

Chapter 4 – Caption Translations (Kato Japan N Gauge 50th Anniversary Book)

Fig.4-1: The view of Narihira-bashi station of Tobu Railway from a bridge recorded in 1927 when Isezaki line was electrified. A large yard for freight trains was located in the right unseen part of the photo. A bridge over the railway allowed young Yuji Kato to overlook steam locomotives working in the station. (Photo owned by Yoshinari Hanaue)

Fig.4-2: Yuji Kato won prizes of outstanding technology and of fine work in the contest of model railroading held in The Museum of Transportation on Oct. 1949. Models of a JNR electric train and “Romance car” of Odakyu Electric Railway in HO-gauge (1/80, 16.5mm in Japan) were selected for the technology award and honorable mention, respectively.

Fig.4-3: The first advertisement of “Kato Kinzoku” (Kato Metalworking in English) was printed in “Tetsudou Mokei Shumi” (Hobby of Model Railroading published in Japan), No.14, July, 1949. The magazine is the earliest one for model railroading which continues today in Japan and is abbreviated simply as TMS. (Cooperated by Kigei Publishing)

Fig.4-4: The advertisement depicting the structure of a pivot bearing printed in TMS, No.47, July, 1952. (Cooperated by Kigei Publishing)

Fig.4-5: To popularize the performance of trucks with pivot bearings, samples of metal trucks were sold. At the same time, samples of trucks made of thick paper were delivered in exchange for several postage stamps. TMS, No.35, Aug., 1951. (Cooperated by Kigei Publishing)

Fig.4-6: A Bettendorf truck in HO-scale manufactured by Kato Kinzoku around the year 1950. Through the use of operating coil springs, the truck bolster could move down with the application of hand pressure.

Fig.4-7: Due to an increase in transactions with Japanese model manufacturers at the time, Kato Kinzoku had no choice but to cease direct transactions with users. TMS, No.51, Nov., 1952. (Cooperated by Kigei Publishing)

Fig.4-8: The brass models of an ALCO PA-1 and PB-1 in HO-scale handmade by Yuji Kato in about 1951. The details are given in Section 4.2, Chapter 4. (Owned by Eiichi Nukina)

Fig.4-9: The prewar commuter electric car MOHA43 in HO-gauge handmade by Yuji Kato. To realize a smooth acceleration and deceleration, an original fluid coupling device with rotating blades was introduced. TMS, No.70, June, 1954. (Cooperated by Kigei Publishing)

Fig.4-10: The first office and factory of the “Sekisui Kinzoku Metal Engraving Factory” was established in 1957. The office was located in Sekiguchi-Suido-cho, Bunkyo-ku, Tokyo, and its southward entrance faced the track of streetcar No.15, operated by Tokyo prefecture.

Fig.4-11: Examples of brass parts fabricated by drop forging in the 1950s and 1960s. Sekisui Kinzoku supplied such parts to Japanese railroad model manufacturers. The burrs around the edges of parts were removed in the later process of press working.

Fig.4-12: The first announcement of N-gauge production by Sekisui Kizoku was released in the beginning of 1965. It clarified the standards of “N-gauge” in Japan as 1/150 in scale and 9mm in track gauge. The production of N-scale models for the U.S. and continental prototypes at 1/160 scale was already planned, with the actual production being realized by the end of 1967. In Japan, the terminology of “9mm” had long been used instead of “N-gauge” according to a suggestion by Kiyoyama, the editor-in-chief of TMS, to avoid confusion with narrow gauge models of larger scales using the 9mm track. TMS, No.199, Jan., 1965. (Cooperated by Kigei Publishing)

Fig.4-13: The trademark of Sekisui Kinzoku/ KATO has been used since 1965. The design was created by Masao Hagiwara, a famous industrial designer and also the first editor-in-chief of the Japanese prototype magazine “Railway Fan”.

Fig.4-14: Photo from the head office of Sekisui Kinzoku/ KATO in May, 2015. The JNR C50, the first product of Sekisui Kinzoku, was returned to the hands of Yuji Kato 50 years after its production; hands that created the foundation of Japanese N-gauge models.

Fig.4-15: Well-proportioned models of PA-1(M) and PB-1(T) handmade by Yuji Kato just after World War II, when he was young. The models were prepared especially for the occupying US army soldiers. (Owned by Eiichi Nukina)

Fig.4-16: The shape of the front is precisely reproduced through the combination of pressed parts.

Fig.4-17: A three-axle truck with an arch-shaped equalizer characterized by realistic bolster springs.

Fig.4-18: “KATO” engraved on the bolster of the truck.

Fig.4-19: Many fine surface details are reproduced on the end of the body.

Fig.4-20: Roof details are created by the application of small parts.

Fig.4-21: Lines engraved by a stylus, observed on a gear box for a motorized locomotive, are evidence of a handmade model. An unusual thick brass plate is used for the skirt at the front of the locomotive.

Fig.4-22: The model was sold with a wooden box in those days. The name “OMEGA CENTRAL MODEL R.R. GINZA TOKYO JAPAN” is etched on a metal plate in addition to “TENSHODO” as a seller of Yuji Kato’s handmade models.

Fig.4-23: The picture shows the JNR EF70 produced in the 1970s. Many points such as the expression of details, the structure of the drive unit, and the color of body are different from those in models produced later. The technological quality of the old model, which was designed using hand drawings and produced by manually operated machinery, is not so high compared to more recent models. However, the old model reproduces appropriately the impression of the prototype and furthermore provides us warm feeling not derived from the recent models. The model runs with stability though it has not been serviced for a long time.

Table 3-1: Progresses before 1965 and in the first period from 1965 to 1974.

Fig.4-24: The office of Sekisui Kinzoku, which was moved to Nishi-Ochiai, Shinjyuku-ku from Sekiguchi-Suido-cho, Bunkyo-ku in 1959 after a disastrous flood, doubles as a factory of N-gauge production. After the first N-gauge model was born in this building, a few additional factories were constructed around the location with the design of increasing production capacity, thus the systems of production in these early days was established. Today, the head office of Sekisui Kinzoku/ KATO and Hobby Center KATO are located in the same place, with a new head office being constructed in 2014.

Fig.4-25: Models in the first period from 1965 to 1974. They fascinate us with a simplicity not observed in recent models. Reflecting the market situation for N-gauge and the limits of production capacity, the manufacturing of new items was not so frequent compared to that of later periods. To enhance the degree of recognition and the popularization of N-gauge, various categories of prototypes were selected for new models, i.e., a steam locomotive C50, followed by Series 103 electric cars and an electric locomotive EF70 from 1965 to 1967. In the last stage of this period, a symptom of popularization was seen after the production of the most famous and popular steam locomotives, the C62 and D51 with a variation of 20 Series passenger cars in addition to C11 and Series 20 diesel cars.

Table 3-2: Progress in the second period from 1975 to 1984.

Fig.4-26: Models in the second period from 1975 to 1984. Starting with Series KIHA82 diesel cars, models of many famous JNR and popular limited-express and express trains were released. The huge demand of Series 24 “Blue train” sleeping cars pulled by the EF65 1000 direct-current electric locomotive exceeded the capacity of production at that time. In the early stage of this period, the design of the paper insert was changed from the old two color design to a new one with multiple colors distinguishing the category of models. In those days, the item numbers were still given by three digits, as this was before the change to four digits reflecting the increase in the number of products.

Fig.4-27: *** Increased variation of JNR star trains – Electric and diesel trains dedicated for the limited-express and the express operations– *** At the same time of the “Boom of blue trains” in the end of the 1970s, the demand for models of the various star trains increased. The major items among these were the models of the limited-express trains with a frequent operation service. The trains were referred to as “L-Tokkyu”, a word formed from the L from “Limited” and “Tokkyu” meaning limited-express in Japanese. In this period, the most popular trains had models produced using the reliable structures of the body and the drive unit which were already established in 1975 during the development of JNR Series KIHA82 diesel cars (extreme right of upper photo). Series 181 direct-current electric cars (extreme left of the photo), whose prototype had been developed from the Series 151, were an early electric train for limited-express operation in Japan. The prototypes of limited-express electric cars evolved to the dual-current Series 485 (left of center) and the dual-current Series 583 for sleeper cars (right of center). Models of express trains such as the Series 153 (extreme left in lower photo) and Series 165 (left of center) direct-current electric cars, Series 457 dual-current electric cars (right of center), and Series KIHA58 diesel cars (extreme right of photo) were also released. Models for most JNR representative trains in those days were produced during this decade, and their color variations were also released.

Fig.4-28: *** Years of great progress – A new challenge by Shinkansen electric train – *** A New Tokaido line was constructed in 1964 as “Tokaido Shinkansen” from Tokyo to Shin-Osaka, which was extended as “Sanyo Shinkansen” to Hakata in 1975. Only Series 0 alternative-current Shinkansen trains were operated in those days. When new lines of “Tohoku-Jyoetsu Shinkansen” were constructed in 1987, a new Series 200 alternative-current Shinkansen was developed featuring electric cars with snow-resistant structures and equipment. The front style is similar to the Series 0 but with a longer nose, and the color band around of the windows on the side walls of ivory body was changed from dark blue to dark green. The Series 200 model was released prior to the Series 0, a reversal from the prototype development. Compared to the recent Shinkansen trains whose front styles were developed using aerodynamic simulation and wind tunnel experimentation, the simple and pretty front styles of Series 0 and Series 200 have gained popularity today despite being retired. Also, in the world of N-gauge the models of Series 0 and

Series 200 Shinkansen trains provided the fundamentals for the model design of new Shinkansen trains.

Fig.4-29: *** Challenge for a new genre of N-gauge – Production of model trains for prototypes in private railways – *** Until the transition from JNR to JR in 1987, JNR trains were operated across all regions of Japan, while trains of private railways were operated in limited individual areas. As a consequence, the demand of JNR models exceeded that of private rail ways, and N-gauge model production had been concentrated on JNR prototypes with the expectation of a large number of products to be sold in the market. However, there were many unique trains in private railways that people found fascinating, and the production of N-gauge models for the latest Keikyū Corporation Series 800 and Hankyū Railway Series 6300 electric cars was attempted as assembly kits. For the Keikyū Series 800, the fine details of parts for underfloor equipment were reproduced thanks to the advantage of assembly kit design. For the Hankyū Series 6300, ready-to-run models were released in addition to the kits. Subsequently, the Seibu Railway model E851, the first F-class, i.e. six driving axles, electric locomotive among private railways, was produced. These models became pioneers leading a wide range of N-gauge trains in private railways today. In Japan, private railways are electrified by direct-current except a part of those succeeded from JR.

Fig.4-30: *** For further popularization of N-gauge – the new world of “Pocket Line” – *** “Pocket Line” is a group of small trains and fairy tale-like structures developed by KATO to appeal to younger users or to provide alternate enjoyment possibilities for existing users in the wake of the increased number of users after the “Boom of blue trains”. Although all “Pocket Line” models were stylized to make them specifically appealing to new model railroaders, they were still accepted by a wide range of users with different degrees of their experience. The models consisted of a B-type small steam locomotive and two-axle passenger cars, a two-axle electric locomotive with a convex body and two-axle freight cars, and small electric trains made to look like street cars. Sets of trains with UNITRACK of a smaller radius and a battery power pack were also prepared. The “Pocket Line” series was also widely accepted by foreign users and has continued production to this day, with increasing color variations and other improvements.

Table 3-3: Progress in the third period from 1985 to 1994.

Fig.4-31: Models in the third period from 1985 to 1994. In the first half of the decade, many models of limited-express trains were produced in response to market demand. Many models of “Joyful trains” with various shapes and color schemes which were born before and after the breakup and privatization of the JNR were manufactured. The production of various prototype models observed during the time of transition from the JNR to JR became a feature of this period.

Fig.4-32: *** The beginning of a new generation – Pioneering diesel trains for limited-express – *** Internal combustion railcars are a category of trains which were established in the later age of railroad history in Japan. It began with railcars with manual and mechanical transmissions and was followed by cars with electric generators and motors. The development of the hydraulic transmission popularized diesel cars for operating local trains to cover express trains. The Series 80 (81), the first diesel cars for limited-express trains, was developed in 1960. The head control car KIH81 had a large bonnet design similar to that of the Series 151 limited-express electric cars which were operating at that time. In the next year, Series 82 was produced as a mass production prototype for Series 80 diesel cars with a head car KIH82 of a different style (cf. extreme right of the upper picture in Fig. 4-27), and a network of limited-express trains began to enlarge its area covering non-electrified lines. Different from the actual situation, N-gauge models of Series 80 diesel cars were released starting with Series 82, followed by the models of Series 81 where the first class diesel car KIRO80 in an original style and a trailer of dining car KISASHI80 were also included in addition to the head car KIH81. In the model of Series 81, improvements of quality were observed, e.g., addition of red lines on the rain gutters.

Fig.4-33: *** Blooming during the transition of generations – “Joyful trains” – *** The “Frano Express” was a train which was constructed by the Hokkaido branch of the JNR in 1986 from Series 80 diesel cars. With a bright and refreshing body color, it was operated towards resort places in summer and towards ski grounds in winter as a “resort train”. In 1987, the name of train was changed to “ANA Big Sneaker” with different stripe colors similar to ANA (All Nippon Airways) aircraft under a collaborative travel campaign with the airline. The N-gauge model of “ANA Big Sneaker” was also available.

Fig.4-34: *** Superior ocean view from windows – “Izukyū Series 2100 – *** Trains on the Izukyū line run along the east coast of the Izu peninsula from Atami to Izukyū-Shimoda by the direct operation on the JR Ito line. The location with its beautiful coast especially in summer is very famous and popular for people living in the Kanto area including Tokyo. To enjoy the view of the ocean landscape, the Series 2100 electric train with arrays of large windows was introduced in 1985 along relevant sightseeing routes. The train was called “Resort 21” with stripes around the windows in different colors of vermillion, and light blue on the body surfaces facing ocean and mountain, respectively. In 1986, the model of “Resort 21” was released. Through the large windows designed for observation from the front of the head car, we as modelers can enjoy seeing the interior of the head car from an outside view. A sticker included in the first production of the train set was the same as that attached to the inner wall of the prototype.

Fig.4-35: *** Beginning of a new century – JR Kyushū Series 787 and others – *** The author felt somehow familiar with the unprecedented front face of the limited-express Series 787 alternative-current electric train

despite viewing the prototype for the first time. The reason immediately became apparent - it resembles the faces of insects or animals. JR Kyushu produced many trains with fascinating and original unique styles. The Series 787 “TSUBAME” (swallow) was the first prototype in this category of trains, which was painted in a so-called gun-metallic color. The popularization of the Series 787 resulted in a group of N-gauge models including limited-express Series 883 “SONIC” and Series 885 “KAMOME” (seagull) electric cars, Kyushu Shinkansen Series 800, and JR Kyushu commuter transportation Series 813 trains.

Table 3-4: Progress in the fourth period from 1995 to 2004.

Fig.4-36: Models in the fourth period from 1995 to 2004. In this decade, the construction of the new factory and the introduction of new production facilities showed a strong influence. There was an increased variety of possible products thanks to this expansion, which resulted in a larger number of product categories than were previously produced. The introduction of CAD system made the exact reproduction of shapes composed of multiple 3D curved surfaces, and therefore the production of models, e.g., Series 500 and Series 700 of Tokaido-Sanyo Shinkansen trains, and limited-express Hokkaido Series KIHA283 became possible.

Fig.4-37: *** The unfading color of fascination – Series 20 limited-express sleeper train – *** Models of Series 20 passenger cars were released in the early stage of Japanese N-gauge history. Series 20 passenger cars continue to attract us today because of their elegant styles compared to the subsequent sleeper cars for limited-express night trains. Reflecting the popularity of Series 20 passenger cars, a series of third-generation models produced by using new molds were released in 1997, 30 years after their first production in 1967. The new models were produced by applying the latest production technologies that had accumulated during past 30 years. Furthermore, new types of cars not produced in the preceding generations were added one by one to the lineup. The models pass on the glorious history of Series 20 passenger cars today. Already 20 years have elapsed since the first release of the improved models in 1997.

Fig.4-38: *** The fascination of power – H-class electric locomotives – *** The H-type electric locomotive has a total of eight driving axles in two separate bodies and is powerful in both reality and in name. The dual-current locomotive EH500 was produced in 1997, followed by the direct-current electric locomotive EH200 in 2001. H-class electric locomotives came again after a long pause following the EH10 which was developed in the era of the JNR. N-gauge models of the EH500 and EH200 were released and the model of EH10, which had been produced since 1981, was renewed by the application of revised structural and fabrication technologies developed for the former two locomotives. These models have only one motor which drives eight axles by using drive shafts spanning the two bodies, a design reflecting the accumulated experience obtained from the model of EH10 in the first generation. As a consequence, the models of EH locomotives are also very powerful.

Fig.4-39: *** Planning as a model maker – KATO trains – *** In the end of 2004, the Saikyo line in the capital region attracted attention because of a wrapping of advertisement on a commuter electric train. A silhouette of a steam locomotive and a Japanese message “The history of Japanese N-gauge was begun by KATO in 1965” were displayed beside the doors, while a sign with the KATO logo was attached on the front of the train. The project was aimed at the popularization and diffusion of N-gauge model railroading through new venues rather than usual advertising channels. The Saikyo line train was selected for this trial because the stainless body has stripes of deep green that resembled the corporate color of KATO, and furthermore as a manufacturer deeply tied to railroad culture, it was desired that the relevant train keep its natural beauty alongside the advertisement. A model of the “KATO train” was released as a special limited edition item among the large variety of models of Series 205 commuter electric trains.

Fig.4-40: *** Birth of a new generation – JNR 9600 steam locomotive – *** Type 9600 locomotives in JNR were produced throughout the entire Taisho period (1912-1926). For manufacturing during Meiji and Taisho periods, steam locomotive names did not include alphabetic character relating the number of drive axles. The Type 9600 locomotive was operated until the end of steam locomotive on active service in 1976, and was recognized as one of the highest performing and most easy-to-use locomotives produced in Japan. The Type 9600 as a N-gauge model falls into the category between the early steam locomotive models and today’s model with coreless motors and improved drive units. The model Type 9600 realized the true-to-scale dimensions of the prototype by employing a very small motor. This allowed a large empty space in the cab, where the details around the fuel hatch were reproduced. The design was quite different from that of early models where a large motor occupied the entire inner volume of the cab. The model Type 9600 established the fundamentals for the design of steam locomotives produced today. There are many requests for different variations of Type 9600 reflecting the variety of the prototype.

Table 3-5 Progress in the fifth period from 2005 to 2015.

Fig.4-41: Models in the fifth period from 2005 to 2015. Variations of models not produced in the past were released. In particular the development of steam locomotives such as the JNR C62 and C56, and of small diesel and electric locomotives such as the JNR DD16 and ED16, respectively, highlighted the increase in the production capacity and the progress of production technologies. On the one hand, models of prototypes with historical value were released in addition to models of the current prototypes. Furthermore, models of previously manufactured prototypes were renewed with current technologies, such as the JNR Series 485 and Series 583 direct-current electric cars for limited-express trains and the JNR EF81 dual-current electric locomotive and D51 steam locomotive, which were released during this period as second generation models. In the foreign market, the number of products sold under

the KATO brand name was increased.

Fig.4-42: * Commuter electric trains reflecting the transition of age – From Series 103 to Series E233 – *****
 The history of N-gauge commuter trains began with the Series 103 released in the early stage of the first period mentioned previously. The Series 103 trains were the latest commuter electric cars based off of the previous Series 101 prototypes, which were the first high-performance commuter electric cars operated by the JNR since 1963. During the early period of N-gauge when the number of products was quite limited, Sekisui Kinzoku selected the latest prototypes of commuter trains. The policy has proven successful to this day, and models of the latest commuter trains, such as Series 103ATC (Automatic Train Control), Series 201, Series 205, have all been released. As a result, the history of the progress in high-performance commuter trains follows that of their N-gauge models. The picture shows Series E217, E231, E233 and 103 from front to back. The character “E” represents prototype commuter trains which are produced by JR East. Models of Series 103 have long been produced until today. However, their basic parts and construction have not changed in the 50 years since 1966.

Fig.4-43: * Railroad history in Japan as examined through the world of model railroading – C62 “NISEKO”, D51 triple header, C57 “NICHINAN”,and C56 freight train– ***** One of the important roles of model trains is as a record of railroad history at a reduced scale, where the products become a means for us to travel beyond time and space. Our journey to the desired age and place becomes possible when we take the models into our hands. The production of many models with such a potential is an important accomplishment of the fifth period mentioned here. In the beginning of the 1970s, the express passenger train “NISEKO”, pulled by double headers of C62, i.e., the largest steam locomotive for passenger trains in Japan, ran along Hakodate line in Hokkaido with its long, steep slopes. The train occupied the top position of popularity during the period of the “SL (Steam Locomotive) boom” when many amateur cameramen followed the remaining steam trains still in operation. In the Hakubi line across the Chugoku mountains, triple heading D51 locomotives pulled heavy coal freight trains. “NICHINAN” was the last express passenger train pulled by a steam locomotive, with the elegantly proportioned C57 in the lead of the train running over hills in south Kyushu. On the KOUMI line located on the hill of Shinshu resort area, a small steam locomotive C56 with a separated tender pulled ventilated box cars full of summer vegetables. This steam locomotive has the nickname “pony” because of its size and impression. All of these trains are as memorable for many peoples as heroes, portraying famous railroad scenes which can be repeated even now by using finely shaped model trains.

Fig.4-44: * Enjoy the changing of seasons – DD16 Russel snowplow train and MANU34 steam generating car – *****
 The Russel train is a symbol of the railroad fighting against snow in winter. As a prototype, the Russel car attracts attention because of its complicated mechanical equipment, where the snowfall and the subsequent dispatch of the Russel car are indicative of the railroad’s struggle operating trains in the northern areas of Japan. In winter, for trains pulled by electric or diesel locomotives without steam generators, a generator car was inserted between the locomotive and passenger cars to supply steam for their heating. The car, which looks like a short passenger car, has a coal bunker and a water tank at both ends of it. Inside of the car, a horizontal smoke tube boiler is installed like a steam locomotive, and smoke is emitted in a large volume from the chimney located on the roof - sometimes steam could be seen leaking from the safety valves. The specified role and necessary functions of the steam generating car makes its appearance quite irregular. The models were released in the form of train sets, where the DD16 diesel locomotive was combined with the Russel car, and the passenger train pulled by EF13 direct-current electric locomotive was outfitted with a steam generating car.

☒ 4-45: * Recalling vivid memories – Orient Express ‘88 – ***** In autumn of 1988, a train from Paris to Tokyo was planned under the name of the “Orient Express ‘88”. The train arrived at Japan after crossing the Eurasian Continent. After modifying the passenger cars including exchanging their wheels to meet the standards of Japanese Railroads, an event which would long remembered in railroad history began. For about three months the Orient Express run around the entirety of Japan, the beautiful bodies and the luxurious interiors fascinating and deeply impressing the people who had the opportunity to see the train. 20 years after the event, the Orient Express '88 returned as N-gauge models, where the beautiful painted bodies and the luxurious interiors emblematic of the train were reproduced as closely as possible at the smaller scale. Gold colored emblems and lettering were precisely printed onto the glossy paint of the car bodies. The table lamps with their red shades actually operated and the piano installed inside the bar car was painted in a glossy black to precisely reproduce the Orient Express in all of its aspects including its atmosphere and impression. The model Orient Express can serve as the reminder of a cherished memory for the person who obtained it.