You know of course, that whatever I tell you is subject to Murphy and his famous law! Also, most of it is just my opinion as I have no real statistics to go on.

Anyhow, from about 89 to 94, AutoPark ran off of the power steering pump. It is basically an all hydraulic type of system and pretty reliable. I think about 90 percent of the stuff built in that period also had a manually applied foot parking brake - - which is a good thing. You can always disable the AutoPark and just use the foot brake. These units are easier to work on in some respects.

Generally, 95 thru 98 versions run off of a separate and dedicated pump/motor and reservoir. I see more problems from that era but almost all of them due to one particular switch that fails. With very little study and a spare, most anyone can fix it in pretty short order. These versions also (mostly) have the manual brake too - - a good thing.

99 thru present - - No more manual brake - - a disadvantage in my opinion. Still the same problems with the switch (we call it the Rotten Green Switch). Not so many problems with the latest ones (2004 and up) but that is maybe just an age/mileage thing.

A big consideration is that all I hear about is the ones with trouble. Very few people email me to say theirs works! Just the nature of things I'm sure. The other thing I don't have a clue to, is how many have been made. Maybe only 1 percent of the AutoParks give trouble - - I really don't know.

THE AUTO PARK STORY…UMPTEENTH REVISION

The following is an attempt to explain the evolution of the AutoPark thru the different versions. Please understand I've only worked on one of them- - A P30 94 Southwind.

All versions are somewhat complicated. My opinion is that the whole thing was an attempt by Chev to make people think they were driving the family car - - stick it in "Park" and walk away - - even tho mechanically, an entirely different thing was happening than what happens in the family car.

Earlier versions used hydraulic pressure from the power steering to make it work. Same pressure was also used for service brake boost (instead of vacuum) - - think they call that "Hydro-Boost" or something like that. I've been told but not confirmed that some of these also had a separate electric hydraulic pump which would come on if the power steering pump failed - - so you still had brakes, power steering, and yes - - AutoPark. Later edit on early version- - We always thought AutoPark appeared on motorhomes OVER 16000 lbs and took the place of the locking pawl in the tranny. It now appears that there are some out there weighing LESS than 16000 lbs, and these have BOTH AutoPark as well as a tranny pawl.

The next generation is similar in that it still had a PARK position on the gear shift lever, and they also had the foot pedal brake like the earlier version. However, this version does not use the power steering pump for hydraulic pressure. It has its own, dedicated pump and fluid reservoir. If you read the email exchange I had with "Phil", he included a good description (he took from his manual), on how that system works - - you'll want to read and digest that carefully - - his rig is a 1997.

Because - -

The next generation has both the PARK position on the gear shift lever, and also a yellow button on the dashboard to activate, or deactivate the parking brake.
There is NO foot actuated parking brake at all. On this system, to release the brake, you must take the shift lever out of park, AND push the button in. To apply the brake, you can either place the shift lever into PARK, OR pull the button out. Haven't figured out why they have done this - - yet. Think this is called the J 71 system.
The earliest units had a valve mechanism hooked directly to the gear shift linkage. This valve controls the hydraulic pressure which is applied or removed from the AutoPark actuator. These valves are known to give trouble - - Very expensive to replace but believe you can buy (online) a rebuild kit for them at a reasonable price or send them in to be rebuilt - - also more reasonable than new price.

Later units do not have this valve, but instead have a microswitch which in turn actuates a solenoid valve - - sorta does the same thing as the earlier, but quite differently configured.

We have pictures of both of these setups - - the valve and the microswitch.

The later generation units, have had lots of trouble with the microswitch assembly on the steering column, that senses the position of the gear shift lever. Malfunction or maladjustment of the switch could either fail to apply the brake, or apply the brake when you didn't want it to. Failure of the hydraulic pressure could prevent you from releasing the brake if it was already on. Lots of reports of having the brake locked on, and no way to release it (from the driver's seat). Very few reports of failure with power steering system which provides hydraulic pressure for AutoPark. Mostly problems with shift lever actuated valve, or just lack of proper adjustment of brake mechanism - - i.e. brake shoes or linkage.

Later versions, which have a separate hydraulic pump for AutoPark, and do NOT use the power steering pump for AutoPark pressure, have had problems with the microswitch on the shift lever, but have also had many failures of the switch assembly on the electric motor for the hydraulic pump. This seems to be the most frequent cause

of failure - - everyone reports that this switch leaks hydraulic fluid when it fails, requiring replacement of the switch, and topping off the reservoir. This is the pump motor switch a.k.a. the Rotten Green Switch.

Latest versions, still with the same separate (from power steering) hydraulic pump, and still the same reports of failure with the switch on the motor. As with earlier versions , any failure of this hydraulic system, can leave you with PARKING BRAKE LOCKED ON. This can be in your driveway, or in the fast lane of the freeway.

Finally, we have recently come across some examples of what *we* call a "hybrid" version. We've documented two cases (a '91, and a '92) where the system is still running off the power steering pump, BUT there is no foot brake, and they have the yellow knob on the dashboard along with the PARK position on the shift lever - - an interesting combo of the oldest and newest versions.

SOME HOPEFULLY USEFUL INFORMATION ABOUT AUTO-PARK - - Version I

Disclaimer: I'm not a retired mechanic or any kind of expert on brakes. I had a '94 Southwind with auto park, which gave me some trouble - - Local Chev people didn't *seem* to know a lot about it so I decided to learn what I could. A lot of this info is my opinion and should be taken as such. If you have any doubts about a procedure, or your own ability to work on these things, you should hire someone licensed, and bonded to do the work for you.

The same day I bought my Southwind (I have since sold it and bought a DP), we discovered that it rolled down minor slopes even with the brake on. I incorrectly assumed that the locking pawl in the tranny was busted - - took it to tranny shop. Guy there sez there is no pawl in the tranny - - after a certain gross weight (which we believe to be 16000 lbs), they are not used because they just won't hold. (Edit note: Since originally writing this, we have learned that apparently some rigs weighing LESS than 16000 lbs, did come with both a tranny pawl lock system as well as AutoPark). He shows me the Auto Park brake and said he didn't know much about it - - my adventure starts:

In my not so humble opinion, I think Auto Park is not the best collection of ideas in the parking brake world. I *THINK* that it was dreamed up for people who were used to sticking the shift lever in park, and assuming the rig would not roll. When working properly, it more or less does just that. However, as mentioned above, it really has nothing much to do with the tranny. My explanation goes more like this: Behind the tranny, there is a good sized drum brake - - fastened to, and part of the driveline. This brake can be applied two ways on the early versions - - one, with the parking brake foot pedal, or two, by putting the shift lever into the PARK position. On the newer versions, it

may be applied with the shift lever (PARK position), or by pulling the yellow knob on the dashboard.

The foot pedal system is actually quite independent of the Park position system. This independence is gained thru incorporation of a "mechanical relay" mechanism, which allows the AutoPark OR the foot pedal to operate the driveline brake, but at the same time there is no interaction between the foot pedal and AutoPark. The foot pedal is pretty much directly and mechanically linked to the drum brake. It is adjustable and can be tightened or loosened to a degree (cable adjustment) - - without any affect on what the PARK mechanism does.

The PARK mechanism is more complicated. The power steering mechanism and the pump it uses, takes some of its pressure to provide boost for the service (wheels) brake system (instead of vacuum like lots of cars use), and this same hydraulic pressure is used for making the auto park system work - - this is true only of the earlier versions. Newer versions have their own separate pump and reservoir.

Slightly off to one side of the driveshaft/park brake drum assembly (passenger side on MY rig anyhow), is a fair sized hydraulic cylinder dedicated to auto park. This cylinder, when pressurized, COLLAPSES a very heavy coil spring. This heavy spring, when RELEASED, applies pressure to the parking brake drum. So the brake is ON, when the hydraulic pressure is removed from the cylinder. When the hydraulic pressure is released, the brake goes ON. THIS IS A LITTLE BACKWARDS FROM WHAT YOU MIGHT THINK SO DON'T OVERLOOK THIS DETAIL.

A fairly common occurrence with this system, is that FOR ONE OF SEVERAL REASONS, the pressure is not getting to this cylinder, and the brake is locked on - - irrespective of the position of the shift lever. This may find you in a campground, your driveway, or the fast lane of the freeway - - PARKING BRAKE LOCKED AND WON'T RELEASE. You either have to somehow get the pressure back, or mechanically disengage the brake from the auto park system in order to move the vehicle - - OR, have a tow truck lift the whole back end of the rig off the ground to tow it. The other option would be to remove the driveline or at least disconnect one end of it.

The other common malfunction is that you put it in PARK, and the puppy still rolls. This basically boils down to either the park brake lining is worn out and needs replaced, or far more likely, just an adjustment of the linkage between the auto park mechanism, and the brake drum assembly OR, the brake shoes themselves can be adjusted with the traditional

"star wheel" on the backing plate for the drum brake. IF it is worn out lining, the foot pedal parking brake isn't gonna work either, so this is the first thing to check. If you can get the foot brake pedal to hold you from rolling, that tells you that the lining must still be

OK - - same brake in both cases. If the foot brake doesn't hold, it could still be just an adjustment problem - - separate from the auto park adjustment problem. Of course, if the lining is shot, neither system is going to work regardless.

NOTE: Some people have become so unhappy with the auto park problems, that they have disconnected the whole autopark part of the mechanism from the drum brake and rely SOLELY on the foot pedal. This would have to be a personal decision, but obviously you run the danger of someone sticking the shift lever in PARK, and getting out - - sort of a poor choice if parked on any kind of slope. Results not much different from having auto park hooked up, but failing to work. The one thing about totally disabling the system tho, is that you aren't going to have it lock up on its own - - as mentioned earlier. One method of disabling the mechanism is to "cage" the big spring - - We have pictures of a device for doing this if anyone is interested.

Sooooo, to the other problem of having it roll when you don't want it to (as opposed to NOT rolling when you DO want it to), assuming that the brake drum and lining are still good (a fairly good assumption - - should last a long time unless it has been dragging, or unless it maybe got oil on it from a bad tranny seal or something like that), then you are simply down to a matter of adjustment.

On adjustments: The different versions have different requirements, so we will not address that at length here. If you need to adjust the shoes or cables, we can provide some information SPECIFIC to the version you have. In general however, it is very important to remember that this is a "static" brake. Unless something is wrong, or has been wrong, there is no reason for the linings to wear to any measurable extent. Any real amount of wear, or need for adjustment would indicate that the brake has been dragging. This in turn, could well mean that AutoPark has been applied while the vehicle was moving (A very common problem!) Several different conditions (malfunctions) can cause this to happen - - all of them potentially leading to serious problems. So - - IF AUTOPARK DOESN'T HOLD, OR IF THE FOOT BRAKE DOESN'T HOLD, IT IS MOST LIKELY BECAUSE THE BRAKE SHOES ARE WORN AS A RESULT OF DRAGGING. THIS IS A SERIOUS SYMPTOM AND SHOULD BE INVESTIGATED IN EVERY CASE.

Regarding the other failure - - Parking brake won't release. Again, not a problem I have had, but we can comment on the "ingredients." If for some reason, you can't get hydraulic pressure to the park brake cylinder, you WON'T be able to compress the spring which puts the brake ON. On the earlier versions, this could be because your power steering pump has a problem - - IF THIS IS THE CASE THO, YOU HAVE PROBLEMS WITH POWER STEERING, POWER BRAKE BOOST, AND, THE AUTO PARK - - This applies only to the earlier versions which utilize the power steering system for pressure - - Later versions have their own dedicated pump and reservoir - -

These later versions with their own pump and reservoir can also have the same problem of applying the brake when you DON'T want it ON. An advantage of the earlier system is that if your power steering conks out on you, you're gonna know it for sure! Remember, you'll feel it not only in the steering wheel, but the service brakes as well - - At that point, AutoPark may be the least of your worries! The failure of the newer pump/reservoir systems may be more insidious. They may go on and off intermittently while you are going down the road. Sometimes at road speeds, you might not feel the additional drag - - some have reported just seeing the brake warning or AutoPark warning lites blink occasionly - - NOT SOMETHING TO BE IGNORED!

Again, let me caution that this is a collection of ideas from my not-so-good memory. Comments appreciated and I'll try to make useful additions or corrections as we go along. I haven't had to troubleshoot the microswitch/wiring/solenoid system so maybe someone can add to that part of the discussion.

I *think* the present system is quite similar, but now uses the shift lever (and a PARK position)as well as a yellow knob on the dashboard to energize or de-energize the hydraulic cylinder/spring portion of the mechanism. Does NOT have a foot pedal brake on these newest versions.

Roger, I have a 1997 Chevy Winnebago on P-32 chassis. Apparently, the Auto Park system is changed somewhat. The system controls a propeller shaft-mounted parking brake. It consists of a pressure maintenance switch, electric/hydraulic pump, reservoir, high pressure actuator, solenoid valve, light switch, parking brake relay, and a cam actuated switch. This I got from the manual on the P-32. I do have a PARK position, and they have done away with power steering pump support. The system operates as follows: When steering is moved from PARK position,the cam actuated switch closes allowing current to flow to the solenoid valve. The solenoid closes and holds the system pressure. The cam actuated switch supplies current to the pressure maintenance switch, which closes at pressures below 8,300 kPa, turning on the pump motor to supply fluid pressure to the actuator. The actuator has a large spring that applies the parking brake. Fluid pressure overcomes spring tension and moves the piston in the actuator , which transfers to the parking brake. When fluid pressure reaches 11,000 kPa, the pressure maintenance switch opens and the pump shuts off. Putting the shift lever back in the PARK position,de-energizes the parking brake solenoid to return the fluid back into the reservoir. As pressure decreases, the spring in the actuator moves the piston and applies the parking brake. What you had in your message is essentially how the system still works. I will let you know what they find with mine. Thanks again, Phil.

For those who think their P30 has a pawl in the tranny - - I believe they might wanna CAREFULLY check this out. Just because it seems to "lock up" in PARK position,

doesn't mean there is a locking mechanism in the transmission. THAT IS WHAT MANY OF THE POSTS on this forum are about concerning AUTOPARK. This is a tricky system and has led to lots of miseries - - read about them please!

We have heard about some of the earlier coaches that DO have a tranny pawl, as well as AutoPark. I THINK these are rigs that weigh less than 16000 lbs. That seems to be the magic weight over which the trannies DO NOT have a pawl, and rely only on the AutoPark system or the foot brake..

Your concerns about AutoPark are shared by a lot of folks. I've only owned one rig that had it, a 94 Southwind. Didn't have a whole lot of trouble with it but just enough to get curious. Learned just enough to answer a few questions on the RV forum, and somehow that grew into the AutoPark Library which has become about a 15 hour per week hobby!

The AutoParks first seemed to appear in 1989 - - on Chevrolet chassis' but maybe some GM things too - - have never known if that is the case or not.
Anyhow, they have been a Chev feature on most or all motorhome chassis up till around 1999, when Workhorse took over making the motorhome chassis.
Normally, they will be found only on rigs weighing over 16000 lbs. There are a few exceptions to this so if it was a tiebreaker on your choice of motorhomes, you want to look carefully at ALL the ones made by Chev or Workhorse. AutoPark is famous for exceptions to the rule. Of course if you buy something on a Ford chassis, it will not have AutoPark.

There are no bulletproof mods that I know of. Best thing is to learn all about it, and you can live with it pretty easily. They aren't all that hard to maintain or

THE AUTOPARK STORY ….. UMPTEENTH REVISION….again..

The following is an attempt to explain the evolution of the AutoPark thru the different versions. Please understand I've only owned and worked on one of them- - A P30, 1994 Southwind.

All versions are somewhat complicated. My opinion is that the initial concept was an attempt by Chev to make people think they were driving the family car - - stick it in "Park" and walk away - - even though mechanically, an entirely different thing was happening than what happens in the family car.

Earlier versions of AutoPark used hydraulic pressure from the power steering to make it work. The same pressure was also used for service brake boost (instead of vacuum) - - think they call that "Hydroboost" or something like that. Later edit concerning early version- - We always thought AutoPark only appeared on motorhomes OVER 16000 lbs

and took the place of the locking pawl in the tranny. It now appears that there are some out there weighing LESS than 16000 lbs, and these have BOTH AutoPark as well as a tranny pawl.

The next generation is similar in that it still had a PARK position on the gear shift lever, and it also had the foot pedal brake like the earlier version. However, this second general version does not use the power steering pump for hydraulic pressure. It has its own, dedicated pump and fluid reservoir.

Then - -

The third generation has both the PARK position on the gear shift lever, and also a yellow button on the dashboard to activate, or deactivate the parking brake.
There is NO foot actuated parking brake on this version. On this system, to release the brake, you must take the shift lever out of park, AND push the button in. To apply the brake, you can either place the shift lever into PARK, OR pull the button out. Haven't figured out why they have done this - - yet. This is called the J 71 system.

The earliest units (circa 1989) have a valve mechanism hooked directly to the gear shift linkage. This valve controls the hydraulic pressure which is applied or removed from the AutoPark actuator. These valves have been known to give trouble - - Somewhat expensive to replace but you can buy (online) a rebuild kit for them at a reasonable price, or send them in to be rebuilt - - also more reasonable than new price.

Later units (appearing circa 1994) do not have this valve, but instead have a microswitch which in turn actuates a solenoid valve - - sorta does the same thing as the earlier, but quite differently configured.

We have pictures and diagrams of both of these setups - - the valve and the microswitch. On the third version, the position switch is relocated to the side of the transmission.

The second and third generation units have had some trouble with the microswitch assembly linked to the gear shift mechanism, that senses the position of the gear shift lever. Malfunction or maladjustment of the switch can either fail to apply the brake, OR apply the brake when you don't want it to. Failure of the hydraulic pressure on ALL versions of AutoPark can prevent release of the brake. There are lots of reports of having the brake locked on, and no way to release it (from the driver's seat). There are relatively fewer reports of failure with the version which runs off the power steering system. Most of the reported problems are concerning either the shift lever actuated valve, or just lack of proper adjustment of brake mechanism - - i.e. brake shoes or

linkage.

Later versions, which have a separate hydraulic pump for AutoPark, and do NOT use the power steering pump for AutoPark pressure, have had some problems with the microswitch on the shift lever, but more importantly have also had many failures of the switch assembly on the electric motor for the hydraulic pump. This seems to be the *most frequently reported cause of failure* in any of the units that utilize the separate pump and reservoir. We have dubbed this switch The Rotten Green Switch, (it IS green), but it is more properly referred to as either the pressure maintenance switch, or the pump motor switch. It is known to fail in two stages - - Both stages apparently due to the seepage of hydraulic oil into the workings of the switch. In the first stage, it usually locks the contacts in the ON position. This results in having the pump continue to run and produce even higher pressures. At some point, the switch mechanically ruptures allowing some, or all of the oil to escape the system. *This in turn*, results in default application of the parking brake - - a potentially dangerous situation.

Over time, we have come across some examples of what *we* call a "hybrid" version. We've documented a few cases (built in 91 and 92) where the system is still running off the power steering pump, BUT there is no foot applied parking brake, and they have the yellow knob on the dashboard along with the PARK position on the shift lever - - an interesting combo of the oldest and newest versions.

WE really appreciate additions and corrections to this information - - No particular expertise is claimed here - - just trying to learn what we can and share it with others. I no longer have a P30, but feel for those who have fought these problems.

SOME HOPEFULLY USEFUL INFORMATION ABOUT AUTO-PARK - - Version I

Disclaimer: I'm not a retired mechanic or any kind of expert on brakes. I had a '94 Southwind with auto park, which gave me some trouble - - Local Chev people didn't *seem* to know a lot about it so I decided to learn what I could. A lot of this info is my opinion and should be taken as such. If you have any doubts about a procedure, or your own ability to work on these things, you should hire someone licensed, and bonded to do the work for you.

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16000 lbs, did come with both a tranny pawl lock system as well as AutoPark). He shows me the Auto Park brake and said he didn't know much about it - - my adventure starts:

In my not so humble opinion, I question whether Auto Park has always utilized the best collection of ideas in the parking brake world. I *THINK* that it was conceived for people who were used to sticking the shift lever in park, and assuming the rig would not roll. When working properly, it more or less does just that. However, as mentioned above, it really has nothing much to do with the tranny. My explanation goes more like this: Behind the tranny, there is a good sized drum brake - - fastened to, and part of the driveline. This brake can be applied two ways on the early versions - - one, with the parking brake foot pedal, or two, by putting the shift lever into the PARK position. On the newer versions, it may be applied with the shift lever (PARK position), or by pulling the yellow knob on the dashboard.

The foot pedal system is actually quite independent of the Park position system. This independence is gained thru incorporation of a "mechanical relay" mechanism, which allows the AutoPark OR the foot pedal to operate the driveline brake, but at the same time there is no interaction between the foot pedal and AutoPark. The foot pedal is pretty much directly and mechanically linked to the drum brake. It is adjustable and can be tightened or loosened to a degree (cable adjustment) - - without any affect on what the PARK mechanism does.

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driveway, or the fast lane of the freeway - - PARKING BRAKE LOCKED AND WON'T RELEASE. You either have to somehow get the pressure restored, or mechanically disengage the brake from the auto park system in order to move the vehicle - - OR, have a tow truck lift the whole back end of the rig off the ground to tow it. The other option would be to remove the driveline or at least disconnect one end of it.

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NOTE: Some people have become so unhappy with the auto park problems, that they have disconnected the whole autopark part of the mechanism from the drum brake and rely SOLELY on the foot pedal. This would have to be a personal decision, but obviously you run the danger of someone sticking the shift lever in PARK, and getting out of the driver's seat - - sort of a poor choice if parked on any kind of slope. Results not much different from having auto park hooked up, but failing to work. The one thing about totally disabling the system tho, is that you aren't going to have it lock up on its own - - as mentioned earlier. One method of disabling the mechanism is to "cage" the big spring - - We have several approaches for doing this if anyone is interested.

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On adjustments: The different versions have different requirements, so we will not address that at length here. If you need to adjust the shoes or cables, we can provide some information SPECIFIC to the version you have. In general however, it is very important to remember that this is a "static" brake. Unless something is wrong, or has been wrong, there is no reason for the linings to wear to any measurable extent. Any real amount of wear, or need for adjustment would indicate that the brake *has been* dragging. This in turn, could well mean that AutoPark has been applied while the vehicle was moving (A very common problem!) Several different conditions (malfunctions) can cause this to happen - - all of them potentially leading to serious

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Regarding the other failure - - Parking brake won't release. Again, this is not a problem I have had, but we can comment on the "ingredients." If for some reason, you can't get hydraulic pressure to the park brake cylinder, you WON'T be able to compress the spring and the brake will be APPLIED. On the earlier versions, this could be because your power steering pump has a problem - - IF THIS IS THE CASE THO, YOU HAVE PROBLEMS WITH POWER STEERING, POWER BRAKE BOOST, AND, THE AUTO PARK - - This applies only to the earlier versions which utilize the power steering system for pressure - - Later versions have their own dedicated pump and reservoir - - These later versions with their own pump and reservoir can also have the same problem of applying the brake when you DON'T want it ON. Perhaps an advantage of the earlier system is that if your power steering conks out on you, you're gonna know it for sure! Remember, you'll feel it not only in the steering wheel, but the service brakes as well - - At that point, AutoPark may be the least of your worries!

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Again, let me caution that this is a collection of ideas from my not-so-good memory. Comments are appreciated and I'll try to make useful additions or corrections as we go along

We will try to revise all these versions as we learn more about them. Feel free to make comments or ask specific questions - - will help if I can.

The purpose of this write-up is to help with the determination of "Which version do I have?"

AutoPark systems built between approximately 89, and 94, all utilize the power steering pump as a source of hydraulic pressure. They have a "PARK position" on the gear shift lever which actuates the automatic apply parking brake. Most of these units also have a manually applied foot pedal, located to the left of the steering column, that will also apply the same brake - - A drum type brake located on the driveshaft right behind the transmission.

We have arbitrarily labeled this configuration, "Version I."

Within the Version I timeframe, there are a small number of units that DO NOT have the foot applied brake, but instead have a yellow knob on the dashboard that will apply the parking brake. As with all the other Version I units, the brake can also be applied by putting the shift lever into PARK. We see very few of these, and simply refer to them as "Version I with the yellow knob."

Sometime during 94, (the date is a little soft), use of the power steering as a source of hydraulic pressure was discontinued, and a dedicated pump and reservoir were added. We call these "Version II." They also have the foot pedal for application of the parking brake, as well as the PARK position on the gear shift lever.

Around 98 or 99, Workhorse took over the chassis manufacturing from Chevrolet. They discontinued the provision of the foot pedal for application of the parking brake, and went back to the "yellow knob on the dashboard." We call these "Version III."

HOW DO WE TELL WHICH VERSION WE HAVE?

All Version I systems have some rather sophisticated valves and tubing under the floorboard. We've attached pictures of these. Presence of these valves is a sure indicator of Version I.

Version II has the pump and reservoir located under the coach, on the passenger side of the transmission and slightly aft - - up against the right hand frame rail. The reservoir can be seen thru a cutout in the metal box that shields it and the other AutoPark goodies. We've attached a picture of the reservoir. If you have this reservoir, AND a foot applied parking brake pedal, you have a Version II.

Version III is on the Workhorse chassis. It has NO FOOT PEDAL for application of the parking brake, and instead has the yellow knob on the dashboard.

There are some scattered hybrids/morphs among the above - - notably some units made for export. For most purposes though, the above guidelines will apply.

This is a sort of "canned" explanation of the Rotten Green Switch malfunction. We may send you more specific info dealing with your particular problem once we get into the troubleshooting process a little farther.

The Rotten Green Switch (RGS for short) is actually called the "pump motor switch" by Chevvy and Workhorse. It has some bright green plastic on it, and is by far (maybe 85% of the time) the most frequently failing component of the AutoPark system with units starting from about 1996 thru present.

Frequently, it fails in stages. Initially, the hydraulic oil may leak only into the workings of the switch, causing it to malfunction electronically. Later, as the "disease" progresses, the oil starts leaking externally - - leading to an empty or low reservoir. Symptoms may be feeling some drag by the brake while underway, or even total lockup of the brake. Can happen while rolling or parked. Depending on the severity of the malfunction, it may happen rather intermittently at first, and may not be noticed. Then over time, it gets worse until the fluid is all gone. The problems may also very likely cause the dashboard warning lites to come on or to flicker on and off.

In the intermittent case, if the brake goes on and off while travelling, the brake shoes may get worn down to where the AutoPark doesn't hold the coach from rolling. Sudden and severe leaks are more likely to cause lockup.

Versions from about 1996 thru 1998, will probably have a foot applied parking brake along with the AutoPark. Later versions have no foot pedal, and instead have a yellow knob on the dashboard which can apply the parking brake. While there are technical differences between these systems, RGS failure does about the same thing in both cases.

Again, this is sort of a general explanation of the RGS malfunction. There may well be more, or different considerations in your particular case. This is for background purposes to help start the troubleshooting process.

Around 1995, the AutoPark system was modified such that it no longer used the power steering pump as a source of operating pressure. The new version was fitted with a separate hydraulic pump/motor assembly which runs at considerably higher pressure than the power steering/hydroboost system. The basic principles of operation however, remain much the same

The PARK position on the shift lever is continued, as is the foot park brake pedal. With this version, the parking brake could be applied by either putting the shift lever into PARK, or by depressing the foot pedal. Either one will, by itself, apply the brake. Both must be released for the vehicle to roll. Both these mechanisms apply the same drum brake which is on the driveline right behind the tranny.

There is an indicator lite on the dashboard that is associated with the parking brake system, and it is referred to as the "AutoPark Warning Lite." NOTE: There is also, another lite that indicates when the mechanical foot brake has been applied, but this lite is not related to the AutoPark circuit or configuration. As such, it has no particular relationship to either the operation or troubleshooting of the AutoPark system.

Lifted (loosely) from the manual: "The AutoPark lamp goes on when the parking brake is applied, or whenever the pump motor is running.

This warning lite has two separate switches which can cause the lite to go ON. One is the pump motor switch - a.k.a. the Rotten Green Switch - and the other one is a pressure switch mounted on the actuator. The Rotten Green Switch (RGS) turns on the AutoPark lite at the same time it turns on the pump motor.

The pressure switch on the actuator, closes if the pressure in the actuator drops below about 450 psi. It is worth noting, that at 450psi, the park brake will probably still be NOT APPLIED. When the park brake is applied with the shift lever, the pressure drops to nothing for practical purposes - - thus turning on the AutoPark "Warning" lamp. As noted tho, if the pressure was below 450psi for SOME OTHER REASON, the lamp would also come on and serve as a warning that something is amiss.

Examination of the possible scenarios that might fit "SOME OTHER REASON," are potentially interesting. Going down the road, with no leaks in the hydraulic system, one would expect the pressure to be near the 1600 psi and holding. The AutoPark lamp should be OFF. With very mild internal "seepage," one could imagine that the pressure might slowly drop until it dips below the 1200 psi point, at which time the pump would *briefly* cycle to build back up to 1600 psi. This brief cycle would have the AP lamp ON for just the time the pump was running. The point we pursue here is - - Under what circumstances, would the park brake low pressure switch (aka pressure indicator switch) turn on the AP warning lamp while going down the road? In most scenarios, the RGS would have already turned on the pump AND the AP lamp back around 1200 psi - - LONG BEFORE the indicator switch got a chance to kick in around 450 psi.
ANSWER: RGS failure where the switch FAILS to turn on at, or below 1200 psi.

So this AutoPark Warning lite can be a useful diagnostic aid. It should be ON when the shift lever is put into PARK - - because the low pressure switch on the actuator senses low or no pressure. It should be ON briefly when the pump runs as you move OUT OF PARK with the gear shift - - because the pump/motor is running to build pressure. It may *infrequently* go ON to signify that the pump is cycling for pressure maintenance. If it is ON under other situations, or even flickers (like going down the road, at a stop sign etc.), that *could* be an indication of a SERIOUS PROBLEM. Driving the vehicle with these symptoms runs the considerable risk of a lock up, or the park brake failing to hold on an incline. Analyzing and addressing these symptoms is best done on a case by case basis. Suffice to say these are INDICATORS OF POTENTIALLY DANGEROUS CONDITIONS.

In summary, this lite is useful to indicate brake operating status, as well as to be an indicator of malfunction or potential malfunction. Except for infrequent pressure

maintenance cycling, the AutoPark lite should not go on while the vehicle is rolling. If the lite fails to meet the above conditions, further examination is indicated.

Sometime circa '95 or '96, Chevrolet discontinued the practice of powering AutoPark with the power steering system. The new system utilized a dedicated electric motor driven pump to provide the hydraulic pressure necessary for operation of AutoPark. The subject of this paper is to describe a simple method for checking these newer systems - - roughly 1995 thru present versions.

This test should be done on level ground with wheels chocked. On models that have the foot applied park brake, it should be applied (if working).

The AutoPark pump can usually be heard from the driver's seat IF the engine is NOT running. So, the test should be performed with ignition ON, but engine NOT RUNNING. If you have the yellow knob on your dashboard, it should be pushed IN.

With the gear shift lever in PARK position, ignition ON, the AutoPark lite on the dashboard should be ON. The pump should NOT be running.

If you shift out of PARK into neutral or reverse, the AutoPark lite should stay on for maybe 10 or 15 seconds and you should hear the pump running. Both the lite and the pump should shut off in 10 to 15 seconds.

If the lite stays on or the pump keeps running (or both), you PROBABLY HAVE A MALFUNCTION. That pump is supposed to go ON at about 1200 psi in the AutoPark system, and OFF at about 1600 psi.

If the pump doesn't run at all when you shift out of PARK, that also indicates a problem.

Any failure which results in the loss of hydraulic pressure is going to APPLY the AutoPark brake. This could leave you with the brake ON - - anywhere - - even going down the road.

So make the above test - - listen for the pump and watch the AutoPark warning lite on the dashboard.

If something doesn't look or sound right, feel free to contact me for help with the next step or repair information.

Here is an online source for The Rotten Green Switch - - aka the pump/motor switch and aka the pressure maintenance switch. Also, this is supposed to be a helpful place for other GM parts.

The GM switch PN is 15961566. It is stamped on the case. The cost has been $37.90. Should be fairly close to that but you never know the way things have been going up lately.

You can order it online at http://www.gm-auto-parts.com/.

This is the second generation of this particular memo. We have had only a few cases involving this issue but believe our analysis to be sound, and important enough that anyone installing a new Rotten Green Switch (pressure maintenance switch) should be advised of a potential problem.

The RGS threads into a piece that looks somewhat like a pipe reducer. We call it a "poppet valve hex reducer." For short, the PVHR. One end of the PVHR has a 3/8 24 female thread the RGS screws into. The other (male) end screws into the pump body itself - - not a pipe thread I'm told. Several people have said that they buggered the female thread in the PVHR (which accepts the RGS) in the process of installing the new RGS - - and have thus found it necessary to drill out the old threads, and re-tap the hole to something larger. Then, they made a newly threaded bushing to fit the RGS on one end, , and to fit the PVHR on the other. Sort of sounds like a Helicoil repair for those who are familiar with that process. At this point, we don't as yet know diameters or thread pitches - - just the basics of the repair.

The potential problem is as follows: This PVHR , described above as looking somewhat like a pipe reducer, retains a spring and poppet valve. Some of our forum members have reported that they did not realize the presence of this small spring with a "button-like object" at the end of the spring *inside* this fitting - - In both cases, when they *removed* the fitting to repair the threads, the spring fell (luckily) into their oil drip/catch pan but they didn't know it at the time.

After installing the new RGS, and checking AutoPark function on both of these motorhomes, it was found that the AutoPark dashboard lite blinked on and off quite rapidly, and a click could be heard each time the light blinked. In both cases, this was cured when the spring/button was found in the drip pan, and properly re-installed. For those interested, the function of the poppet valve is to keep the system pressure from flowing *backwards* through the pump after the pump stops running - - loss of the poppet or spring allows the pressure to rapidly escape back through the pump and results in the oscillation effect.

Consequently, anyone replacing an RGS should be aware of the potential problem. For whatever reason this hex valve fitting may be removed, the mechanic must be careful

not to lose any of the parts of the poppet assembly We do have an annotated picture of the system that shows and labels the RGS and the hex reducer. We also have (courtesy of the pump manufacturer), exploded views of the poppet assembly and corresponding part numbers in the event someone should lose any of these pieces. The obvious way to avoid these miseries is to remove ONLY the RGS and NOT the hex reducer which retains the poppet assembly.

Anyone who encounters the rapid on/off cycling of the pump should suspect loss or malfunction of this poppet assembly. Let us know if you need further information on this subject.

We have attached a photo of the RGS and the poppet valve body/hex valve body.