

An e-mail arrived in mid-October advising me that a J4500 equipped with the new ZF AS Tronic transmission would soon emerge from MCI's assembly line in Pembina, North Dakota. Would I be interested in driving it to the MCI facility in Des Plaines, Illinois?

My answer was an unqualified "yes." This was a golden opportunity to get nearly 1,000 test driving miles. Although I had briefly driven a J4500 for a few miles, I had not yet had an opportunity to open one up for several miles on the interstate. At the same time, I really wanted to get some operational experience with the new AS Tronic. Both the J4500 and the ZF AS Tronic transmission are mentioned regularly in our e-mail and telephone calls. This would allow me to get some real "seat" time and be able to answer questions from readers better.

Maybe I am just prejudice, but I would have to admit that the "going" part of the trip was the worst. Getting out of O'Hare International Airport was a nightmare. I had to leave before dawn to allow myself enough time for check-in and security procedures. The Northwest Airlines ticketing staff was pleasant, but made me stand by while they x-rayed my luggage. Going through security was another experience since I was selected for the body search and shoe removal. Then, I had to go through the same thing again at the gate. Flying can be less than a pleasant experience.

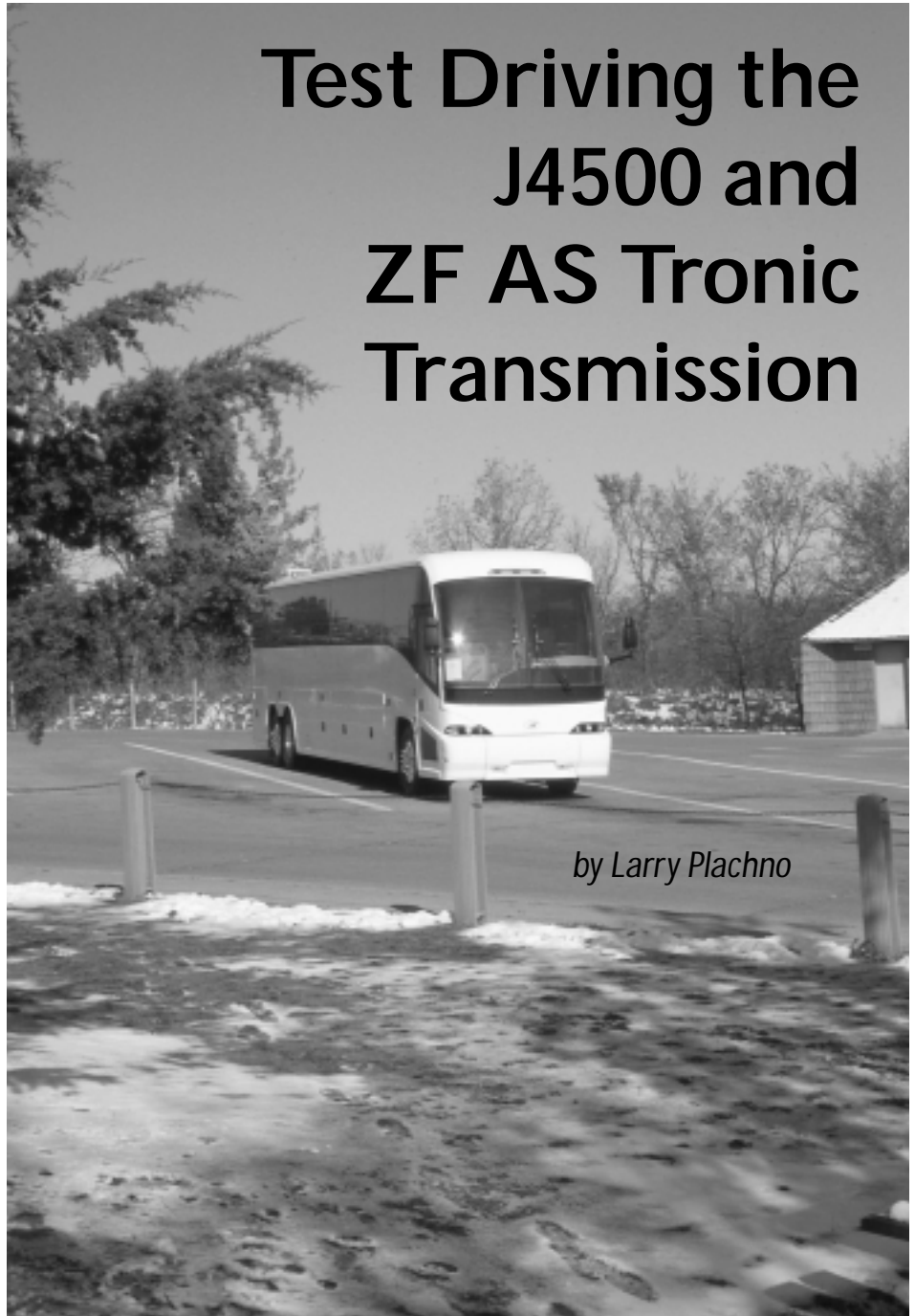
I saw snow on the ground while flying over Minnesota. The change of planes in Minneapolis was uneventful, and I did not have to be searched again. Arriving in Grand Forks, I was met by Earl Mountain who is the captain of the bus send-off crew at Pembina. While driving to Pembina, Earl gave me some information on the J4500, and we exchanged several bus stories.

A major reason for my interest in the J4500 is its increasing popularity among MCI buyers. The D4500 continues to be the workhorse of the MCI product line. It has been the most popular coach on the market for something like nine years now. The G4500 is also showing increasing sales, particularly to Greyhound and affiliates. However, if you remove the government agency and Greyhound orders, it appears that the J4500 has gotten to be the MCI model of choice among private commercial coach operators. There obviously is a reason for this.

I will admit that I am conservative in my tastes. I originally learned to drive coaches on a PD4103 and have spent too many

Test Driving the J4500 and ZF AS Tronic Transmission

by Larry Plachno



Your editor took advantage of a recent opportunity to test drive a J4500 from North Dakota to Illinois. In addition to covering several interstate highway miles in the new J4500, it also provided an opportunity to test drive the new ZF AS Tronic automatic transmission. This photo was taken at one of the rest areas along the way. NBT PHOTO.

hours broken down on the side of a road with a recalcitrant bus. Traditional systems and reliability rank high with me. It will take more than a pretty paint job to get me to eschew the "D" model for something prettier.

However, the J4500 is off to a good start with an impressive parentage which includes a marriage of the attractive E4500 and the durable and popular D4500. Like most offspring, the J4500 displays charac-

teristics of both parents. The sleek styling of the E4500 is obvious including the curving entrance way. At the same time, the systems and components resemble the D4500 to a large extent.

I will admit my concerns over the fact that most of the major systems on the J4500 are electronic to a greater or lesser extent. In addition to an electronic engine and transmission, you have ABS brakes, a computerized HVAC system and an optional

electronic passenger entertainment system. When I learned to drive a bus, the only thing electronic was the AM radio, and a small tool box and a box of spare parts would get you home most of the time.

On the negative side, the average driver is not going to be able to repair the electronic systems if they fail on the road. On the positive side, bus mechanics will have less grease on their hands and will become more computer literate – which may make finding mechanics easier. In any event, the electronics are here to stay, and there is not much we can do about it.

I liked the driver's cockpit on the J4500. The ISRI air seat with arm rests is delightful. There are big window shades to hold back the sun and the electric windshield wipers work great. There are two drawers next to the driver's right knee which are very handy. I would bet they are used to hold tickets on line runs.

My notes say that the "dash is straight forward." Like the old PD4104, your gauges are in the center with controls on both sides. Rocker switches are used with graphic symbols. It took me a few hours to figure out what some of the symbols stood for and what the switches did. However, it did not take long to become comfortable. There is a cup holder on the left side panel as well as two 12-volt "cigarette lighter" plugs which today are more likely to be used for cellular phones.



It did not take long to get comfortable in the driver's cockpit. The air ride ISRI seat with arm rests made driving a pleasure. Rocker switches with symbols are used on the panels on both sides of the steering wheel. MCI PHOTO.

The mirrors are worth mentioning for several reasons. On the coach I drove, there were dual, remote-controlled mirrors on both sides of the coach. The remote control was delightful since it moved both mirrors on both sides. However, I found myself being extra careful with those mirrors going through toll booths. My understanding is that most of the drivers like the way this coach was set up so I may have been more careful than I needed to be.

Overall, the ride was smooth and stable with very little sway. Actually, I was impressed with the ride since the coach was virtually empty. After three or four turns, I knew where the back end was. It did not take long for me to get comfortable with the J4500.

I did notice that the Series 60 engine liked to run at a temperature of about 185-190. I felt certain that this was an appropriate temperature even though the engine coolant temperature gauge showed 175 degrees in the straight up position. I later checked with the service people from MCI who advised that engine temperatures are increasing as engine manufacturers make modifications to meet EPA regulations. These newer engines will run from 185-204 degrees depending on ambient outside air temperature.

In general, I liked the J4500. It gave me the impression of being both friendly and responsive. After only a few hours, I felt comfortable driving it. I can now appreciate why it is gaining in popularity.

The second reason for my test drive was the ZF AS Tronic transmission which is substantially different from the automatic transmissions we have had in the past. The early V-drive automatic transit transmissions of the 1940s and 1950s had only two "gears," turbine and direct. While the turbine section cost weight and power, it did allow variable speeds while getting started. In "lock up" for higher speeds, there was a direct mechanical link which helped with fuel economy.

There was a little bit of ice on the ground in Pembina when we checked out the J4500 prior to departure. MCI's departure captain, Earl Mountain, took the time to explain various aspects and controls on the J4500. We also took a few minutes to look at some of the compartments and features of the coach. NBT PHOTO.



In comparison, the new AS Tronic transmission has no "turbine" section. It is effectively a 10-speed, mechanical gear box with electronic controls and the equivalent of "lock up" in every gear. Hence, the AS Tronic has some characteristics of an automatic transmission as well as some characteristics of a mechanical transmission.

The first thing you learn about the AS Tronic is that it will not go into gear unless your foot is on the brake. It did not take long for me to get into the habit of releasing the parking brake AND putting the transmission into gear with my foot on the brake.

The second thing you learn is that the AS Tronic shifts like a mechanical transmission being handled by a super-expert driver. Engine RPM drops off between gears in spite of your foot remaining stable on the accelerator pedal. This can be disconcerting until you get used to it. If you are sitting further back in the coach, you might well think that this coach has a mechanical transmission and is being handled by a really competent driver.

Driving the AS Tronic is like driving a basic 10-speed mechanical transmission. It has a dry clutch just like in any standard gear box. The primary difference is the electronic controls handle all of the things the driver would normally do. As with any mechanical transmission, the clutch has to be disengaged, the gears must disengage, the engine RPM then drops, the new gear is engaged, the clutch comes back in, and the RPM climbs back up to its original level. All of this happens in seconds while you hold your foot steady on the accelerator pedal.

Moreover, all of this electronic control is highly subjective. There are several sensors that monitor different things like wheel speed, load, grade and engine RPM so as to pick the right gear from the standpoint of both passenger comfort and fuel economy. Incidentally, the computer control means exceptionally long life for the clutch. One of the AS Tronic transmissions on a line-haul coach reached 100,000 miles of service with virtually no wear on the clutch.

I will admit that I intentionally tried to get the AS Tronic to misbehave. I came out of rest stops at full acceleration with the pedal on the floor. The acceleration is impressive and the AS Tronic never had a bad shift. On other occasions, I tried varying degrees of engine settings and still got excellent shifts. Unless you are accelerating very slowly, the AS Tronic will skip gears as appropriate. I watched and dis-



Some of the styling of the J4500, such as the curving front stepwell, is obviously inherited from the E4500 Renaissance model. The result is a modern looking coach which will appeal to passengers. Your editor was pleased to see cup holders on the left panel and those two drawers adjacent to the driver's right knee. MCI PHOTO.



The interior of the J4500 is sure to please passengers. Large windows give the coach an open feeling, and the enclosed parcel racks and optional entertainment systems match airline amenities. There is also a restroom at the right rear of the coach. MCI PHOTO.

covered that it almost never followed the same pattern.

Due to the drop in RPM and gear change, you might get the impression that the AS Tronic is a lumbering alligator. Actually, it is a dancing gazelle. On a few occasions I came out of a rest stop to find an 18-wheeler uncomfortably close in the right lane behind. I immediately mashed my right foot and tried to put that accelerator pedal through

the floor. The AS Tronic did not hesitate, it did not quit, and it did not step out to lunch. It immediately figured out what I wanted and when I wanted it. It danced right through those gears, and in every case the truck did not need to get over into the left lane.

At cruise, the Series 60 engine runs about 1500-1600 RPMs while the transmission shifts gears as appropriate. Again, I forced

the AS Tronic to downshift on hills, and it did so smoothly and without missing a shift. You can force the AS Tronic into a different gear using the control panel on the driver's left side, but the AS Tronic did a good job on its own.

An interesting note is that the 10 gears are more in the low range than the high. At 30 miles per hour the transmission was shifting from seventh to eighth gear, and at 55-57 miles per hour was shifting into 10th gear, the highest gear. Apparently, economy becomes less of a factor at higher speeds and so fewer gears are needed at the top end. In any event, the AS Tronic makes all of these decisions for the driver and then shifts to the appropriate gear while the driver merely holds the accelerator pedal steady.

The only way you can get the AS Tronic to jerk is in first gear and reverse. In these gears, the accelerator pedal actuates the clutch which in turn engages to move the coach at low speed. If you release the accelerator pedal abruptly you get the same effect as if you released the clutch pedal abruptly, on a stick shift – some jerking and shaking. Once you get into the habit of treating the accelerator pedal like a clutch, your maneuvering at slow speeds is much smoother.

Earl Mountain at MCI told me that it was impossible for a driver to check the fluid level inside the AS Tronic. I later checked with others and found out this is true. Since the AS Tronic is essentially a manual transmission, there is no dipstick. Instead the oil level is checked by opening the fill plug on



Detroit Diesel's Series 60 engine comes standard on the J4500 although other engines are available. Systems and service items in the engine compartment are easy to find and work on. Both drivers and mechanics should have no problem switching over to the J4500. MCI PHOTO.

the side of the unit and letting a little of the oil drip out.

I did not drive the coach far enough to get any kind of mileage information. However, the fact that the AS Tronic is lighter without a turbine section and has 10 gears to select from, strongly suggests that it should be more economical to operate. Several operators are quoting figures reflecting a savings of around 10 percent with occasional operators claiming more.

The big advantage of the AS Tronic is that it operates like an automatic transmission

while providing the economies and advantages of a manual transmission with a large number of gears. Any driver who can handle an automatic transmission should be comfortable with the AS Tronic. In addition, there are certain types of applications where the AS Tronic should be particularly appealing. The large selection of gears would make the AS Tronic a natural choice for hill and mountain driving. I tend to suspect that it might also work out well in convention and shuttle service because of the number of gears covering lower speeds. The AS Tronic could also be used to advantage in scheduled line haul service, charters and tours. □

The test drive ended when the J4500 arrived at the MCI facility in Des Plaines, Illinois. It was suggested that this particular coach would probably be used as a demo and might show up at conventions and trade shows. NBT PHOTO.



From the
January, 2003 issue of
National Bus Trader
9698 W. Judson Road
Polo, Illinois 61064
(815) 946-2341

Visit our Web site at
<http://www.busmag.com>
and subscribe today