taillights sequentially flash via the 3 cams affixed to the motor shaft. This circuit ties into the Sequential Relay Circuit.

This circuit also affects the Dash Indicator Lamp circuit. As the motor cam connects , the inner, center and outer taillamps (note the front turn signal lights are tied to the center taillights), the K7 relay keeps it circuit open but when the cam disconnects all of the taillights, the K7 circuit closes causing the dash indicators to flash. This implies that when the taillights are sequencing ON, the dash lights are OFF and when the taillights sequencing circuit is OFF, the dash lights are ON.

Sequential Relay circuit

This circuit is driven by the SQM circuit and the two Sequential Main Relays from the Turn signal switch. There are two relays one for the Left (K9) and the other for the Right (K8).

Brake Light Circuit

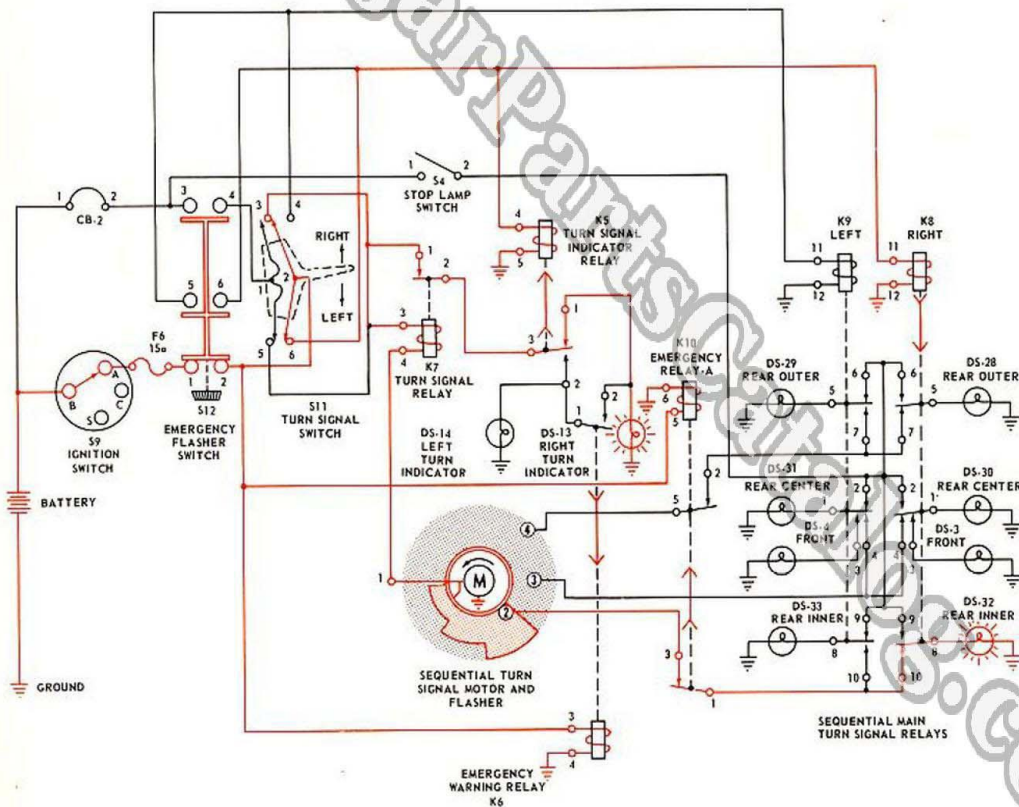
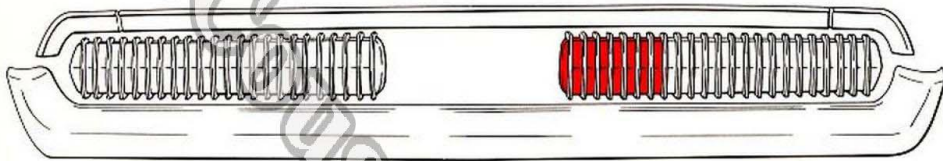
The brake light circuit is a separate circuit, that is until it reaches the sequential relays (K9 and K8).

Circuit Working Diagram

Below is a one of the working diagrams from the “Sequential Turn Signal And Emergency Flasher Systems” that I kept finding myself staring at in disbelief. It provides a good visual of the circuitry involved. As such I find it warranted to include it in this document. The “Sequential Turn Signal And Emergency Flasher Systems” has diagrams for all of the following:

1. Right turn Diagrams (3 diagrams in all)
2. Left Turn diagram (yes it is slightly different than a right turn)
3. Flasher Diagram
4. Stop Lamp diagram (without stop lamp relay)
5. Stop lamp diagram (with stop lamp relay)
6. Left turn diagram with Stop lamps

RIGHT TURN
INNER REAR LAMP "ON"



Recommended troubleshooting sequence

Preliminary Bulb check

I know it sounds too good to be true, but the first thing to check is the ground on all of the taillights and front turn signal lights and the light connections for corrosion. A bad ground can cause the lights to not light or may cause them to be dim. Also, very important is that the battery needs to be fully charged.

Preliminary Fuse and Circuit Breaker check

The taillights are fuse protected underneath the dash by an inline 15 amp fuse located between the ignition switch and the turn signal connector.

The warning light switch contains a circuit breaker CB-2 that is connected from the starting motor relay to the turn signal connector circuit #10. For Cougars built prior to Jan 2 1967, this circuit provides feed power to the K11 Stop lamp relay. For Cougars built after this date, this circuit connects to the brake light switch

For Cougars built prior to Jan 2 1967, there is also a circuit breaker CB-3 that is connected in/near the headlight switch that feeds the brake light switch.

Preliminary Turn signal check

1. Check battery for proper voltage. Note: if insufficient voltage, the relays may not activate
2. Turn on ignition switch and verify power through 15A fuse to HZWSW
3. Verify K6 and K10 are powered
4. Turn signal switch.

Right Turn signal

1. Make sure to do Preliminary Turn signal check above
2. Activate right turn signal
3. K7, K5 and K8 and SQM will now be active.

Left Turn signal

1. Make sure to do Preliminary Turn signal check above
2. Activate left turn signal
3. K7, K9 and SQM will now be active. (Note K5 not used for left signal)

Flasher

1. Check battery for proper voltage. Note: if insufficient voltage, the relays may not activate
2. Check Circuit Breaker CB-2 (According to WCCC, it is a 15A 12V Circuit breaker)
3. Activate flashers from HZWSW. Note, Flasher will provide power to center stalk of turn signal switch
4. K7, K5, K8 and K9 and SQM should all have power. (Note K6 and K10 are NOT powered for the flasher circuits)

Preliminary Brake light circuit check

1. Check battery for proper voltage. Note: if insufficient voltage, the relays may not activate

2. Check Circuit Breaker CB-2
3. Activate brakes
4. Brake lights should be activated (Note if turn signals are on (left or right) Brake lights only activate on opposite side, controlled by K8 and K9 relays) .

K5 Turn Signal Indicator Relay (TSINDR)

Function

Directs Power to the left or right turn signal indicator dash lights.

Location

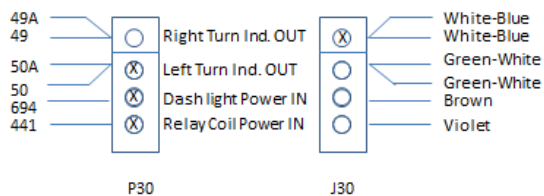
Under dash

Notes

1. Relay is Normally Closed (N.C.) connecting #694 to #50, left turn signal indicator
2. Powered from the Turn Signal Switch (TSSW) with the ignition ON and TSSW in right mode or emergency flashers HZWSW ON
3. This relay is NOT POWERED for a left hand turn
4. This does NOT cause the light to flash, only enables the circuitry. Flashing is caused by the K7 relay (see below)
5. Relay K6 also controls circuitry for tying the left indicator to the right turn signal indicators when HZWSW ON
6. Relay is internally grounded

Wiring

Connector: PJ 30 4 connections with 6 wires



Circuit #	Power (from/to)	Description	Notes
49A	694	Output – to K6 Relay	For right turn or HZWSW ON
49	694	Output – powers right turn indicator light	For right turn or HZWSW ON
50A		Not used in K5 internally	This wire is used to power the left

			dash indicator in emergency flasher mode HZWSW ON (via K6). It sounds convoluted but K5 does not do anything with power applied to #50A).
50	694	Output – powers left turn indicator light	For left turns only
694	K7	Input – Power depends on K7 relay output	Feeds circuits 49 and 50 as appropriate (see above)
441	TSSW	Input – for coil relay	Power fed from turn signal switch in right position or HZWSW ON. Note unpowered for left turn

Indications

Failure of the contacts could cause one or both dash indicator lamps not to illuminate.

Failure of the coil may cause the following problems:

1. Only left indicator dash lamp operates when in emergency flasher mode (also bypasses relay K6)
2. Left front indicator dash lamp operates when the right turn signal is enabled

Testing

Relay off of car

1. Since this relay is normally closed, test for continuity between circuit #694 and #50
2. Place 12V test harness on circuit #441 and ground to can. Test for continuity between #694 and #49

Relay on car

1. Check for 12V at #694
2. With ignition on and left turn signal or cancel mode, check for 12V at #50
3. With ignition on and right turn signal or emergency flashers on , check for 12V at #49

K6 Relay - Emergency Warning Relay (EMWR)

Function

To connect the Left dash light to the Right dash lights together for Emergency Mode operation

Location

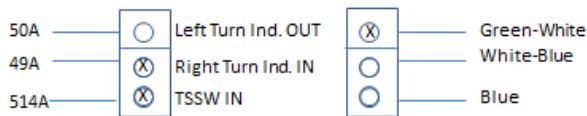
Under dash

Notes

1. K6 Relay (and K10) is powered (on circuit #514A) whenever the ignition is ON and the flashers are OFF.
2. K6 Relay (and K10) is OFF when hazard switch (HZWSW) ON position. Ties #49A to #50A. Even though this switch is NC (without power) between #49A and #50A, #514A is Kinda Bass ackword but it's the way it was designed tying #49A to #50A.
3. Relay grounded internally

Wiring

Connector PJ 39



P39 K6 Relay Connector J39

Circuit #	Power (from/to)	Description	Notes
50A	Left Turn signal Indicator	Output – to K5 J30 connector, tied to Circuit #50 to power left turn indicator	Powered only when HZWSW ON
49A	K5 relay	Input – power provided by K5	Powered only if Right turn or HZWSW ON
514A	TSW	Input – for coil relay	Powered ONLY when HZWSW OFF (HZWSW connect 2)

Indications

This Relay requires active voltage from the HZSW for normal operation. Failure of the relay coil causes both front INDICATOR lamps to light when TSSW is moved left OR right. (No independent mode). Failure of the contacts would have no effect on normal operation, however Emergency mode would flash INDICATOR lamp only on right side . (TSINDR Default)

Testing

Relay off of car

1. Check for continuity (0 ohms) between #49A/#50A
2. Place 12V power on #514 and ground to can , check for a break in continuity (infinite ohms) between #49A and #50A

Relay in car

1. Ignition switch must be ON
2. Turn signal OFF, HZWSW OFF, Check #514 12V, #49A 0V, #50A 0V
3. Right Turn signal ON, HZSW OFF circuit #514 12V, #49A 12 V, #50A 0V
4. Left Turn signal ON, HZSW OFF circuit #514 12V, #49A 0 V, #50A 0 V
5. Turn signals OFF, HZWSW ON, Check #514 0V, #49A 12V and #50A 12V

K7 Turn Signal Relay

Function

Provides Flashing mechanism to the dash indicator lights due to magnetic / bimetal strip cycling. The relay is powered when the left or right turn signal is engaged and also if the HZWSW is enabled. Also, this relay provides power to the Sequential Motor.

Location

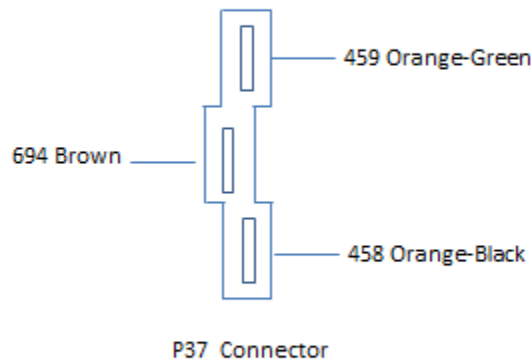
Under Dash

Notes

1. This relay is NOT internally grounded!! DO not replace this relay with one from a 68. Don Rush's posts state that the 1968 relay is internally grounded. You have been warned!!!
2. Powered when the left or right turn signal is engaged or if the HZWSW is enabled
3. Provides power to the Sequential Motor (SQM)

Wiring

Connector: P37



Circuit #	Power (from/to)	Description	Notes
459	458 to SQM	Output – internally tied to 458	Power to SQM
694	K5 Relay	Output – provides switched line voltage to K5 relay	Supplies input power to the dash indicator lights

458	TSS	Input - coil power	Power applied when Turn signals or HZWSW activated
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Indications

Dash indicator lights may not light (694 OPEN) or contacts in relay are corroded.

Dash indicator lights ON but do not flash (694 CLOSED). Coil failing to open and close within internally circuitry. Note, this relies on SQM sequencing AND inner, center and outer taillights as well as front turn signal bulbs are working.

SQM circuitry may not be receiving power (459)

Testing

Relay off of car

1. Check continuity between #458 and #459
2. Since this relay is not internally grounded, I do not know if you can apply power to #458 appropriately. If you can, then test #694 for 12V and #459 for 12V

Relay on Car

(requires ignition on and either turn signal circuit completed or flashers enabled)

1. Check for voltage in #458
2. Check for voltage on 459
3. Check for voltage on #694 (Depending on SEQ Motor cam, voltage should pulsate)

K8 (right) and K9 (left) Relay – Sequential Main Turn Signal relays

Function

Energizes the appropriate left or right contacts for the inner and outer taillights.

Location

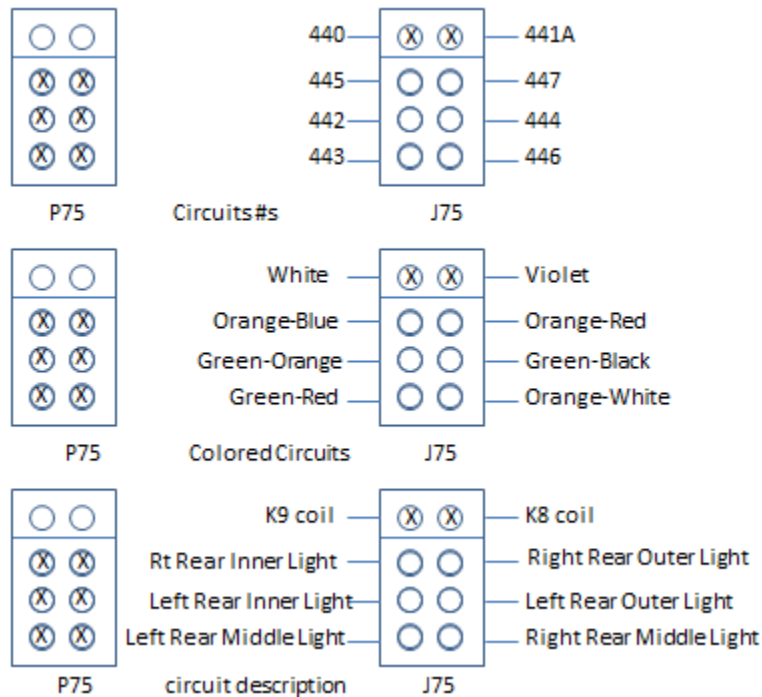
In trunk left side wheel well

Notes

When these relays are not energized, their contacts are positioned enabling the brake light circuits

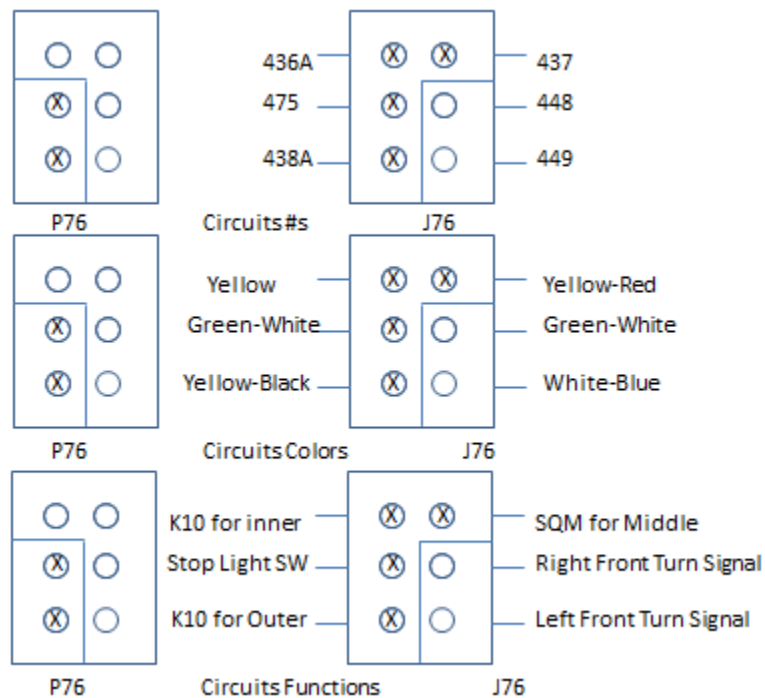
Wiring

The Sequential Main Turn Signal Relays have two connectors, Connector PJ75 and PJ76



Circuit #	Power (from/to)	Description	Notes
440	TSSW	Input – for K9 coil	Powered when TSW Left or HZWSW ON
445	Right Outer	Output	
442	Left Inner	Output	
443	Left Center	Output	
441A	TSSW	Input – for K8 coil	Powered when TSW Right or HZWSW ON
447	Right Outer	Output	
444	Left Outer	Output	
446	Right Center	Output	

Connector PJ76



Circuit #	Power (from/to)	Description	Note
436A	K10 (436A)	Input – power for Inner Taillight	Power from SQM thru K10
475	Stop Light SW (S4)	Input – Brake light power for all taillights	
438A	K10 (438A)	Input – power for Outer Taillights	
437	SQM	Input – power for Center Taillights and Front turn signal lights	
448	DS-3	Output – Front Right Turn Signal	Power provided by 437
449	DS-4	Output – Front Left Turn Signal	Power provided by 437

Indications

1. Bad contacts can cause any light to not illuminate or if corroded to be dim.
2. No left lights when TSW in Left mode
3. Left lights ON when TSW in Right mode
4. No right lights when TSW in Right mode
5. Right lights ON when TSW in Left mode
6. No brakes lights or some brake lights on left
7. No brakes lights or some brake lights on
8. Emergency lights do not light on both sides
9. Emergency lights flashing on only one side

Testing

Relay off car

1. Test Continuity between #475 and all of the output taillight circuits #442,443,444,445,446 and 447 (This checks only the brake light contacts as they are NC)
2. Place 12V on K9 relay #440 and common ground. Check the following for continuity
 - a. #438A to #444
 - b. #437 to #443
 - c. #436A to #442
 - d. #437 to #449 (may go to 448 as the diagrams are contradictory)
3. Place 12V on K8 relay #441A and common ground. Check the following for continuity
 - a. #438A to #447
 - b. #437 to #446
 - c. #436A to #445
 - d. #437 to #448 (may go to 449 as the diagrams are contradictory)

Relay on Car

1. Requires all of the other relays to be in working order. If SQM Motor is suspect, disconnect SQM at P77, turn on turn signal or flashers and put 12V wiretap onto #436, #437 and #438 and check for voltage at the lights (see above testing with relay off of car)

K10 relay - Emergency relay A

Function

Provides power for the inner and outer taillights.

Notes

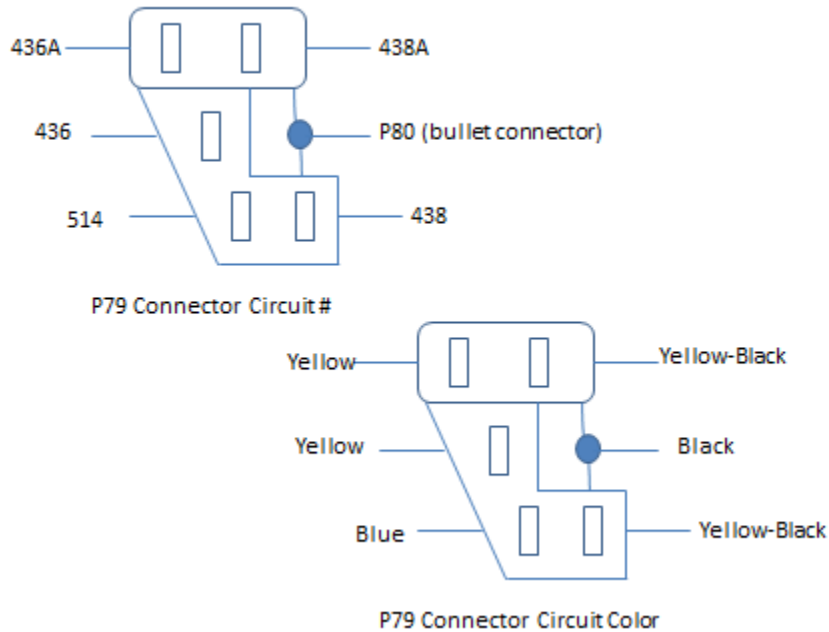
1. Circuit energized when the ignition is in the ON position.
2. Circuit de-energized when the Flasher circuit is enabled!! (See K6)
3. Disconnects inner and outer taillights when HZWSW ON
4. NO switch when no power applied
5. Independent of a left/right turn signal operation as K9 and K8 handle left/right
6. Grounded at P80

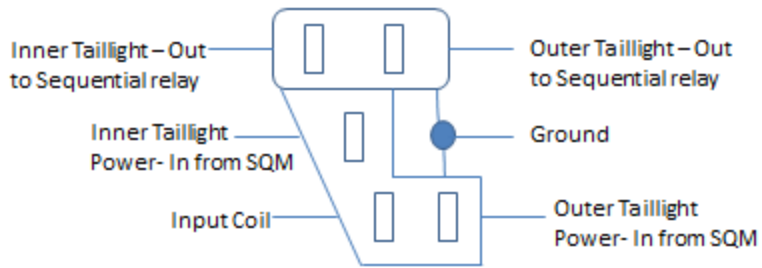
Location

In trunk wheelwell

Wiring

Connector: P79 with P80 attached





P79 Circuit Description

Circuit#	Power(from/to)	Description	Note
436A	Sequential relay	Output – power for inner taillights	
436	SQM	Input – power for inner taillights	
514	HZWSW	Input – coil from HZWSW	Power ON when HZWSW OFF Power OFF when HZWSW ON
438A	Sequential Relay	Output – power for outer taillights	
P80	Ground		
438	SQM	Input – power for outer taillights	

Indications

1. No power to inner taillights
2. No power to outer taillights

Test

Relay off car

1. With no power, check to make sure the following circuit are OPEN (infinite Ohms)
 - a. #436 /#436A
 - b. #438 / #438A
2. Apply 12V power to #514 and ground on P80. Check for continuity for the following:
 - a. #436 /#436A
 - b. #438 / #438A

Relay on car

1. Turn ignition key ON, HZWSW ON, no turn signals
 - a. Check for 0 V on #514
 - b. Check for OPEN circuit for the following
 - i. #436 / #436A
 - ii. #438 / #438A

2. Turn ignition key ON, HZWSW OFF, no turn signals
 - a. Check for 12 V on #514
 - b. Check for continuity for the following
 - i. #436 / #436A
 - ii. #438 / #438A

3. Turn ignition key ON, HZWSW OFF, turn on turn signal (This relay is independent of Left/Right operations)
 - a. Check for 12 V on #514
 - b. Check for continuity for the following
 - i. #436 / #436A
 - ii. #438 / #438A

Turn Signal Switch - TSSW

Function

Isn't this obvious?

Notes

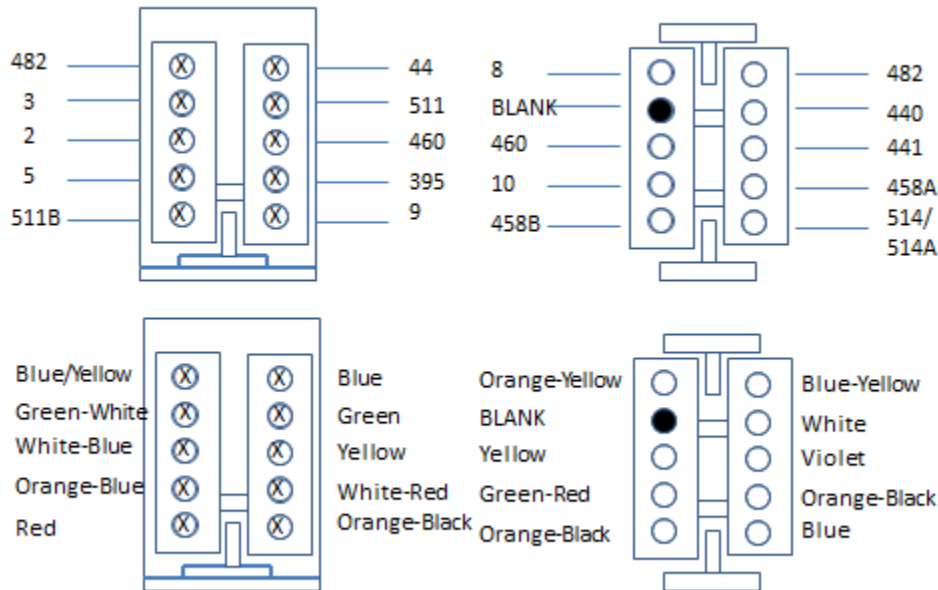
Most of this section is from Vic Yarnberry's site. I would have been totally at a loss without his information.

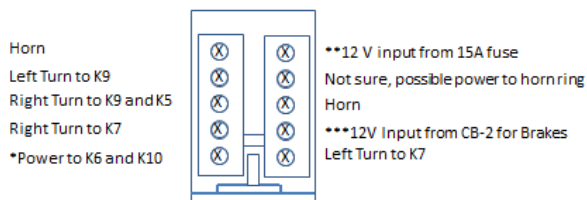
Location

On Steering column

Wiring

Connector PJ 46 underneath steering column





Wire Circuit Block Colors

P Circuit #	Color	J circuit #	Color	Description
482	Blue-Yellow	482	Blue-Yellow	Horn
3	Green-White	440	White	Left Turn to K9
2	White-Blue	441	Violet	Right Turn to K9 and K5
5	Orange-Blue	458A	Orange-Black	Right Turn to K7
511B	Red (according to the seq diagrams)	514/514A	Blue	Power to K6 and K10 relay (when HZWSW OFF)
44	Blue	8	Orange-Yellow	Input 12V from 15A fuse when HZWSW OFF and Ignition Switch ON
511	Green	Blank	No wire on this connect	Not sure, possible power to Horn?
460	Yellow	460	Yellow	Horn
385? Or 395	White-Red	10	Green-Red	Input 12V from CB2 for Brake and when HZWSW ON
9	Green Orange	458B	Orange-Black	Left Turn to K7

Indications

1. Turn signals fail to operate
2. Flasher fail to operate
3. Brake circuit fail to operate

Shorts in the turn signal switch are all too common. Cougar owners also indicate new turn signal switches have problems with the wires being loose. (see Ref 8, Buddy 97)

Testing

The table below originated from Vic Yanberry's site that I updated specifically for the 67 Cougar indicating the connected circuits within the turn signal switch. You can either probe the circuits with a volt meter or disconnect

the harnesses and check for continuity. Note the top row indicates the turn signal lever position and within the cells indicates the HZWSW (ON or OFF)

CENTER POSITION	LEFT TURN	RIGHT TURN
Green, Orange-Blue/OrangeBlack 511, 5/458A to K7 Hot when HZWSWON	Blue, Green-White 44, 9/458B to K7 HZWSW OFF	Blue, Orange-Blue 44, 5/458A to K7 HZWSW OFF
Green, Green-Orange/Orange-Black 511, 9/458B to K7 Hot when HZWSWON	Blue, Green-Orange 44, 3/440 to K9 HZWSW OFF	Blue, White-Blue 44, 2/441 to K5 and 44, 2/441A to K8 HZWSW OFF
Blue, Red 44 , 511B to K6 and K10 , should always be hot when HZWSW OFF	Blue, Red 44 , 511B to K6 and K10 , should always be hot when HZWSW OFF	Blue, Red 44 , 511B to K6 and K10 should always be hot when HZWSW OFF
	Green, Orange-Blue 511, 5/458A to K7 Hot when HZWSWON	Green, Green-Orange 511, 9/458B to K7 Hot when HZWSWON

Sequential Motor (SQM)

Function

Creates sequential timing of 3 rear signal lamps (inner, center and outer) and the front turn signals. The front turn signals flash on and off with the center taillight bulbs.

The SQM circuitry also affects the K7 relay such that as the SQM makes and brakes the taillight circuits, the turn signal relay K7 de-energizes and energizes opposite of the taillights. That is if any or all of the turn lights are on, the dash indicator lights are off and when the dash indicator light is on, the taillights are off.

Recall that the left and right lights are controlled by the K9 and K8 relays.

Location

left wheel well below trunk floor

Notes

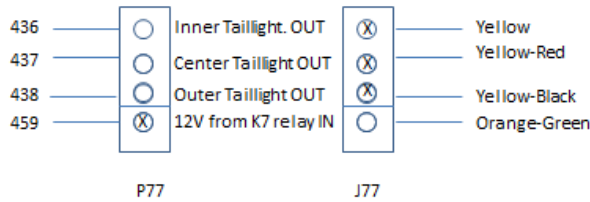
When the Turn Signal Switch is moved to either the L or R position, the 458 A or B signal is powered. These are tied together to become the 458 circuit, so whether L or R, voltage is supplied to the Front Flasher Relay, and the rear Sequential Motor and Lamps.

Output wires from Sequential Turn signal motor and flashers provide the input to the A10 Relay. A10 also has a hot input on circuit #459 Output from A10 then runs to the Sequential Main Turn Signal relay.

When SQM is running, you should be able to hear the motor in the trunk wheelwell, If it is not running, take off the top of the SQM and see if the cam is moving. If the cam does not move, you may want to try and fidget with the motor although it could be fried at this point.

Wiring

Connector PJ77



Circuit#	Power (from/to)	Description	Note
436	SEQ Relay	Output – Inner Taillights	
437	SEQ Relay	Output – Center Taillights	
438	SEQ Relay	Output – Outer Taillights	
459	K7	Input – coil power from K7	This circuit is powered whenever K7 powered for Left/Right turns or HZWSW ON

Indications

1. Taillights do not illuminate
2. One or two taillights sequence but not the third
3. Taillights illuminate but never sequence
4. Dash Indicator Lamps may fail to flash due to current deviation that the K7 relay depends upon.

Testing

SQM testing only applies when 12V applied to motor, No OFF testing

SQM off of car

1. Apply 12V to #459 and ground to motor. Motor and cam should turn
2. Check for 12V continuous voltage on #437
3. Check for 12V cycling voltage on the following
 - a. #436
 - b. #438

SQM on car

1. Ignition ON, turn signal (left or right) or HZWSW ON
2. Check for 12V continuous voltage on #459 (from K7 relay) and #437
3. Check for 12V cycling voltage on the following
 - a. #436

b. #438

Conclusion

If you made it this far, and you understand at least part of what I and others have written regarding the Cougars sequential taillights, then you should pat yourself on the back.

I did not go into the contacts within each relay, but this is easy to cross reference within the “Mercury Cougar, Sequential Turn Signal And Emergency Flasher Systems”

This document is a living document so if you find any errors please drop me an email @ coach.jack@att.net or you can post on the two mercury cougar forums, my signon for both sites is coachJack.