

Jack and Clare May
Trip Report
JAPAN
March 24 to April 11, 2010

Part 1

July 15, 2011

After a couple of winter trips to places we always wanted to visit (Egypt and Southeast Asia), which also allowed us to escape the worst of the cold weather, this year we could not get terribly enthusiastic about any particular destination. We don't mind New York in the winter that much, and with a full schedule of cultural events and having the grandchildren nearby, there was little pressure to get away. In discussing this with Phil Craig, he suggested that we wait until the worst of the season was over, and then visit Japan. Clare and I found this to be an attractive idea--we had been to this nation of islands in 2005 and 2008, but not as a primary destination, only as a stopover on trips to other points. On the first trip we spent almost a week in the Tokyo area, and on the other we visited the Kansai region--Kyoto and Osaka, which are major tourist destinations because of their historical significance and architecture. Phil had visited Japan before, mainly Tokyo, but Susan (his spouse), had not, so we developed an itinerary to include some of the places we had already seen, as they are important tourist attractions and worth visiting again. Our 2005 trip took place during the first week of April, allowing us to experience the splendor of Tokyo's famous cherry blossoms, so we thought we would like to repeat that.

Sue had to fit the trip into her employment schedule and it turned out that this time of the year was perfect for her, but not for the full 18 days I wanted to take, so Phil and Sue committed themselves to just 16 days (March 25 to April 9) and we initially planned to take our two extra days at the end. My main objectives included visits to many of the remaining urban streetcar systems in Japan, few of which I had ever seen. In particular, since on the earlier trips I rode the carlines in the Tokyo area, Toyohashi, Kyoto and Osaka (roughly 7 properties), I thought I could get 12 more systems in, which would leave just Hakodate and Sapporo, both on Japan's northern island of Hokkaido, for another trip.

In trying to make our airline reservations, we missed some low fares between New York and Tokyo for that period by procrastinating, and when the fares zoomed up (probably because of Japan Airlines' financial problems), I thought we might have to switch to using frequent flyer miles. But then I noticed that prices had begun oscillating and when a reasonable fare for March 24 to April 11 was published, I jumped and added one additional day to the trip (because the fares for March 25 were \$100 higher per person). As it turned out, the fares for just about any combination of dates during that period eventually evened out, but never got back to the fares I initially missed. Now it was time to select hotels and that was accomplished via the internet, using TripAdvisor for reviews and links to reservations sites.

My plan for this trip report is to split it up into a number of segments, with most consisting of narratives for the days spent visiting the different streetcar systems, complemented by descriptions and slides, much like my recent series featuring my Labor Day 2009 journey to the west coast. In order to avoid repetition I decided to start with general descriptions of Japan (or Nippon, the name used by the natives), broken down into various topics. So this part of the report will not be based on our travels in one city or another, but will cover various subjects I think may be of interest. All the items below are based on my impressions, and are not necessarily fact. And I'm sure there are many exceptions to my generalizations, but perhaps they "prove the rule."

JAPAN

Japan consists of 4 major islands in the Pacific Ocean in the northeastern section of Asia, separated from the continent (Korea and Russia) by the Sea of Japan. It has a population of just under 130 million living on 150,000 square miles of land, an area slightly smaller than California. Like California the weather ranges from cool temperate in the north to sub-tropical in the south, although the atmosphere is much wetter, from plenty of rain. From north to south the major islands are Hokkaido, Honshu, Shikoku and Kyushu. Honshu is the largest and contains the capital, Tokyo. Much of Japan's land mass is mountainous, so most of the population is clustered in the 25 percent of the land that is considered habitable. As a result approximately 37,000 square miles of the country is host to a population of about 91 million, making the density over all these areas extremely high--some 2,500 per square mile (New York City has a density of 2,050). That's an average, and obviously the number is even greater in cities. Perhaps the compact nature of the country is the reason Japan's people display certain notable characteristics. Foremost is the fact that all areas, both urban and rural, are incredibly clean. There is virtually no garbage or dirt on the streets, or for that matter, in any public areas, including aboard trains and buses. And interestingly, it is almost impossible to find refuse containers in public places. Somehow or other the Japanese people carry their debris to their homes, offices, stores and restaurants for disposal (or they don't have any). Naturally we had to do the same, as we certainly did not want to litter. Public restrooms are immaculate.

The campaign against the health hazards of smoking began only in the last few years in Japan, decades later than in most western countries. This means that a relatively large portion of the population smokes cigarettes (especially when compared with the U. S.), but it was amazing to see no cigarette butts littering public spaces. I read that Japan has a sophisticated cigarette etiquette, which includes carrying portable ashtrays and not walking while smoking.

Also there is a very low crime rate, so tourists have little to fear along those lines (especially compared to places like Miami, Barcelona, Athens and Rome). Bicycles are ubiquitous in Japan to the same degree as in the Netherlands. But unlike Holland, bikes in Japan are left on sidewalks and storage areas almost always unlocked. [Of course that doesn't mean corruption doesn't exist, and I'm aware that Japanese corporations are at least as bad as their U. S. counterparts, when it comes to doing anything to win a contract.]

The “closeness” of the Japanese to each other has bred an incredible amount of politeness among the people. The Japanese are never rude. That doesn’t mean that they won’t insist on what they believe is right, but they will do it without any form of insult, avoiding confrontation at all times. A corollary of that is that the Japanese hate to say “no,” even if that’s the correct answer. So if you are asking a question like, “do you speak English?” non-English speakers will inevitably answer, “a little.” That phrase is a good signal to try to find someone else to answer your questions.

English

English (with its Roman alphabet) is considered “modern” and its display throughout the country is pervasive. Thus the facades and signs along most streets are noticeably full of recognizable English, especially apparent when lit up at night. The words, Restaurant, Bar, Hotel, Post Office, etc. and the type of store (Shoe, Jewelry, Cosmetics, etc.) are everywhere. But if you expect someone inside to speak English you may be sadly disappointed. Seeing a store name that sounds like English is no indication that you will be able to communicate with the shopkeeper. For example convenience stores with names such as 7-11, Circle K, Lawson and Family Mart, line shopping streets, but they mostly cater to local trade. Nevertheless employees are always friendly and try to help. Of course English speakers can be found in the tourism industry, where for the most part, personnel in reservation offices in major railroad stations, at airline counters, better hotels and expensive restaurants display a degree of fluency in our language.

I don’t think I’m exaggerating, and I’m not saying that you cannot find natives who understand English if you work hard enough, as it IS taught in schools. The degree of ease in finding English speaking strangers seems to be proportional to the distance you are from major cities like Tokyo, Nagoya, Kyoto and Osaka. When you’re out in the boondocks you may need a great deal of patience if you want to be understood (but it’s far from being impossible).

The same tease regarding English on signs also applies to written material, such as magazines, maps and brochures. Seeing a cover entirely in English does not mean there is another word of that language inside. Fortunately the Japanese tend to use our “Arabic” number system so prices are understandable, as are dates and times. But the typical Japanese rail timetable, even when it has a cover in English and even if it contains easily comprehensible train numbers and times, may well have all the station names displayed only in Japanese characters, making it almost worthless to those not schooled in the national language.

Getting Around

As a result one might think it is very difficult to get around without lots of help. But that is not the case. There’s an exception to every rule and fortunately one relates to geographic signage. In addition to Japanese symbols, place and street names are usually also displayed in the Roman alphabet at railroad and subway/streetcar stations, aboard trains and buses, and at intersections with street signs.

You are probably aware that the Japanese language consists of symbols taken originally from the Chinese, which are called *kanji*. The pronunciation of these words can be converted to corresponding sounds using letters in our alphabet. This is called *romanji* and is used extensively in transportation and street signs, as well as on annunciators in stations and aboard trains. Oddly enough (or perhaps not so surprisingly) there are some Japanese sounds that don't have a direct one-to-one correspondence with our alphabet, and that means that certain place names are spelled differently depending on the translator. Included among them is the neighborhood in Tokyo where we spent our first few nights: it is referred to as both Shinbashi and Shimbashi on different signs, maps and guidebooks. So once you get attuned to these phonetic spellings it becomes easy to get around as long as you have a tourist or transit map and know where you want to go. Even though most taxi drivers do not know English, as long as you can pronounce the name of your destination (address, hotel, etc.), you will be able to get there. Thus if you have any feel for traveling on your own it really isn't difficult to get around cities by public transportation.

As far as intercity travel is concerned, Japan's railroad system has passenger service to almost everywhere you want to go. I'll describe some aspects of the system in more detail in a forthcoming section, but rail fares seem to be very similar to ours. Local and suburban tickets are not very expensive, sort of similar to American rates, but the fares for long distances are not necessarily low, and the high-speed (or "Bullet") trains are quite expensive because of surcharges (also true for the Acela in the U. S.) Thus if you want to travel outside the area from where you arrive, it usually pays to buy a Japan Rail Pass. They come in various versions, like national and individual regions, 7-day, 14-day and 21-day, regular (coach) travel and first class ("green car") travel. These passes are limited to the lines of the Japan Railway Group, which operates the national railway system, including almost all long-distance and intercity trains as well as most suburban services, over both their original 3-foot 6-inch narrow-gauge system and their standard-gauge high-speed rail lines. In general these passes are not good on independent interurban lines or local transit systems.

They are sold only outside of Japan, but easily obtainable from many purveyors (listed on the Japan Rail website) electronically, by telephone and in person. Two of companies selling them are big tour organizations: JTB (Japan Travel Bureau) and Kintetsu. Oddly enough both have offices in Hasbrouck Heights, New Jersey, a short drive from Montclair. We bought 14-day passes from Kintetsu, ordering them by phone and then picking them up in person a few days later (to avoid "Postage and Handling Fees," and also allowing us to pick up various maps, timetables and brochures). Both companies also have offices in midtown Manhattan, as does Japan's National Tourist Bureau, where a great deal of information is available. The price for a 14-day pass is 45,100 yen each, which the seller converts to dollars at the prevailing rate. At the time we bought them, the dollar was quite low against the yen (it's now even worse), running at about 92 yen. Actually all we received were exchange orders, which we turned in at the time we acquired the passes--upon our arrival in Japan.

The pass allows rail reservations to be made free of charge. However it is not good for travel on the *Nozomi*, the fastest of the high-speed trains on the *Shinkansen*. These trains are off limits for pass holders, as ALL riders must pay the full tariff--there are no step-up fares. But there are plenty of other high-speed trains on the line, including the slightly slower *Hikari*

(more stops) and the *Kodama* (all stops) locals. The pass is also good for travel on all other JR Group trains, including those that carry sleeping cars (upon paying space charges). All in all the pass is quite a bargain if you travel a lot.

As far as planning our itinerary, we used the JR hardcopy timetables we received from Kintetsu only for basic reference, as there are several excellent internet sites for transportation schedules. I say “transportation,” as the one I like the best, <http://www.hyperdia.com/en/>, shows all the available routes from A to B, surveying trains, airplanes, buses, subways and even walking. Filters permit users to narrow their searches, so *Nozomi* trains can be excluded from inquiries by rail pass holders, and airlines, private railways and certain types of connections can also be suppressed. Since we desired a bit of flexibility we did not make seat reservations until a day or two before our travels, with the worst case scenario being the possibility of having to sit in unreserved coaches (not a disaster). It was extremely simple.

Hotels

The perception among many Americans is that most hotel rooms in Japan are very expensive and those that are not are very small. That certainly is true for the most part. The prices for rooms in chain hotels like Hiltons and Marriotts are very high, similar to those in Paris, London and New York. And while budget hotels, mainly catering to Japanese tourists and businessmen, charge low prices, they have very tiny rooms. But there is a level between the low and high ends, although limited in availability. And it is not difficult to identify them using search engines that contain reliable reviews and photos, such as TripAdvisor.

But I didn’t know that back in 2005, and we spent five nights in a very small room at the Shinjuku Prince Hotel in Tokyo. Prince is a well-known chain whose prices are not particularly low, but were reasonable for Tokyo. Our room in this air-conditioned glass-and-steel skyscraper was just large enough for our bed and a tall wardrobe. My recollection is that we had to walk sideways to get between the walls and the bed, and there was hardly any surfaces to place our belongings. On the other hand, bathrooms are always large, with ample-sized tubs, sinks and toilets.

A word about Japanese toilets. The country seems to have elevated the technology of this not too trivial aspect of our daily existence. Considering that squat toilets were used almost exclusively until the end of World War II and are still prevalent in other Asian countries, when the Japanese adopted the western toilet they really went whole hog, improving it probably in the same way they updated our automobile manufacturing technology. Here is an edited description from Wikipedia:

The age of the high-tech toilet in Japan started in 1980. As of 2002, almost half of all private homes in Japan have such a toilet, exceeding the number of households with a personal computer. While the toilet looks like a Western-style toilet at first glance, there are numerous additional features—such as blow dryer, seat heating, massage options, water jet adjustments, automatic lid opening, automatic flushing, wireless control panel, room heating and air conditioning for the room—included either as part of the toilet or in the seat. These features

can be accessed by an (often wireless) control panel attached to the seat. . . . Toilet paper can be replaced completely, so some users wipe before washing, wash before wiping, wash only and wipe only—each to his/her taste. Other features may include an automatic lid equipped with a proximity sensor, which opens and closes based on the location of the user. Some play music to relax the user, specifically Mendelssohn. <http://www.youtube.com/watch?v=iwZJrpNPAhU>.

Anyway, we did much better in Kyoto in 2008, using TripAdvisor to find an excellent hotel room for under \$100 per night in a conveniently located area near a subway station. But that was in February. This time it was more difficult, no doubt because we were not the only people traveling during the cherry blossom season and got organized a bit late. While there were plenty of expensive rooms at over \$250 per night, and the few at better prices were out in the boonies, we could not find anything desirable in Kyoto for the dates we needed. Our hotel from 2008 was fully booked for two of the three nights. As a result we decided to stay in a hotel adjacent to the Shin-Osaka station of the *Shinkansen* in the outskirts of Osaka, accessible by rail to both Kyoto and Osaka in under a half hour. The setting wasn't great, but the quality, price and convenience were excellent.

One of the issues in hotels is smoking, and I suspect most non-smoking readers who have traveled extensively have been given the keys to “non-smoking” rooms that smelled of stale tobacco. With the U. S. being on a no-smoking kick for a few decades, the problem here is smaller than in other countries, especially Japan, which has only recently campaigned (reluctantly) against the health hazards of tobacco. Anyway, getting a confirmed reservation for a no smoking room is no guarantee that you will end up in one that doesn't reek of cigarette odors (or has an ashtray). You can always ask the desk clerk for a different room, but that doesn't mean the new one will be any better.

Two hotel chains with decent sized rooms that have reasonable prices are Comfort Inns (affiliated with Choice Hotels) and Toyoko Inns. We ended up using each of those chains twice, for a total of four stays covering five nights. The Toyoko chain is entirely no smoking so there were no problems with odors there. Those hotels reminded me of the Ibis chain in Europe, which is aimed at budget-minded businessmen and tourists, whose rooms are designed to provide a sufficient number of amenities in the smallest amount of space possible and still to be comfortable. Thus like Ibis, they have cookie-cutter rooms, and as a result you know exactly what you're going to get no matter which location you stay in--if you like this concept there will be no annoying surprises.

Outside of Tokyo most hotels include a breakfast buffet in their price. Almost all of our breakfasts were excellent, with both western and Japanese cuisine, including eggs, meat, juices, pastry, cereal and the like. And we got quite used to having Miso soup in the morning. The only mediocre breakfast we had was in one of the Toyoko hotels (proving there is an exception to every rule), which is another reason to read the reviews in TripAdvisor.

In some cases we had to pay the search engine company in full at the time we reserved the room to get the best rates, but in most cases we paid the bill upon checking out. Interestingly, we were never asked to show our credit cards upon checking in so I guess Japanese hotels may not (yet) have trouble with customers who try to abscond without paying their bills.

In Tokyo we made out very well. In searching for medium priced hotels I found one a bit outside the hubs of tourist activity, but only a couple of subway stations from the city center, the Villa Fontaine Shiodome. It was one of the few whose price included a buffet breakfast, but I was a bit concerned since its cost was so low. But the reviews were positive so I went ahead and made the reservation. The hotel was absolutely fabulous, a new skyscraper in a development that included many high-rise office buildings. One was the headquarters of Sumitomo, the trading company that has supplied U. S. rail properties with a great deal of equipment, including the South Shore MUs, some of the Blue Line cars for Los Angeles, commuter cars for MARC in the Washington-Baltimore area and Metra in Chicago, and several others. But best of all was the fact that our large room looked out over JR tracks running into Shimbashi station, including those of the *Shinkansen*. Great photo opportunities, and definitely exploited. And it was easy to find decent food in the area.

Restaurants

In a certain sense there is a parallel between sleeping and eating in Japan. There are many expensive hotel and stand-alone restaurants in tourist areas. But for budget-minded travelers there are the ubiquitous restaurant courts. Why do I say restaurant courts instead of food courts? Because there are buildings--particularly department stores--that have their upper floors filled with different restaurants that front on the common corridors. (Food courts, like those found here that specialize in fast food and snacks, are located in the same buildings, but usually at street level or one flight up or down.) These restaurants are almost always popular priced--with each specializing in a different style of cuisine. Japanese foods include sushi, tempura, specialty noodles (ramen, soba, udon) and Katsei (fried pork), among others. The most popular "foreign" restaurants are Korean (Yakiniku-ya), Chinese (many serving slightly Nipponized Chinese dishes) and Italian (try eating sauce-drenched spaghetti with chopsticks). Even if serving personnel do not speak English, ordering is not a problem. Most of these restaurants have plastic models or pictures of the dishes just outside. You can signal the waiter or waitress to accompany you to the window and then just point to what you want.

We enjoyed our meals very much, choosing restaurants that had "no smoking" sections, although some smoke would invariably drift over. We tended not to eat beef, as steaks are quite expensive. In general we spent about \$18 to \$25 per person for dinner, which is not much different from what we pay in local Japanese restaurants in the New York suburbs (and much lower than the chic Japanese bistros in Manhattan). Tipping is not prevalent in Japan, so our dinner checks automatically came with an 18 to 20 percent discount. [Also taxi drivers don't expect tips.]

Money

I think of Japanese prices by taking off the last 2 digits of the amount, so 2000 Yen is \$20. On this most recent trip the dollar had sunk to such a low level that I had to add 10 percent (2000 Yen becoming \$22) to figure out how much I was paying. And now the situation is even worse, so it's about 20 percent. Like most advanced European countries (and Canada) coins are used to represent the equivalent of 1 to 5 dollars (100 to 500 Yen). Vending machines, which are everywhere, also take notes, but give change only in coin. You may buy almost anything, from railroad tickets to snacks (cans of creamed corn are very popular), to drinks (including beer, juice, soda, coffee and tea) to ice cream from the machines. Many are located on street corners (but these don't vend railroad tickets).

This sounds very user-friendly--and it is--except for ATMs. They are quite abundant, but the huge majority do not accept "foreign" credit, debit and ATM cards (despite displaying instructions in English), so are virtually useless for tourists. We found that out on a cold, snowy Saturday night upon our arrival at the Kyoto railroad station in 2008 (you may read the details in my February, 2008 trip report, available on request). To make a long story short I finally got some Yen at a 7-11 store a few blocks from the station. In general ATMs at convenience stores accept American cards, but those at major railroad stations do not. The ones at Narita airport did accept our cards. This is not as much a hardship as it sounds, especially if you use credit cards for hotel and restaurant bills, as we do. Mastercard and Visa are widely accepted for purchases throughout the country, and we had no problems on that score.

RAILS IN JAPAN

I don't think I need to confess that I'm a railfan. I like anything with steel wheels that runs on steel rails. And to tell the truth, to a certain extent this includes any kind of fixed guideway, such as monorails and certain kinds of people movers. If you think about it, I've defined a very broad interest, which encompasses facets as diverse as airport transportation, freight trains, mountain railways, mining operations, hanging cable cars and even ski lifts, in addition to the more obvious passenger trains, subways and streetcars. But in this age of specialization and information overload, we have to direct our efforts to the specific topics in which we are most interested, as our own resources are limited--especially with regard to time. Thus I have to admit I'm most attracted to urban rail systems, particularly streetcar and light rail lines, but also do not want to give short shrift to heavy Metros and long-distance and intercity rail. .

With that in mind it is clear that books (and books and more books) could be written about the railways in Japan (and they have--in Japanese). But for this section of my report I'll keep my dissertation to a minimum, and describe only items that I found especially interesting--in the hope that this is consistent with the desires of the reader.

I've spent a great deal of vacation time in Switzerland and found that the concentration of rail activity in that mountainous part of the world is absolutely amazing. The Swiss have a rail-based public transportation system with trains and light

railways almost everywhere--and all operated with a precision and degree of maintenance that approaches perfection. As it turns out Japan does Switzerland one better. It has all the positive attributes of Switzerland, but it is much bigger. The trains are just as clean, just as comfortable, just as punctual, just as frequent, just as fast (or even faster)--but there are many more of them, with incredibly high concentrations in many places, particularly metropolitan areas. And that manifests itself into much more railfan opportunities to choose from: too many, perhaps.

As a result, unless time is endless, one has to choose carefully among what seems like an infinite number of options. My decision was to create an itinerary that would allow visits to a further 11 cities where streetcars are operated, leaving only 2 more for a future trip. I would sacrifice a detailed study of Japan's high-speed rail network and much of its multitudinous interurban and subway systems, but still ride what I could of these during the execution of the plan.

A Little About Japan's Rail System

There are many sources of information about Japan's railways. Because of my specific interest in the lighter types of rail transportation--as mentioned above--I concentrated much of my research on a series of 3 volumes, *Electric Railways of Japan*, written by 4 Americans: Leroy Demery, Ralph Forty, Ray DeGroot and Wally Higgins. These volumes, written in 1983, 1985 and 1997 respectively, cover all the non-JR Group railways (interurbans subways, etc.) in the nation. (Much of the roster information herein comes from these publications.) I was also fortunate in having access to a series of articles and monographs by the late Gordon Thompson, who spent a great amount of time in Japan and rode a huge number of rail operations. Being a transportation professional and a railfan, Gordon knew how to both evaluate and enjoy the rail lines, and was excellent at describing and putting them in perspective for American readers. In addition I should mention *Japan by Rail*, also written by the same authors, which contains a great many helpful hints (although I didn't have a copy at the time of my earlier trips).

The literature contains many references to the relatively new term, "Third Sector" railways, distinguishing them from the JR Group (first sector) and the private interurban lines (second sector). But for rail enthusiasts like me, I believe there is little value to knowing in which category to place a specific line. Instead, for this document, I will divide Japanese railways into two parts, the JR Group (the national railways system), and other lines. The JR Group, successor to Japanese National Railways, can be split up further, into the *Shinkansen* (standard-gauge high-speed "bullet" trains) and the conventional network, while the "other" lines can be divided into interurbans, subways and streetcars. I'm using the term, **interurban**, to describe ALL non-JR operations that are not urban subway systems or streetcars, no matter whether they are privately-owned (second sector) or owned by local/regional governmental agencies, possibly jointly with private organizations (third sector). And I'm using the term, **subways**, to denote heavy urban Metro lines, as that usage is common in Japan.

Most of the railways are electric and almost all trains are multiple-unit. Freight trains and some long distance trains, especially those with sleeping cars, are powered by locomotives (although I'm told that there are also some MU sleeping

cars). The vast majority of diesel passenger trains are self-propelled as well. Except for most streetcar lines, trains load from high-level platforms.

There are a number of aspects regarding rail operation in Japan that I consider notable. To a certain degree these are common to both JR and the interurbans. Not all are necessarily unique to Japan, but are practiced there to an enormous degree, which impresses me very much. On my first visit I was immediately struck by the fact that all the rail personnel I saw were dressed in crisp clean blue uniforms and wore white gloves. Train operators acknowledge all signals by pointing to them (I'll go so far to call it saluting). They salute opposing trains and even point at their timesheets at timepoints. When going on duty they bow to their train before entering the cab. This discipline certainly supports what I would characterize as an almost military-like precision in Japanese Rail operations.

Also especially notable is the operation of a large number of service patterns along busy double-track lines, allowing the mixing of fast express trains with those serving many more stations. The English translation of the service designations used by the Japanese include many terms common to past and present U. S. practice, including (from slow to fast): local, rapid, [semi] express, [ordinary] express and limited [express]. But I've also seen others like rapid-limited.

The Japanese clearly understand that in order to maintain the frequencies needed to meet passenger demand on lines that have a limited number of tracks, fast trains must be able to pass slower ones. Thus at various stations the right-of-way widens, usually to four tracks. Slower trains wait at their platform for the faster ones to pass on the center tracks. Important stations have a pair of island platforms serving all four tracks, allowing across-the-platform transfers between fast and slow trains. A lower-cost variant (which I didn't see on the *Shinkansen*) has 3 tracks at certain stations, with the center rails signaled for use by passing trains in either direction. It is an incredibly efficient manner of utilizing resources, but is only effective as long as timekeeping is accurate. Thus many timepoints are given in minutes and seconds. For example several interurbans in the Kanto (Tokyo) and Kansai (Kyoto/Osaka) areas, operate as many as 4 trains with different stopping patterns every 10 or 15 minutes during base periods.

Another feature that I found worthy of comment is the queuing of passengers waiting for intercity trains. I didn't see any mad scrambles to board (excepting commuter runs). Because of the huge amount of rolling stock, there is a wide variety of equipment stopping at platforms, many very busy and crowded. As a result the location of the doors on successive trains can vary substantially. Thus thick lines are painted on platforms indicating exactly where passengers should line up to enter specific coach numbers. Various colors are used, each defining the positions for different styles of rolling stock. So how does a passenger with a reservation in "Coach 4" know at which of the spots marked '4' to wait for his train? The answer was a revelation, which I discovered from observation and experience. The color of the data displayed on the electronic annunciator boards located along each platform matches the color that passengers should look for when lining up to board. This even holds true for the *Shinkansen*, where a number of generations of rolling stock have operated over the years. Very clever indeed. Talk about color coordination! The data on the annunciators include each train's destination and major stops,

as well as the train number, service classification and departure time, and are displayed alternately in Japanese and English. I was told that the service classification (express, local, etc.) may also be tied into the gates at grade crossings. Knowing whether an approaching train is going to slow down for a stop or race through could help determine when the gates should be lowered.

I don't want to leave the impression that everything is always very orderly and refined on platforms. Commuter trains can be extremely crowded and it is not uncommon to see passengers push aboard (and then be further pressed in by "pushers," who are needed to allow the sliding doors to close). Thus it is not only subway platforms where uniformed, white-gloved pushers are found.

Access to most platforms at major stations is controlled by a bank of gates leading into a central "paid" area. The mechanism is actuated by magnetically-encoded tickets. These are card-sized and display the boarding station, destination station and fare (plus reserved seat information if applicable). For urban and suburban travel the typical ticket displays little more than the purchasing station and the fare, with the actual station of entry then magnetically coded onto it when it is read at the fare gate. The ticket issuing machines for these busy services are usually clustered together under a huge map that shows the fare from that point to each station. Unfortunately, in many cases the station stops are displayed only in *kanji*, so I had to ask a station employee (there are always plenty around) to tell me the fare to my destination. Actually I could always have purchased a minimum fare ticket and used an add-fare machine to get through the exit barrier, but I preferred to avoid that. While the fare machines give change, you must start by depositing money into the slots (coins/bills). Then the machines display all the fare amounts from that station up to the amount deposited. At that point you may press buttons indicating how many tickets you want (one is the default) and finally press a button corresponding to the fare desired. It's quite simple and quick once you get the hang of it.

Personnel are stationed at the barrier to let passholders and those with other kinds of fare instruments enter. Access to *Shinkansen* platforms at major stations usually involve going through a second fare control, to turn away those who have not purchased the necessary extra-fare tickets. The same turnstiles are also used to exit from the paid area, insuring that passengers are not riding beyond the validity of their tickets. However, there is no assumption of wrong-doing when a ticket is rejected. "Add-fare" machines in the paid area allow passengers to increase the value of their tickets to the amount needed to exit (like BART). Thus for normal-fare services, like subways, interurbans and commuter trains (where on-board personnel do not check tickets), for all practical purposes such networks are "closed systems," giving railfans without passes the opportunity to ride at will. When they decide leave, they just pay the computed fare at add-fare machines. I found that when transferring from the trains of one company to another, more times than not I had to go through an exit turnstile followed by an entry gate, but there also were certain places where my passage was unimpeded.

An important feature of the Japanese Rail system is called Reciprocal Running. This can be defined as trains of one company using the rails of another. It's a pretty simple concept and has existed in many places in the U. S., for example the

New Haven Railroad running over the New York Central to Grand Central Terminal. In fact it is still used by South Shore Line trains running over Metra Electric tracks between Kensington and Randolph Street (Millennium) in Chicago. What makes this concept notable in Japan is the size and scope of its implementation.

In addition to their regular equipment most subway lines in Japan have trains from interurban companies running through their tunnels, providing a one-seat ride to downtown for riders coming from suburban areas. Tokyo is a good example, with 10 of its 13 subway lines hosting trains of other companies, including JR, running through from one or both ends. This practice also exists on other subway systems, and is an important part of the planning process for new lines. According to information supplied by Gordon Thompson, in the 1990s there were 56 examples of reciprocal running and that number was going to increase (which it has). As a result most suburban railway networks are completely integrated with corresponding urban networks, thereby providing seamless trips for most of its passengers.

Operations are very much similar to that of the former Chicago, North Shore & Milwaukee and Chicago, Aurora & Elgin over the tracks of the CTA/CRT, except these are mostly underground rather than elevated. And like Chicago, where “L” trains ran over interurban-owned tracks to places like Skokie and Bellwood/Westchester, in Japan reciprocal running also works both ways, where trains of both companies can run over each other’s tracks. In certain cases subway and interurban companies pool their equipment so subway cars can be found operating far into suburbia while some interurban cars operate totally within the confines of the subway. Most through interurban trains make the exact same stops as subway trains and thus are transparent to passengers traveling locally within the tunnels. In other instances (like on the CNS&M and CA&E) interurban cars skip certain stations, with annunciators, similar to those found in the Paris RER, indicating which stops the next train will make. It is rare that extra fares are charged on reciprocal services, as the interurbans’ reserved-seat luxury express trains tend to operate from stub-end terminals (an exception is noted in the narrative section of this report).

As a result the Tokyo subway system, whose network was constructed mainly after 1959, contains trackage of several gauges, corresponding to those of the earlier-built interurbans that now feed into various lines, with 1067-mm (JR), 1372-mm (streetcar) and 1435-mm (Std.) gauges. Multi-gauge track does not exist in the subway, but probably can be found elsewhere. Reciprocal running is also employed outside subway systems, between various private railway (interurban) lines, within the JR Group, and between the JR and private railways. This results in a “win-win” situation for both the passengers and the railroads, as the net outcome is more one-seat rides and faster journeys, along with less terminal switching and fewer equipment layovers.

JR Group

The Japan Railway Group is a set of 9 companies, privatized entities spun off from the Japanese National Railways when it was broken up in 1987--ostensibly because the government characterized it as an inefficient overstaffed bureaucracy whose horrendously large subsidies were becoming a major drain on the country’s fiscal health. Reorganized with two support

organizations and a nationwide freight operation, its 6 other components are regional passenger service providers, covering specific geographic portions of Japan. JR Hokkaido, JR Shikoku and JR Kyushu operate the former JNR lines on the islands corresponding to their names, while the other three, JR East, JR Central and JR West, cover Japan's main island, Honshu. With few exceptions their territories are geographically compact: JR East operates the railways in Tokyo and to the north and east. JR Central covers the territory from the western end of Tokyo's commuter shed to Nagoya, while JR West continues beyond there, through Kyoto, Osaka and Hiroshima. It should be noted however, that JR Central operates the entire Tokyo-Osaka *Shinkansen*. The three companies sharing Honshu are profitable enterprises, but financial success is still evading those on the other islands, which not so coincidentally have little in the way of high-speed rail at this time. The different corporate identities are transparent to most riders, as many trains operate over more than one JR Group company. Most American tourists with Japan Rail Passes heading for attractions in places like Kyoto and Osaka don't know (and probably don't care) that their ride from Narita Airport to Tokyo is on JR East and their *Shinkansen* trip is over JR Central. And if they use suburban trains to get to their final destination they ride on JR West.

The High-Speed Lines

The well-known "Bullet Trains" were conceived in the 1950s, when capacity on JR's multi-tracked narrow gauge lines between Tokyo and Osaka was insufficient to meet growing demand. The standard-gauge (1435 mm.) *Shinkansen* (which translates to "New Trunk Line"), and first called the New Tokaido Line, opened in 1964, running at speeds of 130 mph. Now, with improvements in technology, trains reach 186 mph (300 kph) over a network that has undergone significant expansion, and is being developed further. During the next decade the introduction of new rolling stock will result in the achievement of 200 mph speeds. Current schedules on the original, heaviest portion of the system call for 16-car trains to operate every 6 minutes during peak periods (7.5 minutes off-peak). Three levels of service operate on that line: *Nozomi* (super express--few stops), *Hikari* (express--major stops/skip stop) and *Kodama* (local--all stops). Fares are expensive, but the typical *Nozomi* running the entire length of the route averages 146 mph. The *Nozomi* on the portion between Tokyo and Osaka (345 miles), make 5 stops and average 139 mph, while the *Kodama*, with 16 stations between the same points, comes in at 87 mph--not that bad, considering these trains wait at stations for expresses to pass! On this line the first class (green cars) have 2-and-2 seating, while coach has 3-and-2. All seats face forward, and at terminals trains are cleaned and serviced quickly, with the seats reversing automatically at the press of a button. All trains have a small number of cars in which smoking is permitted. Green cars are entirely reserved, but there are some coaches on each train that have unreserved seats--first come, first served. The faster the train, the more reserved coaches in the consist.

With respect to other *Shinkansen* corridors, unreserved coaches on the bi-level cars used by JR-East have 3-and-3 seating, while reserved coaches on JR-West are outfitted with 2-and-2 seats. Thus there is a wide variation in equipment for railfans interested in high-speed rail (HSR) to sample and photograph.

Tickets are examined and cancelled by uniformed train personnel, much in the traditional way of American trains (and unlike the current Amtrak practice of collecting tickets on the platform before passengers board). Company personnel on the *Shinkansen* bow upon entering a coach (true on other trains as well). Spit and polish is the rule. Catering in the Tokai, the Tokyo-Osaka corridor, consists of rolling carts with attendants selling soft drinks, snacks and sandwiches. Vending machines are also available in vestibules.

High tolls for automobiles, high gasoline prices, high air fares, and frequent efficient rail service insure the success of the "Bullet trains." It would be hard to imagine how the masses could be moved without the railways, but then I look at the New Jersey Turnpike and Garden State Parkway, and think how few of my neighbors really know how much more comfortable and less stressful their lives would be if they had access to a good rail system.

The JR Group Conventional Railway System

The JR national railway system, with a track gauge of 3 feet-6 inches (1,067 mm) covers virtually all of the inhabitable portions of the country. Most of the lines are electrified, but in less dense areas diesel trains are operated. The vast majority of electrification was undertaken after World War II using 1,500-volt DC catenary, but 20 kV AC was utilized on some of the later projects. I suspect, but don't know for sure, that JR companies operate dual-voltage MUs on some routes. Each line is identified by name and is assigned a color (or a pair of colors) on maps. The colors are also reflected in the livery applied to each line's rolling stock (nowadays mostly with stripes, since a large proportion of the fleet is made of stainless steel and aluminum). There are many long-distance and intercity trains, operating in corridors not having *Shinkansen* service. Except for overnight trains with sleeping cars, self-propelled MU cars are the norm. They come in all kinds of configurations, from luxurious cars with wide 2-and-2 reclining seats (used on many, named long-distance services and on the Narita Express), to commuter cars with all longitudinal seating and lots of room for standees. Some of the commuter trains that go into exurban areas have a combination of longitudinal and transverse seats.

Special express trains that operate over long distances, which have accommodations similar to the *Shinkansen*, usually have bodies outfitted with stylized, modernistic-looking ends. Otherwise the stainless-steel MU cars are somewhat boxy looking (think of the Japanese-built Broad Street subway cars in Philadelphia), although the newest rolling stock has a little more character, with either slanted or rounded ends. Trains of older non-stainless cars were still in use during my visits.

With the advent of the *Shinkansen*, through service with conventional trains in the Tokai corridor was discontinued, but the lines remain in service for local and commuter travel. For example, one can still ride regular JR trains from Tokyo to Osaka, but it would take from 8 to 10 hours (compared to 3 hours on a *Hikari*), and would involve changing 5 times (if even slower locals were not used).

But to me the most interesting of the narrow-gauge operations are those in and around Japan's major cities. Multi-track rights-of-way carry frequent trains through multi-track stations with lots of flying and burrowing junctions. The activity and short headways are especially notable when watching from overpasses (or hotel rooms along the tracks--we were very fortunate that we had such rooms on our two visits to Tokyo). It's one train after another, and sometimes as many as 3 or 4 on parallel tracks at the same time. In a sense these operations should be described in the interurban section below, as many private lines have the same characteristics as JR suburban services, and can be just as intensive.

Interurbans

If there weren't any streetcars and subways in Japan, it would still be an extremely worthwhile place for urban and light railway enthusiasts to visit because of the extensive systems of Interurbans. All of them are now electric, and tend to have an early history similar to those in the United States. Some were city streetcar lines that were extended far afield while others were country trolleys and even light steam railways that connected rural areas with regional population centers. Their initial rolling stock resembled many American streetcars and interurbans, with a large number equipped with trolley poles (many for double wire like Cincinnati). Some companies became extremely successful and built large department stores (which eventually morphed into chains), exploiting the high passenger volume at their city terminals. The value of these companies increased and many are now conglomerates, owning hotels, ball teams, TV stations and the like, with some perhaps conceptually based on the amusement parks and resorts initially used to generate passenger traffic. In many cities the companies placed their urban street trackage underground or abandoned it in favor of municipally-owned subway lines.

Unlike the U. S., where even high-volume lines like the Chicago, North Shore & Milwaukee and the Chicago, Aurora & Elgin were doomed for political reasons, tax policy and escalating costs (with little ability to raise funds for investment), these companies still prosper. A large number of them, particularly in the Tokyo, Nagoya, Kyoto and Osaka areas, provide a quality of rail service on a par with the JR Group's conventional lines, and offer strong competition (usually with lower fares). As previously mentioned, reciprocal running now allows many of the lines to distribute passengers throughout cities.

To get to this level they did not exploit the railroad for immediate profits, but invested in it for the long term. As a result they've created a robust array of frequent services, operating over multi-tracked rights-of-way, similar to the JR. However, it should be mentioned that the seeds of their expansion occurred before the explosion of automobile transportation, which was about two decades later in Japan (late 1960s) than in the U. S., and came with high gasoline prices.

Other interurbans languished and were later abandoned, while some of those remaining are marginal, but still operate. Such lines don't offer the range of services of the bigger companies, but have a niche, such as carrying school children, serving resorts or bringing commuters to regional centers.

From a network and operations outlook, the interurbans are extremely interesting to ride and study, especially the larger systems. But for the most part their rolling stock is not unusual, being similar to equipment used on subway lines and by JR on its busy routes. While these lines may have started with American-style interurban cars, the busy ones migrated to become more like mainline railways with high-level platforms and multiple-unit-type railcars equipped with pantographs. [Think of the development of the South Shore Line's rolling stock.]

But part of the appeal of these interurbans is that each is a separate entity and therefore, unlike the JR Group, may have unique attributes. This is manifested in some cases by fast, extra-fare express trains with attractive and luxurious equipment. On my 2005 trip, I rode one of the "Romance" trains on the Odakyu Railway, which has front-window cab-like viewing seats with the operator in a cabin above (much like the Super Panorama on the Montreux-Oberland-Bernoise in Switzerland). We would ride this service again on this trip, as well as a similar operation near Nagoya.

A few interurbans have retained their streetcar-like features, so I'll characterize those as Light Rail lines. These may run shorter trains and run partly on street trackage. Like the United States (and everywhere else), there is a continuum of electric railway characteristics, and attempts to place every line into a specific category is certain to result in disputes and a lack of a consensus (just like our old arguments over whether the Philadelphia & Western was a railroad, interurban, rapid transit or streetcar system, or new ones over whether the River Line in southern New Jersey is light rail--since it cannot operate in subway tunnels (because it burns fossil fuel) and whether the rolling stock has the capability of competing with auto traffic when operating on streets.*

Many of these interurbans have retained some of their earlier rolling stock, creating operable historic collections, which are attractions in their own right. Others travel over very scenic routes, along rocky seashores or pass through mountainous areas. But again, when time is limited you have to make choices, and mine was to concentrate on tramways.

Subways

Much has been said earlier about subways, and Japan's are a very important component in moving the population of large cities. Like others throughout the world, they tend to carry very large numbers of people. The huge majority of their track is underground, although some rise to the surface near yards and their junctions with interurban lines. This allows railfans to easily photograph the rolling stock. Ten cities in Japan have subways. Tokyo has two separate companies (like New York City once had). One of the more unusual subways is in Kobe, wherein only the trains of various competing interurban lines operate, with all stopping at every station. Thus the Kobe Rapid Railway is an enterprise with no rolling stock! (Kobe also has a "regular" municipal subway.) Also, as mentioned earlier, many of the interurbans have built their own underground

* The speed of certain American LRT lines in streetscapes is kept artificially low for perceived "safety reasons."

tunnels with typical subway stations, but since I don't want to put these lines into two categories, I'll leave them as interurbans.

Some cities have small subway systems with only 1 or 2 lines, while others, like Tokyo, have complex networks. Tokyo's rapid transit system is officially the fifth largest in the world, at 175 miles, but it could easily be the longest if you include the net distances over which the subway cars travel due to reciprocal running. Tokyo's system is the second busiest in the world--after Moscow's--with about 2.6 billion passengers annually.

The huge majority of subway lines are traditional steel wheel-on-steel rail operations, although rubber tire and monorail technology (some fully automated), have been used for a number of the newer enterprises. These fixed guideway routes are generally called "New Transit" lines and some are incorporated into the subway networks of certain cities. I rode a few of these in my travels, and am ambivalent about them, although they do work and some carry large numbers of passengers--especially a few of the monorail lines. It would be interesting to know their cost and revenue structure.

Streetcars and Light Rail

Keeping to American (and Japanese) nomenclature, I'm using the word "streetcar" rather than "tram." Cities with streetcar lines are relatively few in number and the size of their networks is usually small. They vary in characteristics just like the other forms of electric railways, although most have large amounts of street running with low level platforms. Fare collection is usually under the eye of the operator, and the lines tend to have relatively high service frequencies. Some have small amounts of single track. There are no trolley subways. All cars are double-ended and most are air-conditioned.

I suspect that the reasons some lines still exist correspond to what many railfans believe should have kept a larger number of streetcar routes running in the U. S., but didn't. I am referring to the need for more passenger carrying power than buses in situations where insufficient funds or patronage could not justify digging a subway. Clearly there were some cities in Japan where officials decided that buses could do the job, while others with similar characteristics stayed with streetcars on their heaviest line(s) instead of sacrificing ridership for consistency and dogma. [The abandonment of the Gifu system in 2005 (a week before I arrived in Japan for the first time) may be an exception.]

Here is an annotated geographic list (north to south) of the areas with streetcar/light rail systems. An asterisk (*) means they were visited on this trip and are described in the narrative.

Sapporo (haven't been there yet)
 Hakodate (haven't been there yet)
 *Toyama (2 separate operations)
 *Takaoka
 *Fukui
 *Tokyo (3 operations in the metropolitan area, all previously visited)
 Toyohashi
 *Kyoto (visited both systems previously, but only 1 of the 2 systems was ridden on this trip)
 *Osaka (visited before)
 *Okayama
 *Kitakyushu
 *Hiroshima
 *Nagasaki
 *Kumamoto
 *Kagoshima
 *Kochi
 *Matsuyama

It should be noted that now I have only two systems left to visit, and only one of those previously covered was omitted from this trip (Toyohashi).

Fare collection is worth mentioning. With a few exceptions the systems charge flat fares, using one-man cars with Pay-As-You-Leave revenue collection. But some cars operate with conductors, while certain very long lines are divided into zones. Two devices are key elements in transit fare collection--and they are present on both streetcars and buses: the operator's console and, when zone fares are charged, a large electronic board, visible to all passengers. The console usually contains a fare box and a change machine that accepts bills and coins. This feature enables passengers to drop exact amounts (in coin) into the fare box as they exit. Since PAYL is the rule, passengers can use the change machine anytime prior to alighting. At stops the operator swivels around and observes the fares being deposited*. There is some station fare collection at busy off-street terminals and junction points. And many of the new large multi-section low-floor articulated cars in Hiroshima have conductors stationed at doors collecting fares from passengers as they exit (fortunately they operate in flat-fare territory). In addition, many of these fare devices have a location where Smart Cards may be tapped. The operator will also acknowledge printed passes, thereby accommodating a full range of all fare instruments.

* In certain cases this is now very difficult because of the advent of new low-floor cars with driving positions far from the passenger compartment.

Zone fares are handled in a very clever manner. At stations passengers receive paper “checks” indicating in which zone they boarded, either from a machine on the platform or one on the car (which is probably updated by the operator or by a GPS system). A large electronic board, positioned behind the operator in full view of the passengers, displays the fares to the next stop from every previous zone. Thus if there are 6 zones, and they are numbered in ascending sequence starting with one, the electronic display shows “1” and the appropriate fare to the next stop on the first line. After the car stops at the first station in zone 2 a line prefixed with a ‘2’ is added below the first one and the fare next to the “1” is changed appropriately. And so it goes until the end of the line, where (in this example) 6 lines are displayed with varying fares. (If the terminal is the only stop in the last zone then only 5 lines need to be displayed). This is reversed in the other direction with the zone numbers descending. As a result riders are always informed about the proper fare, even if they don’t understand Japanese. Upon alighting riders show the operator the zone check and deposit it, along with the correct amount of money (coins only), into the fare box. Some systems have day tickets, which must be displayed to the operator upon exiting.

For the most part, streetcar management has been very conservative with regard to rolling stock. Although some organizations looked at PCC cars, they continued to order traditional equipment (like Ottawa after World War II). Cars are rarely purchased in large numbers at one time, as worn-out equipment tends to be replaced piecemeal a few at a time, moderating the need for large capital outlays. This cost-saving approach could not be undertaken if not for the high degree of expert maintenance performed on the rolling stock (as you know, ancient cars can be operated almost indefinitely as long as parts can be fabricated). With mainly longitudinal seating, passenger amenities are mainly measured by the softness of the upholstery. Nevertheless almost every system now has some low-floor cars. This was probably brought about by new government-imposed accessibility standards. With only 1 or 2 on their rosters, many of the companies may still be evaluating them, while others have clearly accepted the technology. Some, but not all, of these cars are 100-percent low floor, with most of the others having their entire passenger carrying area at curb level. It struck me a bit odd that the huge majority of low-floor cars built in Japan so far have been exported to the U. S. and are running in places like Seattle, New Jersey, Santa Clara and Phoenix.