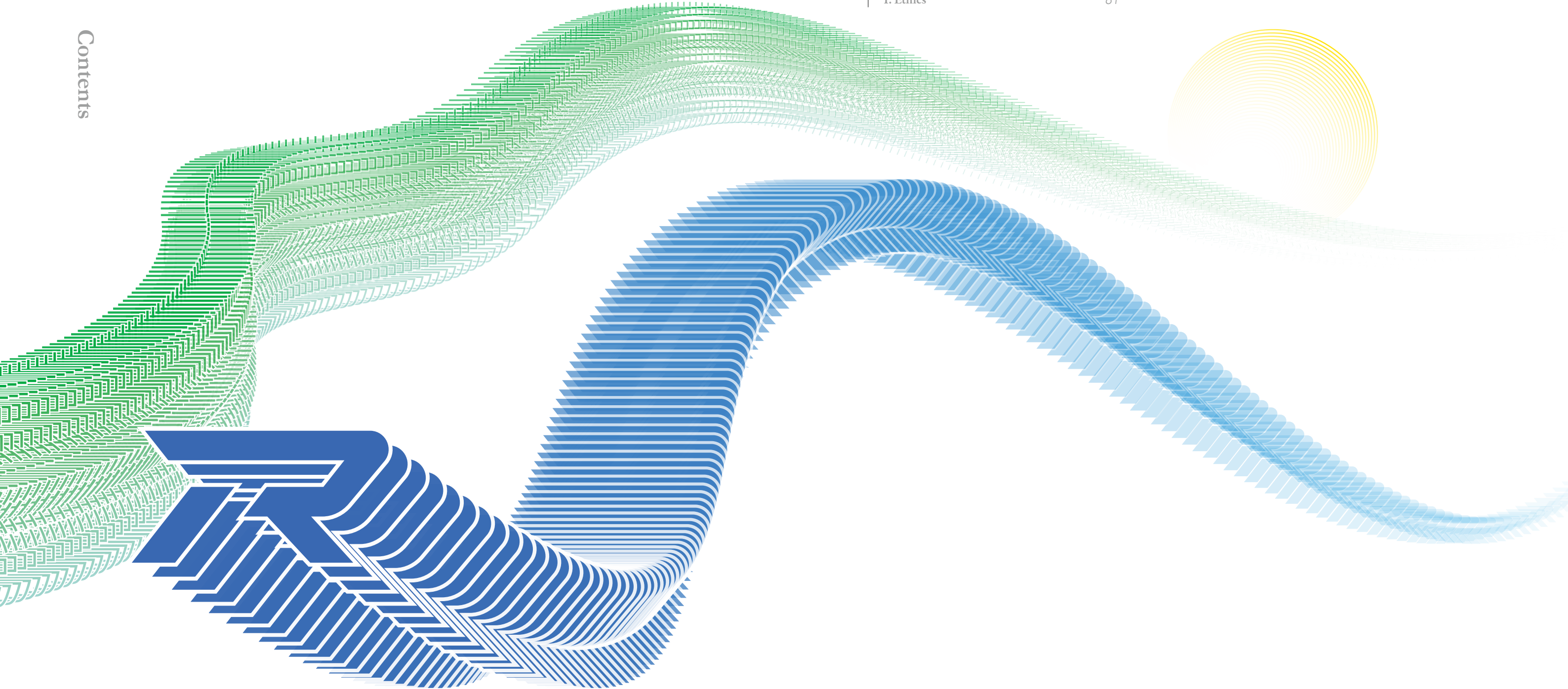


Taiwan Railways
Annual Report 2019

臺灣鐵路年鑑

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Introduction

Introduction

The Taiwan Railways Administration (TRA) is entering its 132nd year. As a crucial link in Taiwan's public transportation, our duty and mission are to provide comprehensive transportation services. As we inherit this centennial institution that is simultaneously traditional and modernized as the only railway that circles all of Taiwan, we aim to continue advancing, revolutionizing, and innovating with the times and generate organizational momentum in our commitment to sustainable development.

Many changes and innovations occurred in 2019. To boost asset vitalization and the operational efficacy of our ancillary business, we established the *Real Estate Development Center* and the *Subsidiary Businesses Operating Center*. These centers actively combine transportation construction and asset development to promote the mutual benefits and prosperity of railway transportation and asset vitalization while expanding the bento market and integrating tourism marketing to promote railway tourism and create added value in the railway economy. Furthermore, the TRA Aesthetic Design Consultation and Review Committee was established in April to introduce aesthetic design in organizing the space in train stations, simplifying logos, beautifying trains, and upgrading train carriages as part of the TRA's metamorphosis and rebirth.

The TRA Fourth-Generation Ticket-Booking System and the TRA e-booking App were released in 2019 to provide the public with environmentally friendly and convenient intelligent ticket-booking services. Transportation needs for the 2019 Taiwan Lantern Festival, Dajia Matsu Holy Pilgrimage, and major holidays were also met successfully. This year, we finished constructing and opened the Taipei Station Union Emergency Operation Center as well as the Chenggong-Zhuifen subbranch railway track-doubling project, track and bridge maintenance, and station facility improvements. The purchase of 520 shuttle trains and 600 intercity trains during the TRA Carriage Purchasing and Replacement Project, the promotion of the security management system, and the establishment of the Security Management Committee are part of our continued dedication to improving the basic infrastructure and operational safety of the railway system to express our appreciation for the public's love and expectations for the TRA.

In 2019, as part of its internationalization and innovation efforts, the TRA began exchanges with railway administrations in the United States, the United Kingdom, Switzerland, and Japan. In addition to ticket exchanges with multiple railway companies in Japan, we established friendly relations with Ichibata Electric Railway Co. and became sister railway companies with Hisatsu Orange Railway Co. and Aoimori Railway and established a partnership with Bungo-Mori Station in Kushu District, Oita Prefecture. Creating mutual benefits through substantive exchanges and by marketing Taiwan's tourism and railway travel are parts of TRA's efforts to increase Taiwan, (R.O.C.)'s visibility on the international stage.

After the derailment of the Puyuma express train in 2018, the TRA established the 1021 Puyuma Care Group to provide care for those



affected by the derailment and coordinate medical services for their family members. In 2019, settlements were reached for 235 passengers and their families, including 10 casualties, 10 passengers with severe injuries, and 215 passengers with moderate injuries. With the assistance of scholars and experts, we completed a comprehensive evaluation of the TRA by compiling 144 safety, operational, and organizational suggestions, and we established the Security Management and Reform Team to regularly evaluate and monitor implementation outcomes. By reforming the TRA through transforming pain and lessons into growth and progress and through comprehensive management, we hope to earn back the public's love and trust.

2019 marks the beginning of the TRA's Aesthetic Renaissance. The TRA held a series of FUTURE-RENAISSANCE activities in late December, including the FUTURE-RENAISSANCE Special Exhibition, Tourist Train Design and Remodeling Experience, and the FUTURE-RENAISSANCE Forum. The activities were well-attended, and the TRA's fresh image received praise across industries. In the past, the TRA established the foundational advantage of Taiwan's transportation by using profound professional technology. Moving forward, we will continue to ensure vehicular safety, improve service quality, and begin an aesthetic reformation from the inside out through the beautification of the railway system. We strive to place ourselves at the core of global trends by using design thinking and aesthetic design as a communication approach to connect diverse cultures and meld tradition with innovation, thereby reinventing a hundred-year-old brand and creating a new image for the TRA. We also aim to plant beautiful elements of all aspects and create positive reviews for 2022, the Year of Railway Tourism in Taiwan, while boosting personnel spirit and improving our corporate image to promote railway sustainability.

Sincerely,

TRA Director General, Cheng-Yuan Chang

A handwritten signature in black ink, reading "張政源" (Cheng-Yuan Chang).

I. Vision



A. Vision and strategic goals

(A) Vision

Create a railway living environment with a high-quality public transportation system and manage our dual-core transport and ancillary businesses in a customer-oriented model.

(B) Strategic goals

1. A safe, rapid, accurate, comfortable, and green transportation environment.
2. Intelligent, humanized, universal, friendly, and informational operational facilities.
3. Improve operational health and a robust financial structure.
4. Develop affiliate businesses and asset vitalization.
5. Features of railway living, culture, and creativity that generate peripheral benefits and added value.
6. Reinforce talent-retention training and international partnerships and exchanges.

B. Business policy

(A) Our business managers

1. Clarifying our position in the transport market, strengthening medium and long-distance intercity transport along the east and west trunks (Taipei-Taitung and Taipei-Kaohsiung) and cross-line transport (Taichung-Hualien), and strengthening local commuter transport along the western trunk.
2. Promoting seamless transport by integrating ticketing, departure information, stations, and operations for intercity buses, bus, mass rapid transport, and Taiwan high-speed rail (THSR) to create diverse, convenient, and high-quality transport services.
3. Implementing universal design and constructing accessible spaces to create a modern and friendly transportation environment.
4. Integrating railway culture to form a cross-industry alliance and reinforcing marketing strategies to attract new customers.
5. Implementing environmental awareness for sustainable development and people-oriented design concepts, developing travel and lifestyle services by effectively using existing assets, and creating transit-oriented developmental benefits by integrating transport infrastructure and land development to promote the TRA as “the connector to a beautiful life.”



6. Promoting asset revitalization and repayment projects and selecting key assets for prioritizing revitalization and development through construction, urban renewal, and superfices to accelerate repayments.
7. Reinforcing employee in-service training and evaluation for risk management and crisis response and strengthening disaster prevention and counterterrorism mechanisms to improve emergency responses and maintain vehicular and passenger safety.
8. Reinforcing internal communication and coordination and establishing harmonious labor-management relations.
9. Gradually adjusting ticket prices to reasonably reflect costs, improve operational health, bolster the financial structure, and implement enterprise management.

(B) Our supply-and-demand collaborators

1. Continuing to purchase and replace operational carriages, simplifying vehicle types, and improving service quality.
2. Conducting the Kaohsiung Railway Workshop relocation project to improve carriage maintenance technologies and quality and ensure vehicular safety and promoting development and operations at the original workshop sites to preserve railway culture and expand affiliate businesses.
3. Reinforcing joint inspections, disaster prevention, and protective measures and bolstering infrastructure as part of the Train Operation Safety Improvement Plan to improve vehicular efficiency, safety, and service quality.
4. Integrating and reconstructing the ticketing and booking system project to improve ticket information processes and efficiency and solve rush-hour bottlenecks, thereby improving customer-relationship management to improve service quality and customer satisfaction.
5. Upgrading TRA electrical services to technological and intelligent systems by using software and hardware upgrades to increase transport efficiency and improving customer convenience by expanding our service scope and improving our service quality.
6. Installing double-track TRA subbranch railways between Chenggong and Zhuifen to provide convenient and rapid railway transport services for residents along the ocean line transferring to the THSR.
7. Implementing transfer shuttle services between THSR Chungwa Station and TRA Tianzhong station to expand the scope of transfer services and joint service quality with external transportation systems.
8. Improving Jiji branch line infrastructure, such as station facilities, track alignment, and slope stability tests, to improve the overall service level of the Jiji line and reinforce customer convenience, safety, and tourism quality.



II. Organization and Operations



A. Organization and staff

During the early stages of Taiwan's Retrocession, the central government commissioned the former Taiwan Provincial Government to administer and manage Taiwan's railways by establishing the Taiwan Railways Management Commission in 1945. In 1948, the TRA was established and became an agency under the Ministry of Transportation and Communications (MOTC) on July 1, 1999. Under the Director General, the Deputy Director General, the Chief Engineer, and the Chief Secretary, the TRA comprises 13 operational units (Transportation Department, Construction Department, Rolling Stock Department, Electrical Engineering Department, Procurement & Storage Department, General Affairs Department, Planning Department, Accounting & Statistics Office, Secretariat, Personnel Office, Civil Service Ethics Office, Occupational Safety & Health Office, and Employees' Training Center), 7 task forces (the Operation Safety Department, the Security Corps, the Real Estate Development , the Subsidiary Businesses Operating Center , the Legal Affairs Unit, the Project Construction Department, the Customer service Center, and the Preparatory Training Center in north, center, south, and east of Taiwan), and 2 affiliate units (the Freight Service Department and Catering Service Department). The TRA has another 43 branch units, including plants, depots, centers, offices, and teams.

The TRA's planned workforce for 2019 was 17,242 employees. By the end of the year, the TRA had 15,451 employees on staff.

TRA Organizational Chart



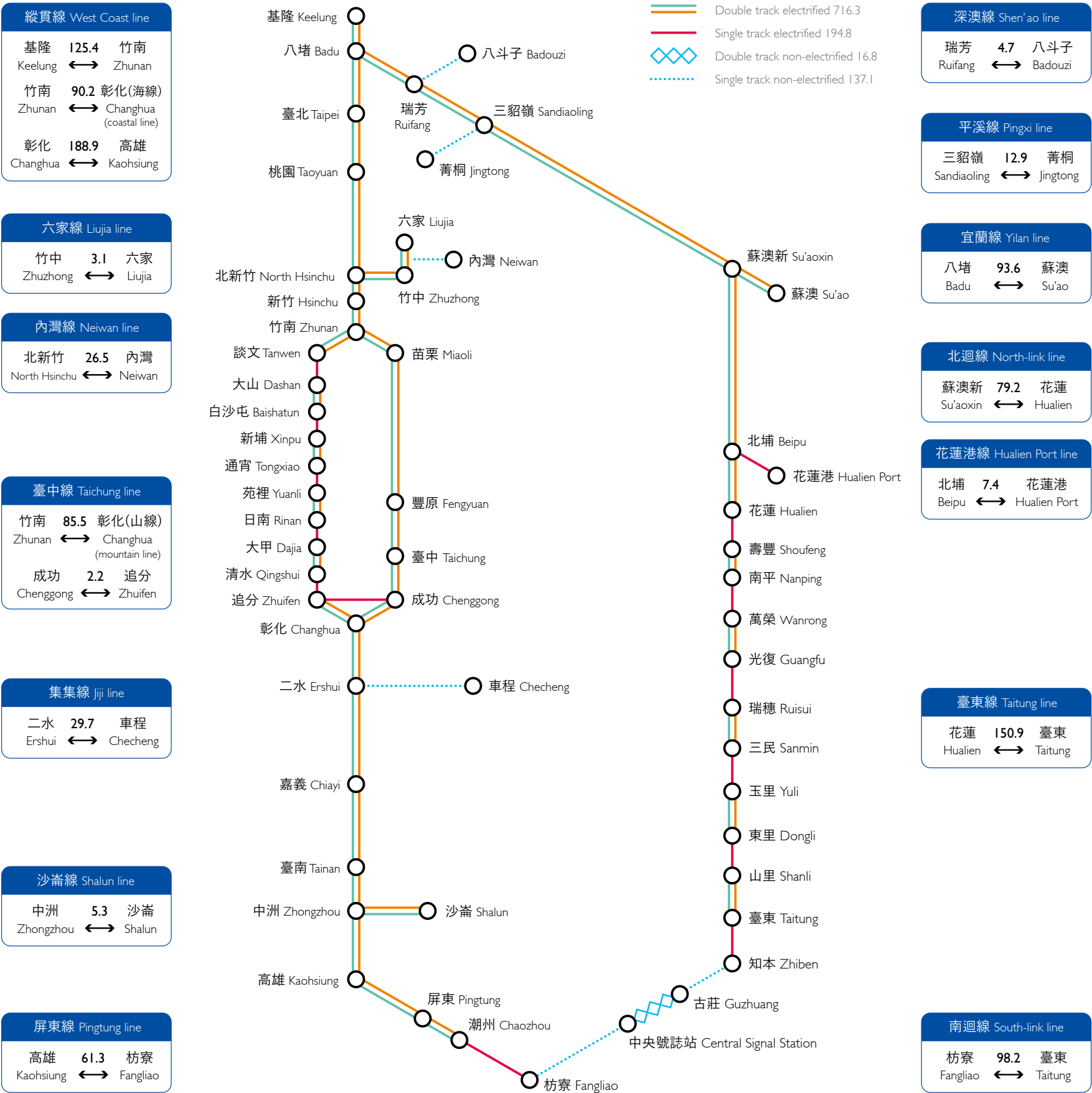
B. Overview of operation facilities

(A) Operational mileage

- 1. Operational distance: 1,065 km; electrified double track: 716.3 km; electrified single track: 194.8 km; nonelectrified double track: 16.8 km; nonelectrified single track: 137.1 km.
- 2. Stations: The TRA has 241 stations in total, including 4 special-class, 28 first-class, and 209 second-class and other stations.
- 3. Railway crossings: The TRA has railway crossings in 420 locations, including 3 Type I, 1 Type II, 370 Type III, 28 semiclosed, 11 manually controlled, and 7 special-use crossings.
- 4. There are 1602 bridges and 135 tunnels.

(B) Number and use efficiency of trains

- 1. Total trains as of the end of 2019
255 locomotives
 - (1) 86 Electric locomotives
 - (2) 64 Push-pull electric locomotives
 - (3) 89 Diesel-electric locomotives
 - (4) 16 Diesel-hydraulic locomotives1,019 electric multiple units (EMUs), 216 tilting trains, 211 diesel passenger trains, 889 passenger trains, and 1,578 freight trains.
- 2. Use efficiency
The availability rate of locomotives this year was 88.25%. The availability rate was 86.19% for electric locomotives, 86.50% for push-pull electric locomotives, 92.73% for diesel-electric locomotives, 84.20% for diesel-hydraulic locomotives, 88.21% for EMUs, 96.16% for tilting trains, and 85.15% for passenger trains.





III. Achievements and Innovative Businesses

Warm Humanism and Aesthetic Living— TRA Aesthetics



(A) Background

In the past, the TRA has established the foundational advantage of Taiwan's transportation by using profound professional technology. As design thinking becomes the core of world trend, moving forward, we will integrate the soft power of design to drive creative thinking on the basis of our technology hard power, demonstrating our capacity in renovation and transformation, using our hundred-year brand value to generate a new look of the TRA.

(B) Key strategies

Upon his appointment to MOTC, Minister Chia-Lung Lin declared that the TRA will improve its service quality and engage in community outreach by introducing aesthetic design. On April 8, 2019, the TRA invited experts in architecture, creative design, railroads, and mass communication to form the TRA Aesthetic Design Consultation and Review Committee.



(C) Substantive outcomes

The TRA Aesthetic Design Consultation and Review Committee was established to (1) promote principles of railway aesthetic design, (2) drive innovative transformation through station, architecture, and rail line aesthetics, carriage aesthetics, Internet and media marketing, and corporate image and product development, (3) reduce the distance between railway constructions and art, and (4) connect diverse cultures and appreciate different perspectives through aesthetic design. The committee is committed to enhancing the TRA's innovative capacity by integrating interdisciplinary skills and design. The TRA held a series of railway aesthetic design forums and exhibits from December 13 to 22, 2019 to display our FUTURE-RENAISSANCE achievements to the public.

(D) Events

December 13–22:
FUTURE-RENAISSANCE Special Exhibition
December 13, morning:

Tourist Train Design and Remodeling Experience
December 13, afternoon:
FUTURE-RENAISSANCE Forum

The FUTURE-RENAISSANCE Special Exhibition opened on December 13 in the lobby of Taipei Main Station. By introducing design soft power to drive innovative thinking, the TRA demonstrated the train design process and exhibited its quiet intercity EMU, shiny orange-and-black tourist train, and smiling air-conditioned commuter EMU. The spatial design of the exhibition was based on a roundhouse to allow the public to experience the vibrations of dynamic train movements. The exhibit also publicized the design elements of two newly purchased train models, one remodeled train model, and new installations. The exhibit received praise across industries, and because of its popularity, it was extended after its original closing on December 15 to December 22 to allow more members of the public to participate in the TRA's aesthetic renaissance movement.



The Tourist Train Design and Remodeling Experience lasted 10 months and involved multiple internal discussions that included team members, designers, engineering units, and aesthetic committee members within the TRA. Through multiparty deliberations, communications, and cooperation, the final results culminated in the first journey on December 13. TRA Director General Cheng-yuan Chang, MOTC Railway Bureau Director General Allen Hu, Taiwan Design Research Institute Chairman Chiyi Chang, World Design Capital 2016 CEO Han Wu, and Breeze Center CSO Michelle Liao engaged in the tourist train experience together. During the journey from Taipei Main Station to Keelung Station, founder of J.C. Architecture Johnny Chiu shared his inspiration for the design and remodeling of the tourist train and shared the outcomes with guests on the train's maiden voyage.



The FUTURE-RENAISSANCE Forum invited designers of three types of trains, railway marketing experts, and major design and aesthetic leaders from different industries. The forum speakers shared the balance point between train design and practicability, accuracy in technology integration and innovative thinking, breaking the established mold in train design, and integrating process transformations to create an all-new tourist train image. This forum capitalized on current design trends—railway aesthetic design concepts and innovative transformations in design marketing—to inspire the forum attendees and exhibit the efforts and achievements of the TRA's reformation. The public's recognition, support, and affirmation of the TRA's efforts and achievements provide momentum for its reformation and ability to connect the public to a better life.

This series of activities was the outcome of aesthetic “design introduction” by the aesthetics committee to exhibit the TRA's innovation reformation and the brand value of this centennial institution while reinventing a new image.





A. Achievements

(A) TRA Fourth-Generation Ticket-Booking System

1. System functions

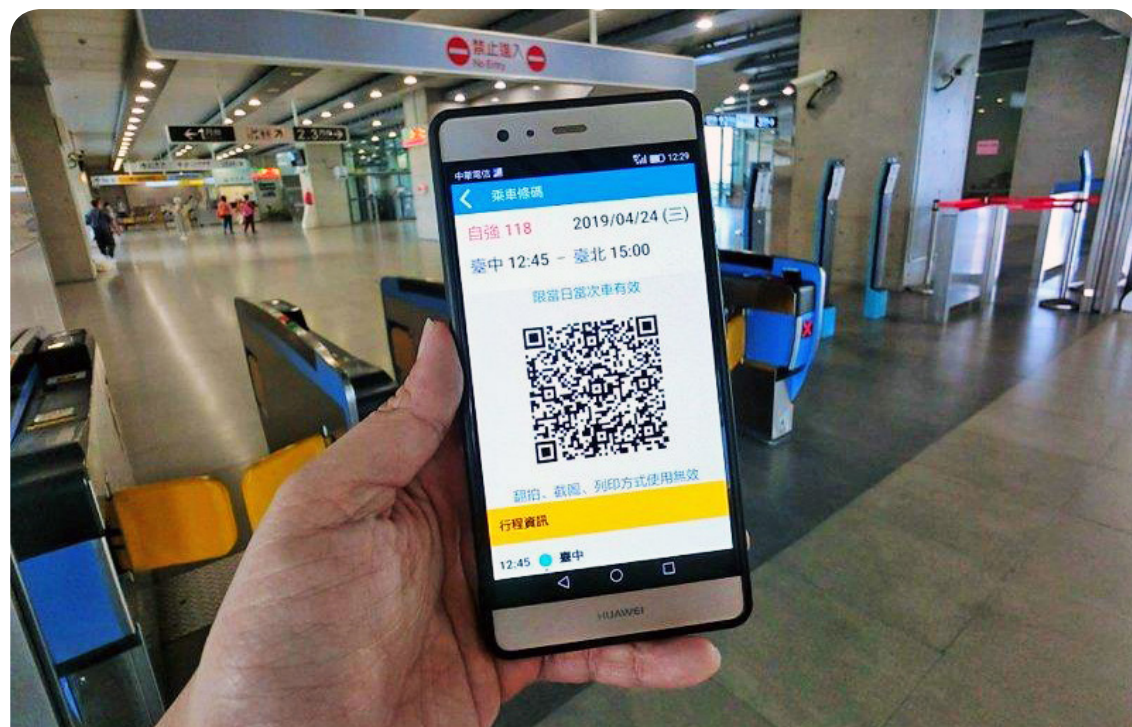
- (1) Optimized booking: integrated schedule inquiry, booking, and payment processes, immediate seat assignment, and passenger seat selection.
- (2) Intelligent booking: automatic seat allocation and increased available seats for purchase.
- (3) Cloud-based services: virtualization technologies that dynamically adjust system resources in response to peak and off-peak throughput differences and surge demands for consecutive holiday bookings.
- (4) Increased revenue: introduction of revenue management, support management decisions to improve overall revenue from train services.
- (5) Fortified antihacking measures: elimination of bot ticket scalping and suppression of false booking demands.

2. System rollout schedule

Group tickets for April 23 were available for booking on February 23, 2019, and stress tests were conducted from March 4 to 15. The system trial run was conducted from March 18 to 29. Individual ticket booking was introduced on April 9. The old system was decommissioned, and the new system was comprehensively released on April 23.

3. Operational efficacy

- (1) Tickets purchased using smart seat assignment accounted for 37% of total sales or approximately 10,000 tickets per day.
- (2) Mobile app services were upgraded to include mobile tickets, which are both environmentally friendly and convenient. After paying online, users can scan the provided QR code to enter and exit platforms as well as refund tickets online.
- (3) Downloads of the new app exceeded 1 million, and nearly 280,000 people download tickets by using the app each month, thereby reducing the operational burden of front-desk staff.
- (4) Within 3 months of the new system rollout, membership increased by 52% (200,000 to 580,000 registered users).
- (5) Train conductors are equipped with personal digital assistants to remain updated on ticket sales, thereby eliminating the need to physically examine each ticket and improving the train experience for passengers.
- (6) TRA and THSR intelligent inquiry functions and app-based THSR booking functions enable convenient booking and transfer arrangements between both rail systems.
- (7) Compared with May to July of the previous year (2018), overall ticket revenue increased by NT\$25 million, with a maximum growth of 3% in a single month.



(B) E-tickets and digital fare payment

The TRA completed the construction of 239 e-ticket stations throughout the island. In addition to reducing ticket purchase time and increasing station entry and exit speeds, this network integrates bus ticket premiums provided by the Directorate General of Highways when transferring at 32 stations along the eastern and western lines. This integrated premium pricing has helped reduce carbon emissions and energy use. Because of its convenience, as many as 430,000 people use digital fares every day, constituting a 4.2% growth compared with 2018. The TRA is now planning to expand digital fare services by combining periodic passes with digital fares to enable passengers to travel through all of Taiwan with only one card.

(C) Convenient and accessible ticket purchasing

1. Convenience stores ticket booking and collecting services

On April 23, 2019, the TRA launched mobile phone e-tickets, which can be used at 239 stations throughout the island. Approximately 12,073 people use the mobile app per day, whereas 22,892 people purchase tickets from convenience stores per day, which was a 9.4% decrease from 25,270 people per day in the previous year.

2. 24-hour online and voice-command booking

Passengers may book train tickets no less than 1 hour before departure and must complete payment no later than 30 minutes before departure. The booking system is available 24 hours per day. In 2019, approximately 14.3 million tickets were claimed after booking.

3. Registered tickets for Hualien and Taitung residents

TRA will continue its program offering registered tickets for Hualien and Taitung residents. Beginning during the 2019 Mid-Autumn Festival holiday, Taiwan citizens whose national identification card numbers begin with U or V and whose registered addresses are in 14 Hualien or Taitung Counties may register tickets for themselves, their spouses, and parents or children. In 2019, 50 trains carried 25,528 passengers. To expand services, priority registered tickets for Hualien and Taitung residents were offered for trains 207, 238, 206, 408, 431, and 405 between Taipei, Hualien, and Taitung.

(D) Sustainable development of tourism businesses

1. Taiwan Railways of Popular Science, 2019

The Taiwan Railways of Popular Science operated from April 29 to May 2, 2019. After departing from Taipei Main Station, the train stopped at participating stations along the railway line, where municipal science teams guided local children, their parents, and tourists through science activities and explorations. These activities allowed the public to personally experience the enjoyment of scientific experiments in the train station or on the train.

2. Midsummer Formosa Train, 2019

The Midsummer Formosa Train is a cruise train comprising five air-conditioned carriages driven by a CT273 steam locomotive that takes passengers back in time on a vintage steam-engine experience through the unparalleled landscapes of Hualien and Taitung. The Midsummer Formosa Train ran on June 29, July 6, and July 13 from Yuli Station to Taitung Station and stopped at featured stations such as Dongli, Chishang, and Shanli stations.

3. Bicycle-friendly trains

In cooperation with energy conservation and carbon-reduction policies and to promote leisure activities, the TRA released environmentally dedicated trains and travel schedules to attract railway and bicycle travelers. In 2019, 141,130 travelers rode our bicycle-friendly trains.

4. TR-PASS

General and student TR-Passes will continue to be released to attract domestic and overseas travelers to railway tourism. Revenue from TR-Pass sales in 2019 are summarized as follows:

TR-PASS	General	Student
Quantity	12,707 passes	4,020 passes
Revenue	NT\$13,799,896	NT\$2,563,547

5. Joint Pass with THSR

To facilitate travel for foreign visitors, whether for business or tourism, the TRA will continue to cooperate with the THSR to release Joint Pass tickets. In 2019, we issued 1,644 passes, totaling NT\$1,280,410 in revenue.

6. Developing railway subline tourism by collaborating with foreign railway companies

To cooperate with the Tourism Bureau and MOTC's efforts to promote railway tourism and commemorate the third year of the TRA's friendship with JR-Shikoku, the TRA released limited-edition JR-Shikoku 3 subline passes. MOTC Political Deputy Minister Yu-Lin Huang and TRA Deputy Director General Jen-tsai Hsu personally distributed the passes at Japan's Matsuyama station; passes were also available to the Japanese public at Matsuyama, Takamatsu, Tokushima, and Kochi Stations as an invitation from Taiwan to Shikoku residents. In return, JR-Shikoku gifted the TRA 200 Matsuyama-Shimonada tickets to invite Taiwan's residents to visit Ehime Prefecture.



Limited JR-Shikoku edition 3 sub line passes

7. Day passes for sublines

Subline tourism was continued to be promoted. Revenue from each subline in 2019 is summarized as follows:

Day passes	Northeast	Pingxi- Shen'ao Line	Neiwan Line	Jiji Line
Quantity	1,357	158,849	5,237	16,487
Revenue	NT\$143,093	NT\$11,456,092	NT\$425,350	NT\$1,231,213

(E) Parenting-child train attached to push-pull Tze-chiang limited express

Twenty carriages were converted into family carriages, and each carriage completes 102 trips per week. In 2019, approximately 66,819 passengers traveled on these carriages.

(F) Upgrading the members' service system

Since the 2011 introduction of members' reward points and matchmaking ticket-booking mechanisms, TRA membership reached 768,284 members in 2019 (750,581 natural 16 persons and 17,703 legal persons), and 53,628 successful matchmaking bookings were made at a success rate of 25.05%.

(G) Taipei-Luodong-Hualien combined railway-highway transport

The TRA has partnered with highway transport providers Capital Bus, Kamalan Bus, Metropolitan Transport, and Kuo-Kuang eBus to provide railway-highway transportation. In 2019, 158,102 passengers used railway-highway transport, with an average of 433 passengers per day.

(H) Chartered trains for groups

To promote railway tourism and provide domestic and overseas travelers with comfortable and convenient travel services, the TRA chartered travel services for 425 tour groups in 2019, totaling 146,452 individuals and NT\$46,226,626 in revenue.

(I) Automated tickets and booking services

To improve the quality of our services and tickets management, the TRA will continue to automate ticketing services.

tickets	Computerized ticketing terminals	Ticket-vending kiosks by train number	Automatic ticket-vending kiosks	Ticket-scanning gates	Ticket-scanning poles	In-train handheld fare adjusters
Stations	191	18	144	68	239	8 (groups)
Quantity	436	42	468	409	770	800

(J) Public restrooms

As of 2019, all 652 restrooms managed by the TRA throughout Taiwan have received an Excellent rating or higher, and Outstanding ratings were awarded to 594 restrooms, which were 102 more than those awarded in 2018 and accounted for 90% of all restrooms. We will continue our efforts to provide clean and comfortable restrooms for public use.

(K) The Fifth Formosa Railroad Bento Festival, 2019

The Formosa Railroad Bento Festival was held on November 1-4, 2019 in the first-floor lobby of Taipei Main Station. This year's event marked the fifth anniversary of the festival, a noteworthy milestone. The 2019 theme was The Beauty of Moving , which appealed to the concepts of inheritance , innovation , and internationalization. In addition to the TRA, 27 members of the railway industries of Japan, Sri Lanka, Switzerland, and France were invited to participate in this exclusive festival, which occurred for the first time at Taipei Main Station, Taiwan's largest train station.

A retro element was added to this year's theme to evoke a sense of nostalgia. Many classic collection items and stories were displayed in the festival's pop-up restaurant and a blue-skinned train. Taiwan's railroad culture and stories will continue to be communicated and magnified through the TRA's preservation efforts and events. The Formosa Railroad Bento Festival will become a key platform for broadcasting railway culture and expanding international exchanges.

Over the past 5 years, the Formosa Railroad Bento Festival has grown in popularity, and its achievements have increased each year. The festival is an opportunity for both Taiwanese people to experience international railway cultures and the TRA brand to internationalize.

(L) New bento varieties

1. To celebrate Children's Day, the TRA designed a child-friendly mini bento to appeal to children and released it with limited availability from March 29 to April 7, 2019. The bento packaging was designed with adorable illustrations and included a set of stickers; children could draw on the packaging or play games with the stickers after eating.
2. To counter appetite loss in summer, the TRA released limited quantities of two bento box varieties, taro and burdock rice as well as ginger and roast pork rice from July 26, 2019.



Children's Day mini bento



Taro and burdock rice



Ginger and roast pork rice

(M) Railway tourism marketing

1. The Neiwan subline was key in 2019. Sanlih E-Television was invited to film a marketing video promoting travel along TRA's sublines. Completed at the end of September, the video was displayed on the Window to the World screen in Taipei Main Station and released on the FUN TRA Facebook page and the TRA sightseeing website.
2. The TRA commissioned a study on the correlation between Taiwan's railway tourism needs and online marketing strategies. The study used on-site filming and interviews with railway tourism figures to research tourist trains, subline travel, themed tours (stations), and railway culture. The videos and interviews were released on social media, digital platforms, and in travel magazines to attract more domestic and overseas travelers and effectively improve the operational performance of railway tourism. The results were then used to draft promotional strategies for TRA tourism.

(N) Railway Economy and Urban Development Forum

The 2019 Railway Economy and Urban Development Forum was held on June 3, 2019, attracting industry leaders, consultants, and local representatives in transportation, construction, real estate, shopping malls, and urban development. Together with registered attendees, more than 500 people participated in the forum and explored the importance of railway economies and their relationship with urban development from the perspectives of *future vision*, *shopping-mall management*, *comprehensive development*, and *urban renewal*. Moreover, to construct a communication platform for railway sectors to lead to mutual prosperity, TRA applied for a permit from the Ministry of the Interior to establish the Taiwan Railway Economy Development Association.



The Fifth Anniversary of the Formosa Railroad Bento Festival.



TRA Director General Cheng-yuan Chang with Japanese photographer Kengo Kobayashi on a tourist train, November 21, 2019.



Railway Economy and Urban Development Forum, 2019.

(O) Improving operational safety

1. TRA and Metrolink exchange seminar

An exchange seminar between TRA and Metrolink, a commuter rail system in Southern California, was held from April 24 to 26, 2019. The event aimed to improve TRA security management and railway technologies by integrating Metrolink's professional knowledge and skills and to create collaborative space between the two agencies. Jerone Hurst and Luis Carrasquero, Metrolink specialists in Positive Train Control and Communication and Signals, were invited to the forum. Doctor Li-han Chen led the discussion on enterprise innovation for public institutions.

2. Security management system

The Security Management System (SMS) Handbook and Declaration of Signing TRA Security Policy were released on the eve of the 132nd Railway Festival, May 31, 2019. This was a historic moment in Taiwan's railway history. An initiation ceremony involving TRA managers was held at the same time to mark the dawn of the SMS age.

3. 2019 Railway Fatigue Management Seminar

To promote the development of risk management for railway fatigue in Taiwan, the TRA and the Taiwan Transportation Safety Board jointly held the 2019 Railway Fatigue Management Seminar on November 15, 2019. Risk management specialists from the United Kingdom were invited to attend the seminar, the themes of which involved managing and responding to railway fatigue, in order to improve the risk management technological development of domestic railway fatigue.

Since the rollout of the new-generation ticket-booking system on April 23, 2019, ticket counters now accept mobile payment methods such as Apple Pay, Samsung Pay, and Google Pay. Other forms of payment will continue to be introduced on the basis of development in electronic payment and customer demands to eliminate the need for cash and achieve the vision of a mobile-payment-based smart nation. Credit card payments in 2018 totaled approximately NT\$3.464 billion. In 2019, 4.75 million credit card and online (TRA website and app) transactions were conducted, and transaction value totaled approximately NT\$3.338 billion. Approximately 690,000 credit card transactions were completed in 22 stations, totaling approximately NT\$1.198 billion. Approximately 27,000 mobile transactions were completed in stations, totaling approximately NT\$9.36 million.

(B) TRA e-booking app

On April 7, 2019, the TRA released its official ticket-booking service app, which offers train schedule inquiry and booking and refund functions. Passengers can search for train schedules and numbers as well as share purchased boarding passes with friends and relatives on their smartphones, thereby eliminating time that would have been spent queuing at ticket counters. Passengers can board trains by using the generated QR code as their boarding passes. The digitized process is more convenient and environmentally friendly. The app also supports multiple ticket-collection methods, including e-ticketing and convenience store, post office, will-call, and kiosk pickup. The app also offers real-time TRA updates including train delays for passengers' convenience.

(C) In-train handheld fare-adjustment system and digitized seating management

The new generation of handheld fare-adjustment systems for conductors was released in conjunction with the fourth-generation ticketing system to provide digitized seating management. The handheld fare-adjustment system displays real-time ticket sales and ticket types. Conductors no longer disturb passengers to verify their tickets and can provide appropriate assistance on the basis of the ticket types displayed on the handheld fare adjustor, thereby improving TRA service quality.

B. Innovative businesses

(A) Diverse credit card payment options



TRA and Metrolink exchange seminar

2019 Railway Fatigue Management Seminar



Security management system

(D) Manufacturing China Railway Shanhaiguan Bridge Group 50 kg-N flexible switch tongue rail

On the basis of suggestions from the Hualien Construction Branch, the TRA Construction Department directed the Construction Maintenance Corps (CMC) to manufacture China Railway Shanhaiguan Bridge Group (CRSBG) 50 kg-N flexible switch tongue rails.

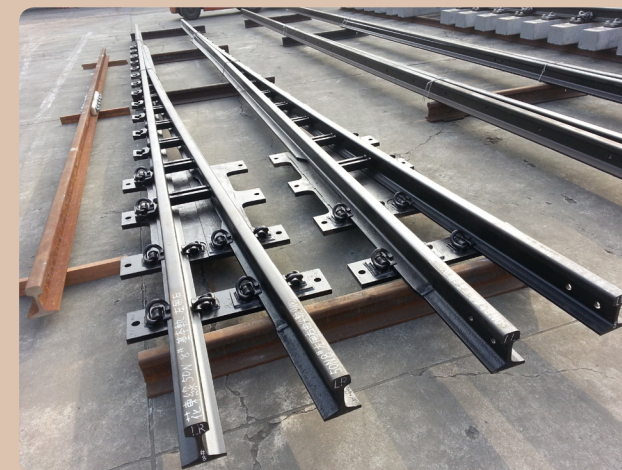
CMC reviewed the CRSBG blueprints and manufacturing method and verified that they had no technological problems. After assessing CMC's machining tools, track sawing was conducted using track saws, 70S rails and 50 kg-N short rails were welded using flash butt welders, switch rails and basic rail bending were performed using rail benders, hole processing was conducted using vertical drilling machines, and the milling of 50 kg-N short track welding was performed using vertical gantry milling. Tread milling, elastic parts milling, and fisheye and oval hole milling were performed using gantry mills, and wheel edge lines, tight lines, and tight lines near the bottom were planed using gantry planers. Finally, assembly personnel assembled the stop bracket and conducted tightness tests for the switch and basic rails.

The material properties and total processing length of the CRSBG switch rail and basic rail are the same as those of previously processed materials. Take switch rail number 8 as an example, its total length was 9,100 mm; therefore, the processing capacity of CMC's current gantry planer, gantry mill, vertical drill, and welding masters can process and manufacture CRSBG switch and basic rails without difficulties.

After receiving this assignment, CMC immediately traveled to Ji'an Station to conduct on-site field research. After confirming the machining size and operational conditions, the machining of the CRSBG 50 kg-N switch rails was initiated. After measuring, sawing, marking, drilling, planning, bending, and milling operations were completed, the methodology, special attentions, and no-go conditions for each step were compiled into standard operating procedures as a reference for future use.

The entire manufacturing process demonstrates that CMC's current personnel and skills are sufficient for manufacturing CRSBG switch and basic rails and are similar to the TRA's current methodology for machining Yamato switch and basic rails. CMC can manufacture backups as required to prevent shortages and provide rails to the Hualien-Taitung branch upon request to avoid long and costly procurement.

A quantitative cost-effectiveness analysis indicated that the 44 sets of CMC's CRSBG switch and basic rails in the Hualien Construction Branch and Taitung Branch has definite economic benefits-- approximately NT\$3.13 million are saved in costs. In addition, by CMC's intergration of current turnout structures, the universality of track materials are thus increases while inventory costs and purchases reduced, this also improve the TRA's skills and efficiency in rail maintenance.



1. On-site investigation at Hualien Ji'an Station to evaluate structures and shapes for machining processes.
2. Switch rail tight line planning with a gantry planer.
3. Completed switch rail tight line and wheel line planning.
4. Rail stops and other removed components transported from the Hualien Construction Branch for reassembly in newly planed switch rails.
5. After assembling the number 8 left-opening rail stops and components, the switch rail and basic rail are assembled and coated with antirust treatment.





IV. 2019 Business Performance



A. Profit and loss analysis

2019 and 2018 Profit and Loss Comparison

Unit: NT\$1000

Item	2019	2018	Compared with 2018
Total revenue	28,648,891	28,340,933	1.09%
Passenger transport revenue	17,770,071	17,853,724	-0.47%
Freight revenue	638,062	645,008	-1.08%
Other revenue	7,676,367	7,443,702	3.13%
Nonbusiness revenue	2,564,391	2,398,499	6.92%
Total expenditure	31,935,432	30,748,573	3.86%
Operational costs	27,026,622	25,926,423	4.24%
Operational expenses	1,283,427	1,309,571	-2.00%
Nonoperational expenses	3,625,383	3,512,579	3.21%
Losses	-3,286,541	-2,407,640	36.50% loss increase

· The 2018 data are approved final accounts, whereas the 2019 data are preliminary final accounts.

Cause analysis

- (A) The TRA's gross revenue in 2019 was NT\$28.649 billion, a \$308-million increase compared with 2018. Other revenue increased by \$233 million primarily because of a \$275-million increase in rental income, and nonbusiness revenue increased by \$166 million primarily because of \$521 million in gains from the paid allocation of land to the Taipei City Government and from exchanging real-estate rights to the A Better Tomorrow development project for disposal of property, plant buildings, and equipment. However, compensation income and miscellaneous income decreased by \$161 million and \$194 million, respectively.
- (B) The TRA's total expenditure in 2019 was NT\$31.935 billion, which was \$1.187 billion more than that in 2018. Employment expenses increased by \$742 million primarily in salary expenses resulting from an expanded workforce and additional hires. Service fees and interest on debt increased by \$227 million and \$191 million, respectively.

B. Passenger and freight transport volumes

Passenger and Freight Transport in the Past 5 Years

Year	Passengers (in thousand persons)	Passenger revenue (in thousand NT\$)	Freight transport (in thousand tons)	Freight revenue (in thousand NT\$)
2015	232,217	18,256,200	10,910	759,726
2016	230,365	18,126,453	9,215	668,099
2017	232,806	18,132,149	7,764	619,530
2018	231,268	17,853,724	7,720	645,008
2019	236,151	17,770,071	7,313	638,062



C. Benefits from affiliate business

(A) Asset development and vitalization

To unify administrative power and increase profit from asset vitalization, business units engaged in real-estate development and vitalization (i.e., the Freight Service Department, the Development Division and Land Rights Division of the Planning Department, as well as part of the rental business of the Catering Service Department) were consolidated into task forces to establish the Real Estate Development Center on March 1, 2019. The center develops subsidiary businesses and increases profits through enterprise management while promoting mutual benefits between transportation and railway assets to achieve railway sustainability.

To encourage private participate in infrastructure, urban renewal, and superficies projects, the TRA has actively promoted land development to improve our affiliate businesses’ operational performance. The TRA will also continue to vitalize assets such as traditional businesses, property, land, signal towers, shopping malls, warehouses, parking lots, advertisements, and filming with the anticipation of increasing revenue and improving our financial position.

Since its establishment in 2019, the Real Estate Development Center has earned approximately \$3.587 billion in business income.

2019 Real Estate Development Center Earnings Unit: NT\$1000

Item	Businesses	Profit (untaxed)
Traditional businesses	Cement, limestone, and gravel	2,662
Real-estate investments	Taipei Main Station Designated Land Development Project of Zone No. T-9	48,552
Licensing income	Private Participation in Infrastructure, shopping malls, real estate, and superficies	687,907
Rentals	Buildings, land, signal towers, shopping malls, travel and service space, machinery, warehouses, parking lots, advertisements, and filming	1,973,011
Disposal of property	Selling fixed assets	855,902
Other	Interest, miscellaneous income	19,039
Total		3,587,073

(B) Subsidiary business operations

1. Expanding railroad bento boxes

The 2019 sales volume for railroad bento boxes was 10,539,706 (daily average of 28,876), and the total revenue was NT\$758,095,885.

2. Developing railroad sightseeing tourism (2-day and 1-night cruise trains)

TRA offers 2-day-1-night (or longer) cruise trains through open bidding, which encourages agencies to engage in and promote rail-travel itineraries. In 2019, 29 trips were completed; the average passenger seat utilization rate was 67.12%, and income totaled NT\$10,272,813 (including tickets, bento boxes, royalties, and in-train merchandise sales).

3. Recruiting professional vendors to operate station stores and improve station image

The Subsidiary Business Operating Center commissioned 7-Eleven, McDonald's, and other professional vendors to operate sales departments in stations throughout Taiwan. As of August 2019, revenue from entrusted operation and use fees totaled NT\$73.84 million.

4. Licensing TRA trademarks and images to increase revenue

In 6 review meetings held in 2019, the Ministry of Economic Affairs approved 150 registered trademarks, and 215 products were authorized to use the trademarks. Revenue from trademark and image licensing (including image-use fees) totaled NT\$2.49 million.

5. Midsummer Formosa Train

The 2019 Midsummer Formosa Train program featured a cruise train comprising six Chu- Kuang air-conditioned carriages driven by a CT273 steam locomotive from Yuli to Taitung Stations. The train stopped at featured stations, such as Fuli, Chishang, and Shanli, on three Saturdays—June 29, July 6, and July 13. The average passenger rate for the three trips was 79.78%, and the total revenue was NT\$1,197,802.

6. Railway products and marketing activities with TRA brand value to promote cultural and creativity industry

In collaboration with holiday and festival activities, the TRA released classic products, such as Railway Festival commemorative wine (1), a Taiwan Governor-General Railways stainless-steel bento box and bag (2), environmentally friendly utensil set (3), a railroad commemorative plate (4), a 2020 calendar, an auspicious stainless-steel straw set, and other Taiwan railway and architectural heritage products. Revenue from 2019 railway product sales (including commissary and restaurant sales) totaled NT\$28.09 million.



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V. Business Operations

Special Report

132 Years of Taiwan Railways: Safe and Happy

To celebrate 132 years of Taiwan's railways, the TRA opened the 2019 Railway Festival Activities on June 1, 2019. Activities included the 2019 Railway Economy and Urban Development Forum, the Eco-Corridor 2.0 Departure for Love press conference coorganized with the Forest Bureau, the CT273 locomotive trip from Su'ao to Jiaoxi as part of the Yilan Line South Branch's 100th Anniversary, and the Taiwan Railways and Architectural Heritage Exhibition coorganized with the Lea Lea Foundation. Celebratory activities were also held at Nangang Station, Taipei Main Station, Taichung Station, Changhua Station, Xinzuoing Station, Kaohsiung Station, Pingtung Station, and Hualien Station that included dynamic music and dance parties as well as serene exhibitions of arts, culture, and railway artifacts.

The Taiwan Railway Festival was scheduled for June 9, which coincided with the Sunday of the consecutive Dragon Boat Festival holiday. To fulfill its Dragon Boat Festival transportation responsibilities, the TRA celebrated the festival in advance on June 5 (Wednesday) at 10:00 AM. Special guest Premier Tseng-chang Su of the Executive Yuan was invited to present awards for those with 40 years of service, friends of Taiwan Railways, and outstanding volunteers. To thank the world for its support after the 1021 Puyuma derailment, Minister of the Ministry of Transportation and Communications, Chia-Lung Lin, unveiled a certificate of appreciation and acknowledgement. TRA Director General Cheng-yuan Chang presented awards for excellence in service to acknowledge personnel who have dedicated their career to the railways. In addition to lively performances, the festival included VIP guests from Europe and the United States, foreign representatives in Taiwan, and representatives from Japanese railway companies who have formed lasting friendships with the TRA.



2019 Railway Economy and Urban Development Forum



Taiwan Railways and Architectural Heritage Exhibition



Yilan Line South Branch (Su'ao-Jiaoxi) 100th Anniversary.



Group photo



Premier presents awards



A. Passenger and freight transportation

(A) Passenger transportation

1. Additional trains in response to fall and winter national tourism programs

In collaboration with expanded fall and winter national tourism programs and projects to increase Hualien–Taitung railway capacity, the TRA implemented 26 additional Tze-Chiang trains from Shulin to Taitung and 176 local express trains from Hualien to Luodong from September 20 to December 22, 2019.

2. Annual schedule adjustment, December 20, 2019

(1) Adjusting Xinzuoqing–Fangliao train schedules

The Xinzuoqing–Fangliao train schedules were adjusted in accordance with the electrification of Chaozhou–Fangliao subline trains. Puyuma and Tze-Chiang operations on the western trunk were extended to Fangliao Station (two operations each).

(2) EMU 500 optimized carriages

The original Xinzuoqing–Pingtung local express trains and Chaozhou–Fangliao diesel multiple unit local trains were combined. In total, 22 local express trains and 8 local trains ran on the Xinzuoqing–Fangliao line, and all used EMU 500 optimized carriages.

(3) Reducing diesel trains on Kaohsiung underground rail lines

The TRA reduced the number of diesel trains running on underground lines in Kaohsiung from 32 to 23 to improve underground air quality.

3. Safe and accurate transportation services

The TRA's punctuality rate for passenger trains in 2019 was 90.97%, which was a 0.81% decrease from 91.78% in 2018. Apart from train equipment malfunctions, train delays were primarily caused by train deceleration at construction sites for the Railway Bureau's electrification and railway improvements and maintenance projects along the southern trunk. In addition, since the 2018 Puyuma derailment, the TRA corrected the automatic train protection remote monitoring system, which contributed to the slight decrease in train punctuality in 2019. In the future, the TRA will remain committed to reinforcing equipment evaluations and maintenance and the timely replacement of old equipment to provide safe and punctual services.

4. Train etiquette movement to improve service quality

TRA implemented its platform boarding-lines program in September 2013 to encourage orderly boarding for local trains, since then, boarding lines have been drawn on the platforms of 84 stations as of 2019. This program will continue to be expanded to other stations to ensure platform orderliness.

(B) Freight transportation

- In collaboration with the Directorate General of Highways, MOTC project to improve the Su'ao and Hualien mountain section of Provincial Highway 9, the TRA operated additional 32 trains to transport soil from January to July 2019 (maximum 1,800 tons per day). A total of 378,000 tons of soil were transported.
- Delivery, testing, acceptance, and payment for batch 4-2 of newly purchased diesel-hydraulic locomotives were completed in 2019; the locomotives were then assigned to Jialu Station to perform shunting work. Delivery and payment for 24 trains were completed in August 2019.
- The 24 newly purchased diesel-hydraulic locomotives were analyzed (in batches of 6, 6, 6, 5, and 1) in terms of reliability (MTBG \geq 1,000 hours), availability (AVtrain \geq 90%), and maintainability (MTTR \leq 3.0 hours) and monthly progress review to ensure that the newly purchased diesel-hydraulic locomotives continue to operate smoothly.

B. Asset development and vitalization

(A) Asset development

To cope with the economic and social changes, the TRA actively combines transportation construction and asset development to maximize the benefits of public construction. The TRA's asset development and affiliated businesses comply with laws and regulations on private participation in infrastructure, urban renewal, and state-owned property. The TRA has collaborated with government railway construction projects, the Executive Yuan's acceleration of urban renewal projects, and regional governments' urban development plans.

Currently, the TRA's land-development projects conducted by promoting private participation in infrastructure, urban renewal, and superficieses have yielded results. From the Taipei Main Station Designated Land Development Contract signing in December 2004 to the Taipei Main Station C1/D1 Land Development Contract signing in December 2019, land-development profits reached NT\$5.637 billion. Moreover, 2019 land development and operational performance was approximately NT\$440.43 million, the details are as follows:

Unit: NT\$1000

Land development approach	Project	2019 revenue (untaxed)	
		Rent	Licensing
Promoting private participation in public construction	Taipei Main Station Designated Land Development Project of Zone No. T-9	61,175	—
	Nangang Station Complex Build–Operate–Transfer (BOT) Project	55,817	95,900
	Songshan Station Complex and Parking Lot BOT Project	55,471	56,041
	Wanhua Station Building BOT Project	42,116	—
	Taichung Station Railway Cultural Park BOT Project	673	—
Superficies	Banqiao Station Designated International Tourism Hotel Construction and Operation Project	15,197	9,874
	Jingxiu Rd., Yuanlin Township, Changhua County superficieses	330	830
	Fuhe section, Zhongzheng District, Taipei City superficieses	1,849	3,300
	Baoqing section, Xinyi District, Taipei City superficieses	4,696	24,200
	Chenggong Section, Zhongzheng District, Taipei City superficieses	2,789	10,175
	Subtotal	240,113	200,320
Total		440,433	

Furthermore, the TRA cooperated with Keelung City Government in 2019 to promote the build, operation, and transfer (BOT) project of the Keelung Station South-Side Parking Lot. The TRA provided the land, and Keelung City Government recruited commercial participants. A three-way commissioned development and administration contract was signed between Keelung City Government, MOTC, and the TRA on September 17, 2019, which marked the TRA's first collaboration with central and local governments to create a benchmark for railway asset vitalization. The TRA signed a cooperative development contract with the Taipei Urban Regeneration Center on September 23, 2019 to launch the Taipei Main Station E1/E2 Corridor Urban Regeneration Project.



Contract-signing ceremony for the Keelung Station South-side Parking Lot BOT project.

During the awards ceremony for the 17th Golden Thumb Awards for Private Participation in Infrastructure Projects on November 8, 2019, the TRA was recognized with a Superior Award as a government agency winner for our Wanhua Station Building BOT project. This project was the first transportation station building under the BOT model and became the benchmark for other transportation station private participation projects.

Projects that TRA continued to drive in 2019 included two private participation in infrustrcture projects, six government-planned urban renewal projects, and four superficies. The details of the 12 projects are as follows:

Promotion of Private participation in Infrustrcture Projects				
		Base area	Special permit duration (years)	Contract signing date
Contracted projects	Taipei Main Station Designated Land Development Project of Zone No. T-9	11,707 m ²	50	93.12.27
	Nangang Station Complex BOT Project	42,610 m ²	50	95.12.11
	Songshan Station Complex and Parking Lot BOT Project	25,564 m ²	52	96.5.15
	Wanhua Station Building BOT Project	20,308 m ²	54	98.3.10
	Taichung Station Railway Cultural Park BOT Project	29,672 m ²	50	107.12.7
	Taipei Main Station C1/D1 Land Development Project	17,497 m ²	—	108.12.17
Planned projects	Changhua Rail Roundhouse Surrounding Area BOT Project	14,148 m ²	15	—
	Keelung Station South-Side Parking Lot BOT Project	14,320 m ²	—	—
Urban renewal constructions (government planned)				
		Base area	Contract signing date	
Contracted projects	Hsinchu Train Station Rear Station District Urban Renewal Project	45,101 m ²	103.2.26	
	Nangang Shunting Yard Urban Renewal Project	54,405 m ²	104.4.2	
	Nangang Type-3 Commercial Offices Urban Renewal Project	26,000 m ²	107.8.13	
Planned projects	Keelung Train Station Urban Renewal Project	28,286 m ²	—	
	Taipei Main Station E1/E2 Corridor Urban Regeneration Project	25,132 m ²	—	
	Heart of Yilan City Urban Renewal Project	19,500 m ²	—	
	Changhua Train Station North District Urban Renewal Project	15,333 m ²	—	
	Yuanlin Station Surrounding Area Urban Renewal Project	18,364 m ²	—	
	Kaohsiung Station Old Dormitory Urban Renewal Project	27,744 m ²	—	

Superficies				
		Base area	Special permit duration (years)	Contract signing date
Contracted projects	Banqiao Station Designated International Tourism Hotel BOT Project	2,653 m ²	50	99.8.23
	Jingxiu Rd., Yuanlin Township, Changhua County Superficies	761 m ²	50	102.7.18
	Baoqing Section, Songshan District, Taipei City Superficies	1,601 m ²	70	103.1.10
	Fuhe Section, Zhongzheng District, Taipei City Superficies	670 m ²	70	104.12.28
	Chenggong Section, Zhongzheng District, Taipei City Superficies	1,068 m ²	70	107.6.21
Planned projects	Andong St. Dormitory Superficies	12,029 m ²	50	—
	Yucheng Section, Nangang District, Taipei City Commercial Superficies	1,774 m ²	50	—
	New Taipei City Shulin Dormitory Superficies	10,127 m ²	50	—
	Hualien City 6th Urban Land Consolidation Hotel Area BOT	24,876 m ²	50	—

(B) Asset vitalization

1. Train station mall and travel service spaces

The TRA commits to vitalizing assets in accordance with the Act for Promotion of Private Participation in Infrastructure Projects by contributing private funds and creativity to turn stations into local commercial hubs that provide comprehensive travel services and connect people with business opportunities. As of the end of 2019, shopping-mall license fees from the four private participation project stations—Nangang, Taipei, Banqiao, and Xinzuoqing—surpassed NT\$367,540,000.

The construction and renovation of two stations were completed in 2019. Xinfeng Station attracted a well-known chain coffee brand to build a station coffee shop in January, providing the station with a new façade. Local specialty stores have provided travelers with a one-stop shop for dining and shopping at Hualien Station since September. Average rental income from the two stations is approximately NT\$13.02 million.

A total of 32 vending locations in 25 stations were available for businesses to bid on and rent. The businesses planned and introduced compound store types based on each 35 station's characteristics. These stores continue to provide the public with convenient and high-quality shopping and dining services. Annual rental income is approximately NT\$241.29 million.

2. Warehouse and cultural assets as creative and cultural tourist attractions

Old warehouses were rented out as part of the development and vitalization of TRA assets. Furthermore, to effectively maintain, manage, and utilize cultural assets—historic sites and buildings—the TRA has partnered with local governments to rebuild the assets as exhibition venues and new arts and cultural landmarks for public leisure. In 2019, 109 venues were rented out, and rental income was NT\$57.82 million.

3. Rental property

Banqiao Station's underground parking lot was originally outsourced to vendors to operate in an operation and transfer approach. Beginning in 2019, the underground parking lot was rented out using a public bidding and two-stage selection process. The successful bidders introduced friendly services; handicapped and priority parking spaces (for pregnant women and for parents with children under 6 years old) were equipped with flashing lights to alert drivers when cars are entering and exiting and to ensure the rights of drivers. Annual rental income from underground parking is approximately NT\$48 million. Furthermore, the Taichung Fuxing Road congregate housing was leased and entrusted to outside management; the annual rental income was approximately NT\$2.97 million.

As of the end of 2019, 696 properties (buildings and land) and 124 parking lots were rented out, and the rental income was approximately NT\$829,730,000.

4. Station advertising space

Under the premise of station aesthetics, TRA will continue to rent out station advertising space. Advertising space includes train carriage advertisements (print, LCD, and carriage wrapping) and station advertisements (print, lightbox, and multimedia).

Advertising space is calculated by stations and rented out in individual stations or combinations of multiple stations. The renting vendor plans the advertisement locations, sizes, and media format to display their advertising creatively.

Taipei Main Station's print and lightbox ads were rented out again in 2019, and annual income exceeded NT\$62.85 million. The combined advertisement income for 2019 exceeded \$118,040,000.

5. Filming location rentals

In conjunction with policies promoting cultural industries, the TRA's assets are vitalized and rented out as filming locations for dramas, films, documentaries, and advertisements. These measures also enhance the TRA's image and vitalize TRA assets. In 2019, 35 filming requests were fulfilled, and rental income exceeded NT\$1.91 million.

6. Signal tower rentals

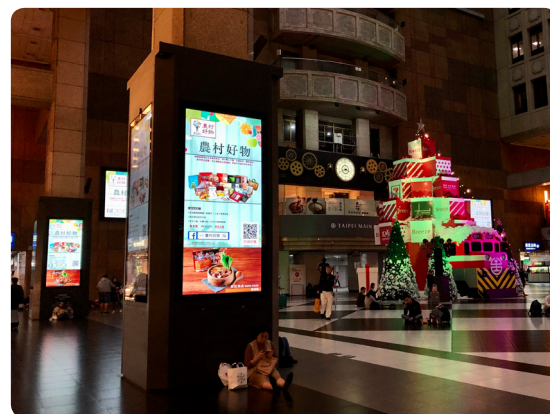
To facilitate travel, improve communication quality, and comply with government telecommunications freedom policies without affecting vehicle safety or vehicle communication quality, the TRA has increased the number of signal towers along its rail lines and opened TRA stations and other properties to telecommunication providers to construct cellular signal towers in. Rental income for 2019 exceeded NT\$29.2 million.



Taichung Fuxing Road congregate housing interior.



Lightbox ads, Multimedia ads



C. Operations management

(A) Operational performance accountability

1. Implement Operational accountability system to appraise financial improvements

As directed by MOTC, the TRA categorizes our losses into attributable and nonattributable losses to fairly assess the operational accountability of operators. Attributable losses include normal losses (e.g., those from service-based routes and small stations), and nonattributable losses include those not attributable to the current operator, such as the pension fund under the old system and interest liabilities. Based on the assessment results, TRA is tasked with implementing measures to diversify income sources, reduce unnecessary expenses, and establish an operational accountability system to assess the results of financial improvements.

2. Achievements

Improvement measures have already yielded preliminary results. Average daily revenue increased from NT\$39.89 million in 2007 to NT\$48.69 million in 2019, and average passenger volume increased from 465,000 to 647,000 passengers in the same period, yielding 39.1% growth. However, disposal of real-estate benefits from paid allocation of land to Taipei City Government and the A Better Tomorrow development project real-estate rights exchange have been less than the resulting increased expenses, which include additional hires, costs of employing new staff, underground construction, electricity costs for renovated stations, interest on debt, and reimbursement of overtime pay from December 23, 2016 to September 30, 2017 in accordance with amendments to the Labor Standards Act. As a result, the TRA's losses in 2019 were NT\$3.287 billion (preliminary), which increased by NT\$879 million compared with 2018 (NT\$2.408 billion, final).

(B) Market trend surveys to consolidate the operation ideal of customer comes first

The 2019 TRA Passengers Attitude Survey was conducted to understand how passengers viewed TRA measures in 2019, assess their level of satisfaction, and collect suggestions for improvement. Overall satisfaction scores were used as a reference for the TRA to review its deficiencies, draft improvement strategies, and improve service quality.





D. Procurements

(A) Procurement statistics

In 2019, 757 procurement projects were executed at a total sum exceeding NT\$31.5 billion. The projects included 295 engineering service procurements, 274 labor service procurements, and 188 property procurements. These procurements also included 102 locomotives, inspection vehicles for high-speed trams, radio devices for traffic control, multifunctional automated ticket kiosks, and materials for 50 kg-N prestressed-concrete switch sleeper rails, steel rails, and head hardened rails. Engineering projects included renovations to the first and second Shuangxi River bridges, modifications to Changhua and Taipei Electrical Branch equipment, early warning and maintenance-management systems, and 96-core fiber optical cable second ring deployment. The TRA also implemented multipayment ticket and boarding systems, electronic interlocking systems, and train information system maintenance throughout the island.

(B) Revisions to procurement regulations to meet regulations and to increase procurement and material management effectiveness

1. Revised division of responsibilities and internal control mechanisms

After reviewing current practices, the TRA increased authorized expenditures to improve procurement efficiency without violating legal ordinances; the new authorized expenditure amounts were publicized in an official memo on March 14, 2019 declaring the revised Procurement Responsibilities and Internal Control Mechanisms.

2. Revised Procurement Appraiser Selection Regulations and Procedure for Reporting Unsatisfactory Vendors

The Procurement Appraiser Selection Regulations, TRA Procurement Base Price Efficiency and Quality Improvement Project, and other base-price forms were revised and declared on March 14, 2019 in response to the TRA's revised Procurement Responsibilities and Internal Control Mechanisms. Furthermore, to comply with legal and practical operation requirements, the Procedure for Reporting Unsatisfactory Vendors and Ad Hoc Meeting Procedures for the Committee on Vendor Qualifications and Product and Service Specification were revised and declared on March 15 and April 19, respectively.

3. Revised Procurement Bidding Rules and contract terms

To comply with legal amendments by the Public Construction Committee, Executive Yuan, the TRA revised the Procurement Bidding Rules, Rules for Considering the Most Favorable Bid Exceeding One-Tenth or Less than the Declared Amount, and Engineering Procurement Contract and Labor Service Procurement Contract on July 16.

4. One-year trial for declaring scrap sales base price

To improve efficiency in scrap sales, the TRA declared our base price for scrap materials on September 3, 2019 as part of a 1-year trial.

5. Short-term optimization of materials and data management systems

To effectively manage materials and improve accuracy for material request, the TRA optimized four areas: purchase of maintenance materials and spare parts with the vehicle, rolling stock material requests summary operation program, unit material control forms, and in-transit material inquiry.

6. Revised Property Procurement Discount and Acceptance Procedure

To comply with MOTC's November 2019 memo revising the discount and acceptance authorization for procurements above the threshold for supervision, TRA declared the revised Property Procurement Discount and Acceptance Procedure on December 24, 2019 to facilitate practical operations.

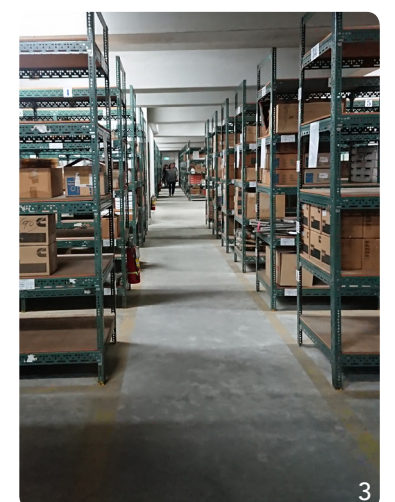
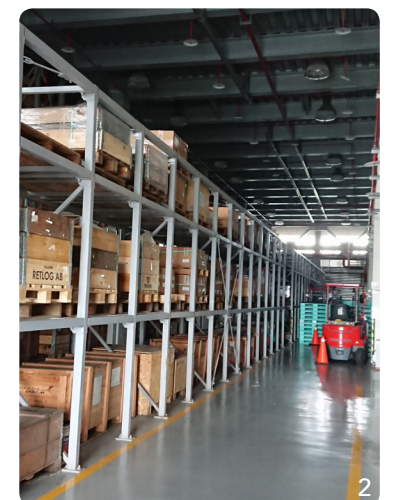
7. Revised Authorized Self-Purchase Materials List

Adjustments to self-purchased material authorizations were reflected in the revised Authorized Self-Purchased Materials List to improve efficiency in supplying self-purchased materials.

(C) On-the-job training and business audits

1. Three training sessions on the Construction Cost Estimating System were conducted in January, May, and October to increase system use among TRA procurement staff.
2. Retraining for procurement specialists was held from April to May and in August. These training sessions were organized by the nature of training; engineering service procurement retraining occurred in 2 sessions for a total of 80 trainees, and property procurement retraining occurred in 1 session for a total of 41 trainees. To improve the practical skills of procurement staff, the retraining reinforced procurement case studies and examples of mistakes to avoid.
3. Basic training for procurement staff was held from May to June. A total of 60 employees studied procurement regulations and operating rules to improve their professional knowledge.
4. The TRA visited four storage units in Taiwan (in the north, central, south, and in Hualien) in May and June to assess whether suppliers fully complied with regulations on material management on the basis of proper material acceptance, storage, and distribution.
5. Seminar training on managing material supply, contracted labor, and material projects was held in June and attended by 86 employees. The training addressed overall planning for supplying administration materials and reinforced each department's familiarity with precautions for contracted labor and material projects.
6. Two sessions for material management training were conducted in July and October to improve understanding and familiarity with material management regulations among material management staff; a total of 81 staff members attended the training sessions.
7. The TRA visited supply plants in northern, central, and southern Taiwan to audit their 10 major risk factors and preventive measures, and small purchases operations. To ensure purchase quality and storage management safety, risk factors were audited on the basis of each plant's specific traits, and the plant was supervised in executing their operating procedures.
8. Advanced training for procurement staff was held in September and attended by 32 employees. The training focused on practical matters, such as purchase contracts and contract disputes, to refine professional knowledge regarding government procurement laws and improve efficiency while ensuring procurement quality.

1. Acceptance-pending storage area.
2. Clearly marked warehouse flow lines. Space was divided by yellow lines.
3. Materials storage by type and nature.



E. Personnel Affairs

(A) On-the-job training for staff

- 1. An All-Out Defense Education seminar was held on May 23 to discuss the importance of national defense from the perspective of naval battles in the First Sino-Japanese War.
- 2. A guided reading seminar on Alluring Creativity was held on June 21.
- 3. An employee assistance program—Adapting Workplace Interpersonal Relationships Workshop—was held on November 28.

(B) 2019 Model Civil Servants Awards

MOTC's 2019 Model Civil Servants Awards Ceremony was held in the Ministry's fifth floor auditorium on Friday, May 3. The ceremony was hosted by MOTC Minister Chia-Lung Lin and honored 35 model civil servants. Four TRA employees received awards at the ceremony: Director Lin-yuan Ma, Deputy Director Kuan-hung Kuo, Station Master Acheng Tung, and Associate Engineer-cum-section chief Li-te Wang.



Minister Chia-Lung Lin and TRA model civil servants.

(C) 2019 Director General Cup Slow-Pitch Softball Championship

To foster employee friendships and promote physical and mental health among colleagues while nurturing team spirit and unity, the Director General Cup Slow-Pitch Softball Championship was held on August 29 and 30. The championship featured 15 competing teams comprising approximately 380 players. After fierce competition, the Hualien recreational team won the championship. The first, second, and third runners-up were the Taitung, Chiayi, and Yilan recreational teams, respectively.



Group photo

(D) Eighth Railway Cup Slow-Pitch Softball Championship

The Eighth Railway Cup Slow-Pitch Softball Championship was held on April 27. The championship comprised 11 teams and 280 players. TRA's softball team, cheerleaders, and working crew displayed their team spirit and won second place.



TRA team wins second place.



TRA softball team with Deputy Director General Wei Tu.

(E) 2019 family activities

To improve employees' family dynamics and promote family harmony among our staff, each department planned and held family activities throughout the year.





F. Training

(A) Mission and task

In addition to continually promoting our six core values—safety, accuracy, service, innovation, unity, and honor—employee training objectives for 2019 included providing the public with high-quality railway transportation services and diversified operations. Therefore, the TRA cultivated railway professionals to facilitate the progression of professional skills and the sustainable development of Taiwan's railways. TRA also established training centers and preparatory departments in Central (Wuri Construction Maintenance Corps), Southern (Chaozhou Base), and Eastern (Hualien Workshop) Taiwan to address insufficient training capacity and bolster local training mechanisms by using regional training measures. These training centers offer practical and retraining courses based on existing equipment and local internship needs to improve professional capabilities.

(B) Training sessions in 2019

The TRA Employees' Training Center hosted 144 training sessions in 2019, reaching 7,326 employees and using 68,755 person days. The training courses are outlined as follows:

1. Railway professional technology training

A total of 28 sessions involved 1,224 individuals and used 37,026 person days. Trainings included a transportation course, operation course, dispatcher course, on-duty trainmaster refresher courses, locomotive operator course, driver course, train inspection course, rolling stock operation and guidance workshop, maintenance driver course, maintenance conductor course, advanced railroad management course, electrical engineering supervisor course, tram line maintenance conductor course, tram line maintenance driver course, introduction to telecommunication technology course, electrical dispatch course, introduction to signal maintenance technology course, signal maintenance technology course, and risk management and failure analysis course.

2. Occupational safety knowledge and competency training

A total of 25 sessions involved 1,607 individuals and 2,570 person days. To prevent occupational hazards and improve workplace safety, training included a category-A and category-C occupational safety and health officers' course, category-A construction occupational safety and health officers' course, category-C construction occupational safety and health officers' course, first-aid staff safety and health training course, and first-aid staff on-the-job training course.

3. Management competency training

A total of 4 sessions reached 145 employees and used 1,494 person days. The courses included public construction quality management training, public construction quality controller retraining, and value engineering workshops.

4. Procurement professional knowledge and competency training courses

Procurement staff basic training and retraining and materials management training aimed to improve efficiency and ensure quality for procurements across TRA departments in 7 sessions that trained 301 employees and used 1,999 person days.

5. Subsidiary business management competency training

To bolster employees' knowledge and skills in contract management and real-estate managers' professional skills, contract management courses for rental and private participation were conducted to effectively improve the practical management of TRA's subsidiary businesses. A total of 2 sessions, 107 employees were employed, using 321 person days.

6. Personnel affairs and anticorruption competency training

Training included a WebHR human resource management subsystem training course, personnel affairs staff competency intensive training course, employee assistance

program, and 2019 1st ethics review meeting cum consensus camp. A total of 4 training sessions, 206 employees were trained and 412 person days were used.

7. New employee orientation and training

A total of 69 sessions involved basic training for operators recruited by examination, basic training for new employees recruited by special railway examination, and professional competency training for new employees recruited by special railway examination; 3,552 employees were trained, involving 23,883 person days.

8. Instructor training

To promote instructor certification and improve instructional quality, external specialized agencies were commissioned to conduct internal instructor training and certification. The program involved 3 sessions, 89 trainees, and 356 person days.

9. Commissioned training for external agencies and audit students

In compliance with the government electrification construction program, the TRA was commissioned to provide training courses for railway construction blockades and cutting power to tram lines and for maintenance vehicle drivers. In total, 2 sessions were conducted, involving 95 trainees and 694 person days.



Group photo of 2019 new employees.



47th Transportation Course graduation photo.

G. Occupational Safety

(A) Strengthening occupational safety culture

The TRA views safety culture as a vital core value. Therefore, 12 hours of occupational health and safety courses have been arranged during basic training for special examination recruits and operators, including a 4-hour course called Zero Hazard—Hazardous Activity Anticipation. These courses directly instill safety concepts in new employees to increase their awareness and commitment to creating a culture of safety, thereby reducing the occurrence of occupational hazards. This year, a total of 2,248 new employees participated in the training.

(B) Promote employee physical and mental health

- 1. TRA Occupational Health Newsletter, issues 001–004.
- 2. A total of 12 monthly on-site occupational safety and health consultation sessions were conducted, and each session was 3 hours long.

(C) Strengthen safety and health education and training

In 2019, we organized 2 category-A occupational safety and health-officer training courses for 64 employees, 1 on-the-job rolling and clamping prevention training course for 43 employees, 1 category-C construction occupational safety and health-officer course for 56 employees, 4 on-the-job occupational safety staff training (retraining) for 89 employees, 12 occupational safety and health-officer retraining courses for 993 employees, 4 forklift retraining courses for 212 employees, 5 crane retraining courses for 418 employees, 3 first-aid staff training courses for 148 employees, 8 on-the-job first-aid staff training (and retraining) courses for 542 employees, one 2019 on-the-job new-employee training for 43 employees, and on-the-job training for 918 headquarter staff members. These training courses were held to improve employees’ competencies in occupational safety and health, self-management, and automatic inspections.



對抗熱傷害
預防勝於治療

健康
快樂

臺灣近30年平均氣溫以每10年上升0.18°C的速度上升，夏季高溫增加至37、38°C，加上臺灣氣候屬濕熱型態，正常人的體表溫度為36.8°C左右，如氣溫高於35°C，人體熱量不容易散發，汗液難以蒸發，對於排汗系統的調節將有更大影響。

▲熱傷害種類及症狀：

熱中暑	熱衰竭	熱暈厥	熱水腫	熱痙攣
• 嚴重者 • 四肢濕潤 • 脈搏微弱 • 面色蒼白 • 體溫超過40°C • 意識不清、昏迷	• 因大量出汗， • 造成水分及電解質 • 流失過多 • 口渴、疲勞 • 體溫超過40°C • 意識不清、昏迷	• 常見於炎熱環境 • 中長時間站立 • 血液循環不良 • 引起暈眩、嘔吐 • 體溫超過40°C • 意識不清、昏迷	• 暴露於炎熱環境 • 後，皮下血管擴張 • 血液回流受阻 • 引起肢體浮腫 • 體溫超過40°C • 意識不清、昏迷	• 因出汗過多， • 使電解質流失， • 引起肌肉痙攣 • 痙攣、手足麻木 • 體溫超過40°C • 意識不清、昏迷

▲熱傷害預防3要訣：

1. 保持涼爽：穿著輕便、淺色、寬鬆、透氣衣服，室內加裝遮光窗簾，關閉不必要的燈及電器設備。
2. 補充水分：隨時補充水分，養成每天至少2,000cc白開水的習慣。不可補充含酒精及大量糖份飲料，以免身體水分流失過多。
3. 提高警覺：隨時留意自己及同事身體狀況，適當休息並補充水分。

▲熱傷害急救處理：

降溫 → 脫衣 → 散熱 → 喝水 → 送醫

局務安妥 祝僑胞平安健康！

資料來源：國民健康署



First-aid staff on-the-job training

(D) Continue to promote occupational health and safety management system (OHSAS 18001 & ISO 45001)

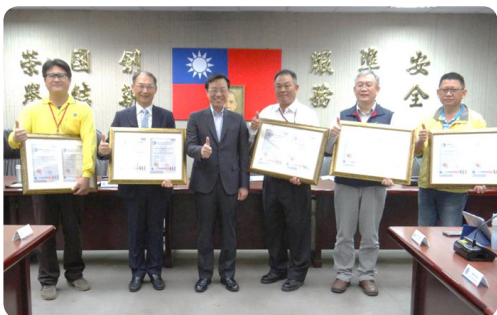
The TRA has implemented safety and health cross-checks and supervised the audit and evaluation systems by leading auditors as part of our efforts to introduce systematic management. These efforts will effectively control facility- and environment-related hazards, improve TRA's occupational safety culture, and improve employees’ physical and mental health. In 2019, revalidation for 5 administration units and follow-up monitoring for 33 administrative units were completed.

(E) Promote health and safety standards in construction projects

Reinforced safety and health inspections are conducted at least monthly for major construction projects (NT\$50 million and above). The inspection team comprises the Head of Occupational Safety and occupational safety staff in the Occupational Safety Office, and external specialists are invited to each inspection. Major construction projects inspected in 2019 included two projects for renovating maintenance corps offices, Taitung line tamping as part of the Hualien–Taitung electrification project, the renovation of occupational dormitories within the Hualien Construction Branch, the construction of fences along all TRA lines, two projects for laying double tracks connecting TRA's mountain and ocean lines between Chenggong and Zhuifen, two projects for renovating the Wencuobu River Bridge, and renovations to the Third Shuangxi Bridge and Xinshe Bridge along the Yilan line.

(F) Advancements in occupational safety

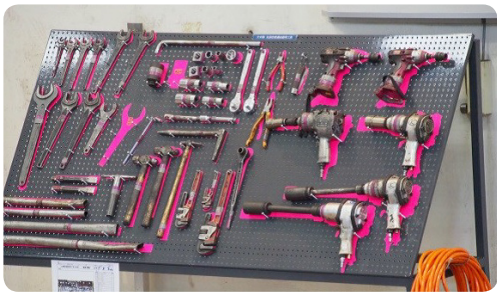
1. To reduce occupational hazards, Head of Occupational Safety & Health Office Yung-chang Li, Occupational Safety & Health Office Section Chief Yung-chang Lin, and Operation Safety Department Director Chin-Liang Chang visited the JR-East and Tobu Railway companies to observe their occupational safety and health management practices.
2. The TRA established a nurse exchange platform comprising headquarter and branch agency nurses. Nurses share their work experience on the platform to reduce investigation times and improve work efficiency. THSR nurses were invited to TRA for practical exchanges on December 12 to explore topics such as health promotion and protection and encountering problems during urine tests for railway operators.



Director General Cheng-yuan Chang awarded revalidation certificates on December 25, 2019.



Safety and health audits.



JR-East Tokyo Vehicle Center occupational safety management



H. Disaster prevention preparations



Railway safety drills

(A) Mobilization, disaster prevention, counterterrorism safety drills

In 2019, three TRA mobilization offices (regional brigades) performed three large-scale railway disaster rescue (recovery) and response drills with 1,015 employees. The headquarter corps held the “TRA Building Disaster Prevention Drill” on May 8 to practice evacuation and disaster prevention for staff occupying the second floor and above; 377 employees participated in the drill. External support units also participated in the drills, with a combined headcount of 1,392 persons. The drills reinforced evacuation, emergency treatment, and the rescue and recovery of injured people during disasters among the mobilization offices and the headquarter corps.

Serial	Unit	Date	Drill venue
1	TRA Corps	108.5.8	TRA Building
2	Kaohsiung Mobilization Office	108.5.14	Chiayi Station
3	Yilan Mobilization Office	108.5.16	Ruifang Station
4	Hualien Mobilization Office	108.5.30	Hualien Station

(B) Flood prevention and preparedness

The TRA's principles of flood prevention are personal safety, train safety, and railroad safety. Since the onset of flood season in March, every response team has conducted disaster prevention awareness education and thorough inspections of their equipment against the “Flood Check Record;” response teams conducted flood drills in compliance with the established Flood Drill Plan. In April, regional response teams formed a selective inspection task force to supervise flood preparation by all units within the task force's jurisdiction. At the headquarters, a joint supervisory task force was formed by the Security Corps and the Transportation, Construction, Rolling Stock, and Electrical Engineering Departments to supervise and audit the response teams' flood preparation efforts.

(C) Auxiliary Military Service Corps training

In accordance with the *Guidelines for the Assembly and Training of Annual Auxiliary Military Service Corps*, the TRA and the Reserve Command of the Ministry of National Defense organized *Auxiliary Military Service Corps* training to bolster the service capacity of military service teams and wartime emergency railroad repair and rescue. One independent regional corps of 39 persons participated in the training.

On September 2, the Taipei Construction Branch held the 2019 Auxiliary Military Corps Assembly and Training (No. Z931102) for 39 persons.



Taipei Construction Branch training

(D) Civil defense force seed drillmasters

To establish disaster prevention and rescue, counterterrorism, self-defense and self-rescue, and all-out defense and all-out defense mobilization readiness in times of peace, the TRA conducted basic training for civil defense force seed drillmasters to increase understanding of civil defense and to improve the functionality of civil defense teams. In 2019, the TRA's headquarter corps and its five regional mobilization offices conducted six basic training sessions from June 18 to July 8 in accordance with the Ministry of the Interior's 2019 Civil Defense Forces (Special Defense Corps) Basic Training Program; 462 persons were trained (292 men, 170 women, and 240 new employees).

Training courses in 2019 included disaster prevention and rescue (1 hour), emergency medical rescue and automated external defibrillator use (1 hour), civil defense law cum identifying and handling hazardous objects (1 hour), and building fire inspections and declarations (1 hour).

Serial	Unit	Training Date
1	Headquarter Corps	108.7.3
2	Taipei Mobilization Office	108.6.18
3	Taichung Mobilization Office	108.7.8
4	Kaohsiung Mobilization Office	108.6.27
5	Yilan Mobilization Office	108.7.2
6	Hualien Mobilization Office	108.7.4

(E) 2019 National Disaster Prevention Day Drill by the Taipei Station Union Emergency Operation Center

The topic for this drill was Union Emergency Operation Center Equipment Verification Drill, involving single-area fires, cross-area fires, and indiscriminate violence, and human-caused destruction scenarios, such as unexploded bombs and toxicants. The drill integrated Taipei Main Station staff of special regions with local government fire safety, police, and medical disaster relief units and national military resources to practice simulated scenarios and reinforce the functionality of the Union Emergency Operation Center.



Performing the drill

This drill was conducted due to the completion of the Union Emergency Operation Center. More than 430 persons in 25 units participated in the drill, including the Taipei City Fire Department, Department of Health, Department of Environmental Protection, Criminal Investigation Bureau, Department of Transportation, Department of Compulsory Military Service, and external support units, including the Railway Police Bureau of the National Police Agency, Criminal Investigation Bureau Fifth Detective Team's bomb squad, the Environmental Protection Administration's Northern Environmental Incidents Specialist Team, the 6th Army Command's 33rd Chemical Corps, and the Taipei Military Police. The drill was expected to strengthen evacuation and emergency response, rescue, and recovery within specified areas.

I. Ethics

(A) Anticorruption platform

The TRA established anticorruption platforms for vehicle purchases and electrical engineering matters that consolidate supervision by external agencies. These anticorruption platforms involve holding regular liaison meetings, establishing administrative transparency zones, organizing anticorruption symposiums, and implementing preventive measures to eliminate improper external interference and construct high-quality public facilities as part of the TRA's commitment to shaping an efficient and ethical government.

(B) Anticorruption activities

1. Anticorruption campaigns

TRA held 24 events as part of our Private Profit and Civilian Convenience campaign that involved 3,737 persons. The TRA Employee Training Center's on-the-job training cum rule of law training for railroad special examination recruits offered a brief introduction to the code of ethics for civil servants and regulations on corruption. A total of 15 sessions were held in 2019 to train 2,363 persons over 70 cumulative lecture hours.



Private Profit and Civilian Convenience training

2. Social participation

To utilize the TRA's railway network throughout Taiwan, the TRA held anticorruption education and campus campaign-vehicle activities, campus education, and institutional activities in

Northern, Central, Southern, and Eastern Taiwan. These campaigns consolidated railroad knowledge and advocated anticorruption principles to 2,993 students and members of the public over 20 sessions. The TRA also established an anticorruption image through appropriate coverage of our campaigns in newspapers, magazines, and multimedia.



Anticorruption education and campus campaign vehicle.



Catering Service Department campus education activity.

3. Administrative transparency

The TRA established open mechanisms and multi-information channels for our major and special-budget procurements—including the TRA Carriage Purchasing and Replacement Project and the Forward-Looking Infrastructure Development Program—and for cases of public concern.

(C) Special audits

The TRA conducted a special audit of materials management in 2019 to investigate risk factors and suspected violations in purchase requisitions, inspections, and storage. Suggestions based on the summarized findings were proposed to reinforce each unit's understanding of the value of materials management while increasing operational quality and reducing concerns of ethical risks. These suggestions also aligned railway transportation services more closely with public interests and fulfilled the public's expectations of an ethical government.



On-site audit



Midterm meeting



Finding discussion meeting

(D) Anticorruption conferences

The TRA held an anticorruption conference on September 18 to commend an anticorruption model and create a culture of institutional integrity. The conference also reviewed institutional practices and ethics promotion. The discussion items and chairperson's adjudication were recorded and sent to the participating units for monitoring to improve institutional anticorruption efficacy and employee consensus. Furthermore, the TRA's 43 branch institutions were divided into seven regional anticorruption conferences, and 10 regional anticorruption conferences were held in 2019.



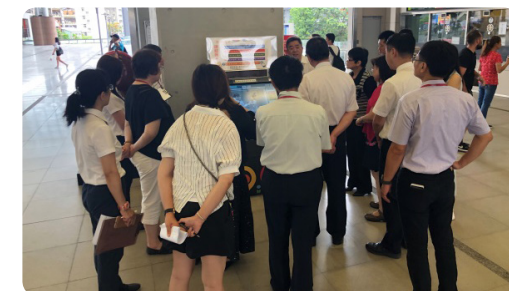
Awarding the anticorruption models



Director General hosting the anticorruption conference

(E) Information use management

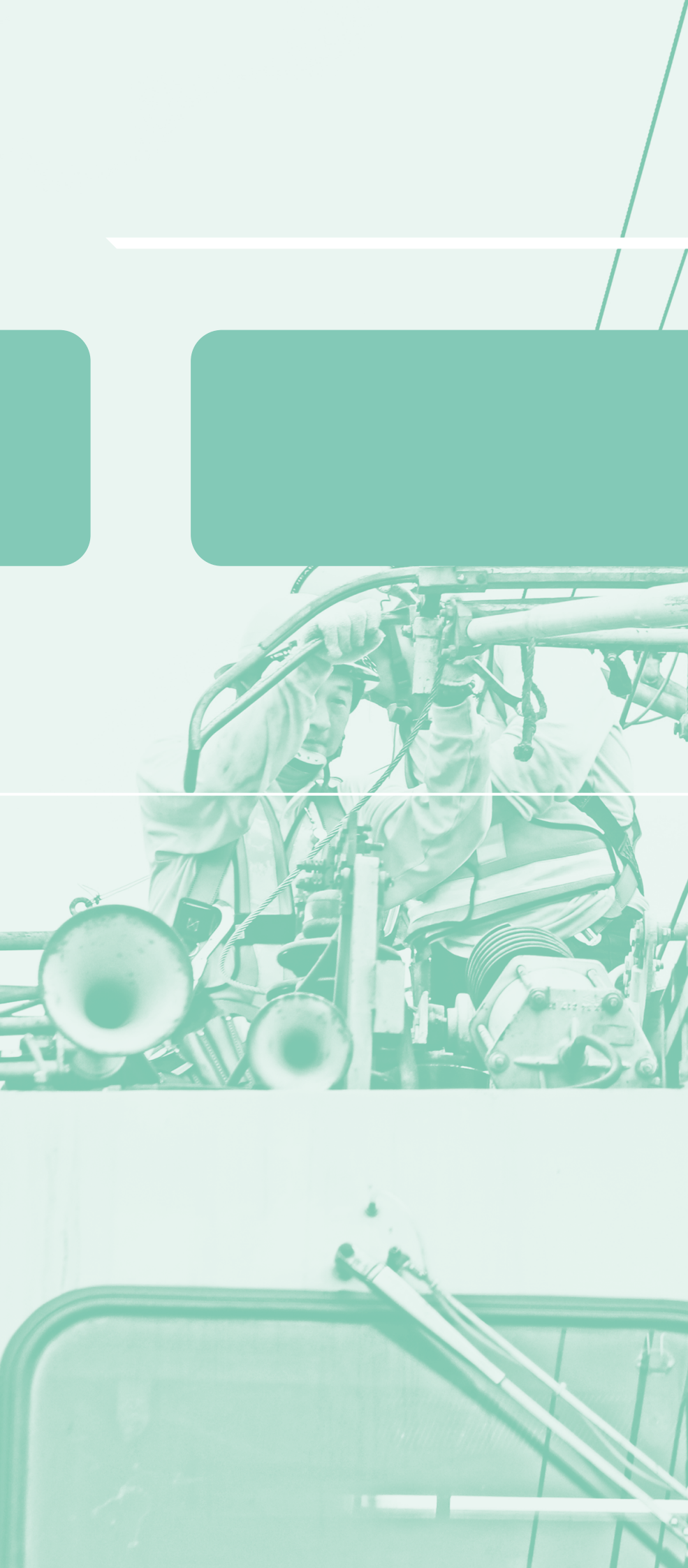
The TRA Fourth-Generation Ticket-Booking System was audited from July to September 2019 for information use management. On-site audits were performed for eight venues on the basis of ticketing, supervisory management, system development, and data-center maintenance to determine their applicability, confidentiality, legality, and integrity in cyber-security management system operations and whether they fulfill the TRA's information security management system (ISMS) regulations to ensure effective ISMS implementation and reduce risks in information processing.



On-site audits



VI. Major Construction and Investment Projects



A. 6 Year Plan for Railway Safety Improvement (2015–2022)

(A) Construction

1. Project content

- (1) Level-crossing improvements: grade separation of the Nanhe, Jiannong, and Taimali level crossings.
- (2) Installation of fencing and acoustic barriers in dangerous sections: installment of 175 km of fencing and acoustic barriers.
- (3) Bridge renovations and compliance reinforcement with current legal requirements: Renovation of 15 bridges, such as the Wencuobu River Bridge.
- (4) Slope slide, debris flow, and strong-wind warning system: improvement of slopes, subgrades, and drainage facilities in high-risk TRA railway sections and establishment of a slope-area disaster warning system.
- (5) Legally-mandated station facility renewal: elevation of all station platforms along TRA lines and improving safety features in public toilets and barrier-free facilities.
- (6) Railroad facility renewal: replacing 250 km of 50-kg steel rail, 60 km of 50-kg head-hardened rail, and 600 sets of 50-kg PC switch sleepers.

2. Project outcomes

- (1) Earthquake- and flood-resistant reinforcements for bridges along the construction branches were completed by the end of 2019. These reinforcements included repairs to exposed reinforcing bars and peeling concrete, anticollapse bridge installations, earthquake-resistant reinforced carbon-fiber engineering, column pier-wrapping steel plates (bars), riverbed flood-resistant reinforced concrete, removing concrete railings, and installing railings.
- (2) As of the end of 2019, 162,337 m of fencing were installed along dangerous sections to reduce casualties and train delays caused by civilians crossing rails for convenience.
- (3) The Taipei Station Union Emergency Operation Center opened on October 17, 2019.
- (4) Improvements to 13 station bathrooms were completed by September 2019 to improve station travel service quality. Improvements were made in Xipu, Tongxiao, Yuanli, Longjing, Dadu, Wuri, Sanyi, Zaoqiao, Nanshi, Dashan, Baishatun, Rinan, and Tai' an stations.
- (5) A barrier-free elevator was installed in Shuishang Station in November 2019.
- (6) A barrier-free elevator was installed in Zhudong Station in June 2019.

(B) Rolling stock

1. Stepless carriage remodeling

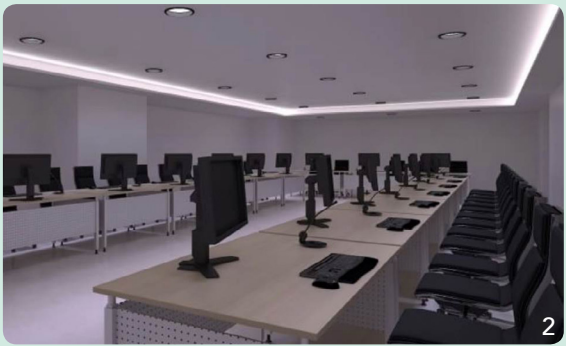
To improve train accessibility, China Steel Machinery was commissioned to perform carriage-step leveling and valve improvements for 1,208 trains. As of 2019, China Steel Machinery completed 411 trains, and the remaining trains will be completed by October 2020.

2. 252 local passenger train (EMU 500) power system and SIV system updates

Shihlin Electric was commissioned to update the power system and static inverter for 252 local passenger trains (EMU 500). The prototype was completed in 2019, and the project is expected to be completed in 2023.



Installed fences



1. Taipei Station Union Emergency Operation Center 2. Taipei Station Union Emergency Operation Center conference room
3. Renovated Sanyi Station public toilets 4. Renovated Yuanli Station public toilets 5. Renovated Rinan Station public toilets
6. Renovated Zaoqiao Station public toilets

(C) Electrical engineering

1. Obstacle-detection system

- (1) To prevent failing road vehicles on level crossings from affecting vehicular safety, 35 automated level-crossing obstacle-detection systems were installed along the main line; 245 more systems will be installed in the future.
- (2) The obstacle-detection system will activate simultaneously with the level crossing. If the system detects obstacles on the level crossing, it will activate the TRA emergency alert system and notify the train operator to immediately address the obstacle, thereby reducing crossing incidents.

2. Waterproof electric switches

- (1) To resolve train delays caused by signal malfunction due to submerged electrical switches during heavy rains in flood zones along the railway, the TRA has elected to use IP67 dustproof and waterproof electric switches.
- (2) After a census of flood zones within its jurisdiction, the TRA purchased a total of 87 waterproof electric switches, of which 63 were installed in June 2019 and 24 were prepared as spares.

3. 96-core optical cables first-ring laying engineering project

On December 2, 684 km of optical cables were laid to replace outdated 12-core, 24-core, and 30-core optical cables, effectively reduce cable-slot space, and increase physical backups for transmission routes, thereby improving overall communication transmission reliability.

4. 95-mm² main suspension line renewal

Original 49.5-mm² main suspension lines were replaced with 95-mm² suspension lines. The project budget was NT\$867 million over 1,260 km, and 1,002 km of suspension lines have been replaced. As of the end of 2019, actual progress was 79.5%. The project is expected to be completed by June 30, 2021.

5. Purchasing tram-line work vehicles and railway-maintenance vehicles

The TRA is purchasing 17 tram-line work vehicles and 11 railway-maintenance vehicles. The first batch of 10 vehicles was delivered in June 2019 and are currently being inspected for acceptance. This purchase will improve tram-line maintenance efficiency and reduce malfunction recovery times.



B. Forward-Looking Infrastructure Development Program

(A) THSR Changhua Station and TRA transfer shuttle program

1. Content

This program operates in tandem with the Jiji line to connect tourism service capacities by providing seamless transfers between THSR Changhua Station and TRA rail lines. The implementation timeline is approximately 6 years, and the budget is NT\$1.89 billion. Major implementation tasks include constructing the Tianzhong line as an elevated single track; the line is approximately 3 km long, and the elevated section is approximately 1,350 m long. The embankment section and the flat approach section are approximately 1,650 m long. Implementation also includes joint operation with the Jiji line to increase the Jiji line's crossing functions.

2. Outcomes

The final report of the study on the THSR Changhua Station and TRA transfer shuttle program's feasibility was provided to the Executive Yuan on August 29, 2019 and approved on September 27. The TRA will continue to manage the project's comprehensive planning.

(B) THSR Zuoying Station to TRA Pingtung Region transfer shuttle service optimization project

This project was commissioned to China Steel Machinery and involves updating and optimizing carriage services and facilities for 15 EMU trains (model EMU 500, 60 carriages in total). All carriages were optimized and operating by August 2019.



Before optimization



After optimization

(C) TRA Chenggong-Zhuifen subbranch railway track-doubling project

To address the operational bottleneck along the Chenggon-Zhuifen subbranch, the subbranch was expanded to have double tracks. The double tracks were expected to alleviate bottlenecks in and provide convenient, rapid, comfortable, and efficient railroad transportation services to the residents of the Taichung region. The project budget of NT\$1.54 billion was approved by the Executive Yuan in 2016, and the planned implementation timeline was January 1, 2017 to December 31, 2020. The project includes the following main tasks:

1. Increasing route capacity
2. Reducing headway
3. Satisfying commuter needs to improve mass rapid transit functionality
4. Alleviating bottlenecks in the Taichung region

This project also includes roadbed, infrastructure, rail track, signal, communication, and electrical engineering construction. Design and construction began in 2017; after the southern branch cutover was completed on March 30, 2019, construction began on the northern branch. The double track of the northern branch was completed in December.



Aerial view of the Chenggong-Zhuifen subbranch

(D) TRA intelligent electrical services improvement project

1. Wireless optimization has been completed in 14 locations to increase wireless coverage to 100% for vehicle-mounted devices and 99.16% for handheld devices. The locations were north of Lanyang Bridge, Toucheng Station, Ronghua Station, south of Tongxiao Township, south of Yuanli Township, Tai'an Station, Shiliu Station, south of Houbi District, Shigui Station, Linfengying Station, south of Houzhang, Jiuqutang Station, Kancheng Station, and Jingmei Station.
2. In 2019, the procurement of 3,000 handheld devices (model MTP3550) was processed, and its delivery is expected in February 2020. These new devices will replace current MTP750 models to ensure safety for vehicular operations and on-site maintenance staff.
3. The installation of the second loop of 96-core optical cables was initiated on June 28, 2019 and is expected to last 500 working days. The entire project involves laying approximately 550 km of optical cables to protect the TRA's double-loop physical optical cables and improve safety and security.
4. The budget equipment and system upgrades (including installation) at nine electrical substations was NT\$268 million. The project aims to increase substation load and emergency transfer capacity by upgrading old 15-MVA transformers to 25-MVA transformers. Upgrades to Shulin, Fengyuan, and 30% of Chiayi substations have been completed, and the entire project is expected to be completed in June 2020.
5. The bidding for 15 tram-line work cars and 10 railway-engineering maintenance cars

was completed in September 2018. The supplier is currently in manufacturing and delivery process.



Tram-line work car

(E) TRA Jiji line infrastructure improvement project

This project involves improving station facilities, track alignment, and slope stability tests in all stations along the Jiji line to improve its overall service and enhance customer convenience, safety, and tourism quality. The total budget for the project is NT\$2.363 billion, and the planned project timeline is August 23, 2019 to July 31, 2026. Key project items are as follows:

1. Elevating and extending platforms in all stations
2. Improving station exterior appearances and transportation facilities
3. Repairing fencing and drainage facilities along the line
4. Reinforcing slope stability and remote monitoring
5. Reconstructing bridge and tunnel tracks
6. Improving railroad alignment
7. Enhancing station track functionality
8. Relocating level crossings

C. Yilan line and Guishan–Wai'ao subline improvement feasibility study

This project primarily involves long tunnel structures and linear curves longer than 1,000 m to avoid disaster-prone areas and residential buildings at tunnels after trains leave Guishan Station and connect to existing rail lines north of Wai'ao Station; Wai'ao Station and existing curves to the north will remain unchanged. The total project budget is NT\$1.95 billion and is expected to require 3 years to complete after approval. The project was approved by the Executive Yuan on November 25, 2019.

D. Various construction projects

(A) First Babaozhen Bridge renovations

In compliance with local channel-regulation plans, the TRA began the First Babaozhen Bridge renovation project in 2015. The project contract was terminated in 2017 because of the contractor's financial difficulties. To facilitate bid recruitment for the project and increase contractors' intent to bid on the project, the project's purchasing and contracting strategy was consolidated with the bids for the TRA's 6 Year Plan for Railway Safety Improvement and the Fanzigou Bridge Renovation on Behalf of the Chiayi City Government. The MOTC approved the project and selected the most advantageous bid, and construction began on November 13, 2018. The new east main line cutover for the First Babaozhen Bridge was completed on September 22, 2019, and the west main line cutover is expected to be completed in February 2020.



New First Babaozhen Bridge



(B) Fanzigou Bridge Renovation on behalf of the Chiayi City Government

In compliance with local channel-regulation programs, the TRA began the Fanzigou Bridge renovations on behalf of the Chiayi City Government in 2014 (West Coast line K297+321). However, because the contractor terminated the contract in 2015, the project's purchasing and contracting strategy was consolidated with the bids for the TRA's 6 Year Plan for Railway Safety Improvement to facilitate bid recruitment for the project and to increase contractors' intent to bid on the project. The MOTC approved the project to select the most advantageous bid in 2018. Engineering beams for the east and west main lines were erected on September 29 and October 1, 2019, and renovations are progressing rapidly. Because of the urgency and time sensitivity of flood control, the double-hole concrete culvert is expected to be constructed before the 2020 flood season.



(C) Off-duty housing improvement projects

The TRA is an institution of nearly a century's history, and many work environments are located in existing station environments that are small, simple, and outdated. Off-duty housing for crew members (drivers and conductors) and station lounges in particular lacked proper spatial planning when they were constructed. Therefore, Director General Cheng-yuan Chang instructed that reserve housing will be remodeled as single-person studios with shared recreational lobbies to improve employees' on- and off-duty spaces; the studios are equipped with airtight windows and bathrooms to separate dry and wet environments.

The off-duty housing improvement project was incorporated into the agenda of the TRA work environment improvements discussion meeting in November 2018. Planning for 35 off-duty housing locations were discussed, and as of the end of 2019, 8 locations were completed (7 renovation projects and 1 new construction project). The remaining locations will be continually contracted out in 2020 as the budget allows.



Opening of improved off-duty housing at Shanhua Station



Improved off-duty housing at Shanhua Station



Dajia Station off-duty housing

(D) Line maintenance

The TRA executed railroad improvements for all TRA lines in 2019 by replacing 4,726 railway sleepers, 76,045.7 m of rail tracks, and 1 turnouts and using 23,523.8 m³ (approx. 88.71 km) of supplemental ballasts.

E. Vehicle purchase and upgrading projects

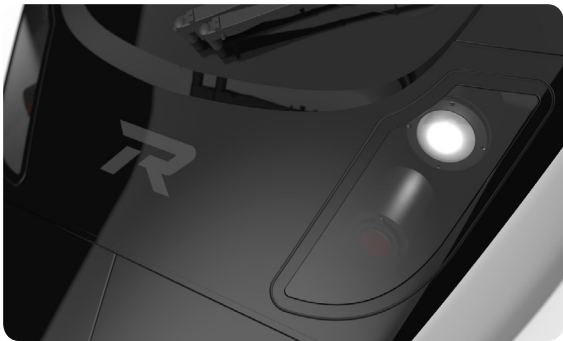
(A) TRA Vehicle Purchase and Replacement Project (2015-2024)

The total project budget is NT\$99.73 billion for purchasing 1,307 locomotives and carriages. The following items will be purchased:

- 1. 600 intercity EMUs
- 2. 520 commuter EMUs
- 3. 127 locomotives (the first 102 have been purchased, and the remainder will be supplied through subsequent expansion)
- 4. 60 subline passenger trains

The contract for purchasing intercity EMUs was signed on January 15, 2019. The commuter EMU was designed in detail, and the electric locomotive contract was signed on November 1. The diesel-hydraulic locomotives contract was signed on November 21. Delivery of the vehicles and bids for subline passenger trains are expected to begin in 2021.

Introduction to the New Intercity Train Design seminars were held at Hualien Station on November 30 and at Taitung Station on December 1. These seminars exhibit a new side of the TRA to international and domestic travelers and attract travelers globally to appreciate Taiwan's railway tourism.



EMU 3000 intercity EMU

(B) Upgrading tourist passenger trains

To create a high-quality travel environment, upgrading services and facilities for 29 tourist passenger trains was completed by November 2019. Among them, 13 tourist passenger trains “Future” were being displayed in the aesthetic design and achievements exhibition on December 13. Of the 600 intercity EMUs that were purchased, 4 trains (48 carriages) were designated and designed to be tourism trains.



(C) Numbers of locomotives, passenger trains, and freight trains

- 1. Locomotives, 255
 - (1) Electric locomotives, 86
 - (2) Push-pull electric locomotives, 64
 - (3) Diesel-electric locomotives, 89
 - (4) Diesel-hydraulic locomotives, 16
- 2. Passenger trains, 2,335
 - (1) Tze-chiang limited express EMUs, 285
 - (2) Tze-chiang limited express push-pull passenger trains, 381
 - (3) Commuter EMUs, 950
 - (4) Tze-chiang limited express diesel multiple units, 165
 - (5) Diesel passenger trains, 46
 - (6) Air-conditioned passenger trains, 427
 - (7) Regular passenger trains, 34
 - (8) Other trains, 47
- 3. Freight trains, 1,578



F. Project Engineering

Kaohsiung Workshop Relocation and Existing Site Development Project

In response to Kaohsiung's underground railway program, the Kaohsiung Workshop, Southern Region Supply Workshop, and the Kaohsiung Port maintenance subbranch must be relocated to Chaozhou to maintain the steady supply of repair materials and spare parts for passenger and freight trains and to ensure their normal operation and vehicular safety. The relocation will also satisfy the TRA's EMU repair needs after rapid transitization, and the newly constructed Chaozhou base is designated to be the southern train-maintenance center. The original vacant land will be developed and used on the basis of urban-planning changes. The first amended plan was submitted to the Executive Yuan for approval in 2017, and the total amended budget was NT\$13.4818 billion. The adjusted project timeline is August 13, 2013 to December 31, 2021 and includes the following key project items:

1. Relocating the Kaohsiung Workshop to Chaozhou
2. Relocating the Southern Region Supply Workshop to Chaozhou
3. Relocating the Kaohsiung Port maintenance subbranch to Chaozhou
4. Building additional push-pull passenger-train maintenance workshops
5. Developing and using the original factory vacant lot on the basis of urban-planning changes

The CL111 lot bid and construction was completed in July 2019, and the following remaining projects will progress according to the original timeline: CL121 Chaozhou Workshop (and Southern Region Supply Workshop) main construction, CL1131 maintenance equipment construction, CL241-1 electronic interlocking system extensions bid, CL241-3 ATP system extensions bid, and CL241-4 wireless train-control systems.



Simulated image of the completed relocated Chaozhou workshop





Appendix Major Events in 2019



Major Events in 2019

- 01.01
- Successful completion of New Year's consecutive holiday transportation duties
- To manage 2019 New Years' consecutive holiday transportation, an additional 286 trains (105 trains on the eastern trunk, 153 trains on the western trunk, and 28 trains on the South link line) with an additional 490 train carriages operated on all lines from December 28, 2018 to January 2, 2019. The trains transported a total of 4,427,822 passengers, on an average of 737,970 passengers per day, a 1% decrease compared with the previous year. Passenger transportation revenue totaled NT\$396,826,227, on an average of \$66,137,705 per day, a 3% increase compared with the previous year.
- 01.04
- Reopening of Taipei Main Station's Taiwan Railway Bento No. 2
-
- 01.08
- Breakfast with the Director General in Banqiao with Taipei area managers and staff
-
- 01.09
- Lunch with the Director General in Hualien with Eastern Taiwan managers and staff
-
- 01.10
- TRA Director General's visit to injured passengers and their family members in Taitung
- Director General Cheng-yuan Chang, with Chief Secretary Lai-shun Chu, the Head of the Transportation Department Chin-sung Chang, Head of the Hualien Transportation Branch Chin-tien Wu, and the Puyuma Care Group, traveled to Taitung to visit passengers injured in the 2018 Puyuma derailment and the families of the deceased to express the TRA's care and condolences.
- 01.11
- Iwate Galaxy Railway Company's visit to the TRA
- A total of 11 representatives led by President and CEO Yasuki Asanuma from Iwate Galaxy Railway Company of Japan visited TRA at 3:30 pm. They were received by Deputy Director General Jen-tsai Hsu. The Japanese visitors introduced the northeast region rail and bus ticket travel program. We look forward to more frequent exchanges and interactions between the two companies and increasing the promotion of railway tourism.
-
- Director General Cheng-yuan Chang's visit to the southern Chaozhou base
-
- 01.22
- Pingtung County Magistrate Men-an Pan's visit to the TRA
- Pingtung County Magistrate Men-an Pan visited the TRA at 4:00 p.m. and was received by Director General Cheng-yuan Chang; they discussed train-carriage illustrations for the Taiwan Lantern Festival.
- 01.23
- Opening ceremony for the TRA Employee Care Center
- The Care Center was formally established on the third floor of the TRA headquarters. The placard was jointly unveiled by Director General Cheng-yuan Chang, Director Wen-cheng Chang of the Taiwan Railway Labor Union, and the MOTC Head of Personnel Ying-liang Tsai to signal the TRA's goal to help employees resolve work problems or personal troubles and cultivate a caring work environment to enhance morale and service efficiency.
- 01.24
- MOTC Minister Chia-lung Lin's hosting of the Fourth Roundtable of 1021 Puyuma Accident
- The 1021 Puyuma Accident Roundtable was held in the MOTC conference room at 2:00 p.m. and was hosted by MOTC Minister Chia-Lung Lin. TRA Director General Cheng-yuan Chang also attended, accompanied by Chief Secretary Lai-shun Chu, Head of the Operational Safety Department Sheh-chi Chen, the Puyuma Care Group, and the Legal Affairs Unit. TRA staff listened to the families' concerns and recorded them into the meeting minutes for subsequent follow-up.
- 01.25
- Ichibata Electric Railway Company's visit to the TRA
- A total of 4 representatives from Japan's Ichibata Electric Railway Company led by Japan Ichibata Electric Railway Co., Ltd. President and CEO Otani Atsuro visited the TRA at 3:30 p.m. and were received by Chief Secretary Lai-Shun Chu to discuss a formal partnership between the two companies.
- 01.28
- Shiroi City councilor Kenichiro Wada's visit to the TRA
- Councilor Wada from Japan's Shiroi City visited the TRA at 11:00 a.m. and was received by Director General Cheng-yuan Chang. The TRA looks forward to cultivating a steadfast friendship and promoting bilateral railway tourism exchanges to facilitate tourism development.

- 01.30
- Construction and opening of the Xinying Station East Station Exit
- Construction of the east station building of Xinying Station began on September 15, 2017 and finished on December 28, 2018. After 15 months of construction, the new building officially opened. The new building will provide the public with convenient rapid transit and barrier-free services while driving the development of the overall east station area. Second-phase peripheral construction will continue to provide more comprehensive transportation facilities and convenient transfers.
-
- MOTC Minister Chia-lung Lin's inspection of preparations for Chinese New Year migration
- Minister Lin inspected preparations for Chinese New Year transportation at the Shulin shunting yard at 11:00 a.m. and was accompanied by Director General Cheng-yuan Chang. They enhanced employees' morale and attended the "I Love TRA, Safety First" promotional campaign.
- 01.31
- Japan's Railway Technical Research Institute's Visit to the TRA
- A delegation of seven representatives led by Executive Director, Dr. Ikuo Watanabe, from Japan's Railway Technical Research Institute arrived at the TRA at 9:10 a.m. and was received by Director General Cheng-yuan Chang, who led all first-level officers. They discussed the topic "Increasing Security Management and Railroad Digitization" in the first conference room. We look forward to deepening our substantive partnership through bilateral railroad technical exchanges and by creating an advantageous situation for both Taiwan and Japan's railroad industries.
- 02.01
- MOTC Minister Chia-lung Lin's inspection of preparations for the Chinese New Year migration at Taipei Main Station with Director General Cheng-yuan Chang
-
- 02.03
- MOTC Minister Chia-lung Lin's inspection of preparations for the Chinese New Year migration in the Qidu region
- Accompanied by Director General Cheng-yuan Chang, Minister Chia-lung Lin inspected the Qidu Rolling Stock Branch to understand train formation, usage, and preparations for the holiday migration. Minister Lin and Director General Chang also attended a dinner with local staff to thank them for their dedication and sacrifice.
- 02.11
- Successful fulfillment of 2019 Chinese New Year consecutive holiday transportation duties
- The 2019 Chinese New Year holiday transportation period was January 31–February 11, 2019. A total of 513 additional trains operated on all lines, including 311 trains on the eastern trunk (including the South link line), 202 trains on the western trunk, and 1,131 additional carriages. A total of 8,327,078 passengers and daily average of 693,923 passengers were transported, which indicated a 2.1% decrease compared with the same period in 2016. Total and daily average revenue from passenger transportation were NT\$760,109,919 and NT\$63,342,493, respectively, which represented a 4.9% increase compared with the same period in 2016 (the 2019 migration was compared with that of 2016 because they had the same calendar periods).
- 02.18
- Director General Cheng-yuan Chang's visit to Pingtung County Magistrate Men-an Pan to express the TRA's full cooperation with transportation for the 2019 Taiwan Lantern Festival
- Director General Cheng-yuan Chang arrived at Pingtung County Government at 11:00 a.m. to visit County Magistrate Men-an Pan to discuss additional trains for the Taiwan Lantern Festival and to inspect Pingtung Station's shuttle preparations for the festival. We estimated that 24 trains, 27 additional trains, and 275 overtime trips operated each day to fulfill our mission of "transporting everyone in the station and leaving no one behind."
- 02.19
- Japan's Sanyo Electric Railway Company's visit to the TRA
- A delegation of five representatives led by President and Representative Director, Kazuhiro Uekado, from Japan's Sanyo Electric Railway Company arrived at the TRA at 11:00 a.m. and was received by Deputy Director General Wei Tu. Both parties discussed future tourism promotions plans.
- 02.21
- Partial rollout of the Fourth-Generation Ticket-Booking System
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-
- Media tour (led by Director General Cheng-yuan Chang) of a renovated tourism train and Starbucks converted from the old Xinfeng Station to learn TRA asset vitalization and tourism promotion outcomes
- 03.03
- Successful fulfillment of 2019 Taiwan Lantern Festival transportation duties
- During the 2019 Taiwan Lantern Festival (February 15–March 3), TRA Pingtung, Chaozhou, and Linbian Stations cooperated to transport a total of 415,534 passengers, averaging 24,443 passengers per day. Passenger traffic was 77% higher than normal, and revenue totaled NT\$28,002,330. Lantern Festival transportation duties were successfully fulfilled.
- 03.04
- The TRA's formal establishment of the Real Estate Development Center to generate asset income
- The TRA formally established the Real Estate Development Center. Director General Cheng-yuan Chang hosted a press conference in the Taipei Main Station VIP room and unveiled the placard in front of the office.

- 03.04

Successful fulfillment of 228 Memorial Day consecutive holiday transportation duties

To manage transportation needs for the 228 Memorial Day consecutive holiday, 350 additional trains with 331 additional carriages operated from February 27 to March 4, transporting a total of 4,658,064 passengers over 6 days. The daily average was 776,344 passengers, a 7.97% increase compared with the same period in 2017. Total passenger transportation revenue was NT\$390,323,026 with an average daily income of NT\$65,053,838, a 1.12% increase compared with the same period in 2017 (The 2018 228 Memorial Day was not a consecutive holiday).
- 03.13

Lunch with the Director General in Yilan with Yilan regional managers and staff
- 03.15

Singapore's National Institute of Education's visit to the TRA

A delegation of 13 representatives from Singapore's National Institute of Education was received at 2:00 p.m. by Director Cheng-te Yang of the TRA's Planning Department, leading Section Chief Shu-fen Liu of the Employees' Training Center, and members of the Personnel Office. Discussions focused on employee training.
- 03.17

Premier Tseng-chang Su's inspection of Fengshan Station

Premier Tseng-chang Su was accompanied by MOTC Minister Chia-lung Lin and TRA Director General Cheng-yuan Chang to inspect the diesel smell situation in the Kaohsiung underground railway. Deputy Director General Du presented the measures that the TRA has performed to improve the situation and ensure that underground air quality meets safety standards. Scientific test results and objective data also ensure passenger's safety on public transportation and stable work environments for the employees.
- 03.20

Director General Cheng-yuan Chang's inspection of stations along the Neiwan line (Zhudong, Hengshan, Jiuzantou, Hexing, and Fugui)
- 03.22

Director General Cheng-yuan Chang's inspection of the western trunk (stations along the ocean line included Dashan, Baishatun, Xipu, Rinan, Dajia, and Taichung Port)
- 03.25

Japan's Shinano Railway's visit to the TRA

To commemorate the anniversary of this Taiwan–Japan partnership, a delegation of 3 representatives from Japans Shinano Railway led by President and CEO Atsushi Tamaki visited the Qidu shunting yard at 10:00 a.m. accompanied by Chief Secretary Lai-shun Chu.
- 03.29

MOTC Minister Chia-lung Lin's awarding of meritorious people in the Songshan Station knife-wielding incident

MOTC Minister Chia-lung Lin arrived at the Taipei Main Station VIP room at 9:00 a.m. to express appreciation to TRA staff for remaining calm and executing their crisis training to defuse the incident involving a man threatening other passengers with a knife on the No. 1162 local train at Songshan Station on March 27. The man was jointly subdued by TRA employees and a passenger (Wei-wen Cheng), eliminating the threat of violence. Their efforts were commended by Minister Chia-lung Lin and Director General Cheng-yuan Chang.
- 03.31

MOTC Minister Chia-lung Lin's inspection of the Chengzhui line double-track project under the Forward-Looking Infrastructure Development Program with Deputy Director General Wei Tu
- 04.07

Successful fulfillment of 2019 Tomb-Sweeping Day consecutive holiday transportation duties

An additional 227 trains and 55 carriages operated for the 2019 Tomb-Sweeping Day consecutive holiday. Over the 5 days from April 3 to April 7, a total of 3,962,423 passengers and a daily average of 792,485 passengers were transported, which was a 3% decrease compared with the same period in 2017. Passenger transportation revenue totaled NT\$363,621,471 and reached a daily average of NT\$72,724,294, a 1% increase compared with the same period in 2017. (The 2019 holiday was compared with that of 2017 because they had the same transportation dates.)
- Director General Cheng-yuan Chang's inspection of Qidu region units and encouragement to Keelung subsection staff**
- 04.12

Department for International Trade Taiwan, British Office Taipei's visit to the TRA

Steve Firstbrook, Head of the Department for International Trade Taiwan, and Lynn Li, Head of Infrastructure at the British Office in Taipei were received by Director General Cheng-yuan Chang at 11:00 a.m. to exchange opinions on the TRA renewal plan and the possibility of future partnership and exchanges with the British railway industry (including vehicular safety, intelligent electric system, and new train purchases).

- 04.15

Formal establishment of the Subsidiary Businesses Operating Center to promote railway economies

The Subsidiary Businesses Operating Center was established to promote balanced development in the northern, central, southern, and eastern regions along all TRA lines. Director General Cheng-yuan Chang hosted a press conference in the Taipei Main Station VIP room announcing the center, and the placard was formally unveiled in front of the office. The center has business, tourism, and products departments. The center improves food hygiene and safety, highlights regional characteristics, expands the bento market, consolidates tourism activities, develops railway economies, creates branding for businesses, and strengthens sales channels by promoting the guidelines of the hazard analysis and critical control point system. The center also creates added value for railway economies through consolidated coordination and strong departmental competitive advantages to increase revenue.
- 04.16

Friendship agreement signing ceremony between Ichibata Electric Railway Company and the TRA

The friendship agreement signing ceremony between Ichibata Electric Railway Company and TRA was held at 10:00 a.m. at the Taipei Main Station lobby. Director General Cheng-yuan Chang and Ichibata President and Representative Director Shinji Yoshida signed the agreement. The signing ceremony was attended by the Tourism Bureau, Taiwan–Japan Relations Association, Taiwan Visitors Association, Railway Cultural Society, Transport Heritage Society of Taiwan, Society of Railway and National Planning, Taiwan and guests from Ichibata Electric Railway Company. We look forward to the friendship agreement promoting Taiwan–Japan exchanges and development of railway tourism in both countries.
- 04.17

Japanese company Kintetsu Group Holdings Co., Ltd's visit to the TRA

A delegation of six representatives, led by Director Tetsuya Kobayashi, from the Japanese company Kintetsu Group Holdings Co., Ltd was received by Director General Cheng-yuan Chang at 1:45 p.m. to exchange views on the development of affiliate businesses and management of tourism trains.
- 04.22

Director General Cheng-yuan Chang's inspection of Southern- and eastern-region stations (Fangliao, Longxi, Duoliang, Jinlun, Taimali, and Zhiben) to encourage local staff
- 04.23

Director General Cheng-yuan Chang's inspection of the Dounan Station construction and renovation project and stations in the Central region (Linnei, Tianzhong, Shetou (Railway Museum), Taichung, and Xinwuri) to encourage local staff
- 2019 Labor Day Recognition Ceremony**

The 2019 Labor Day cum Labor Recognition Ceremony was held in the TRA' s fifth-floor auditorium and was jointly hosted by Director General Cheng-yuan Chang and Director Wen-cheng Chang of the Taiwan Railway Labor Union. Director General Chang, MOTC Minister Chia-lung Lin, and Minister of Labor Ming-chun Hsu presented awards to 65 model employees.
- 04.24

Opening ceremony of the Puxin and Fugang Station beautification and renovation projects
- Technical exchange seminar on railroad safety between the TRA and Metrolink**
- 04.26

Metrolink's visit to the Fugang Base

Jerone Hurst, Head of Communication and Signals, and Luis Carrasquero, specialist in Positive Train Control at Metrolink, visited the Fugang Base at 10:00 a.m. They were received by Director General Cheng-yuan Chang and were provided a presentation and guided tour by the base director Shi-ben Chen.
- 04.29

Official departure of the Taiwan Railways of Popular Science train from Taipei Main Station

The TRA has organized the Taiwan Railways of Popular Science for 5 years. The departure ceremony was held at Taipei Main Station at 10:00 a.m.; Director General Cheng-yuan Chang accompanied Vice President Chien-jen Chen, Minister of Science and Technology Liang-gee Chen, and other guests to jointly begin the journey.
- 05.01

Director General Cheng-yuan Chang's inspection of Northern-region stations (Fuzhou, South Shulin, Shanjia, Yingge, Taoyuan, Neili, Zhongli, and Puxin) to encourage local staff.
- 05.02

Director General Cheng-yuan Chang's inspection of Central-region stations (Tai'an, Sanyi, Tongluo, and Miaoli) to encourage local staff.
- 05.06

Director General Cheng-yuan Chang's visit to Pingtung County Magistrate Men-an Pan











Director General Cheng-yuan Chang arrived at Pingtung County Government at 11:00 a.m. to visit County Magistrate Men-an Pan and discuss the urban renewal and development of the Pingtung Station commercial district, which is expected to attract manufacturer investment and drive local prosperity.







- 05.07
- Michelin meals on tourism trains
- The TRA and ezTravel held a press conference in the Taipei Main Station lobby, hosted by Director General Cheng-yuan Chang and ezTravel Vice President Kuan-chun Hsiao. Minister Lin, Taiwan Visitors Association Director Chu-lan Yeh, Tourism Bureau Director General Yung-hui Chou, and other honored guests were invited. The TRA and ezTravel partnered to subvert tradition and offer Michelin Bib Gourmand meals on the train along six travel routes to provide new flavor feasts to our passengers.
- 05.08
- Disaster prevention drills in the TRA Building
-
- 05.13
- Director General Cheng-yuan Chang's inspection of stations along the Central-region Jiji subline (Ershui, Checheng, Shuli, Jiji, Longquan, Zhuoshui, and Yuanquan flag stops) to encourage local staff.
-
- 05.14
- Disaster prevention drills by the Kaohsiung Transportation Branch's Kaohsiung Mobilization Office
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- 05.16
- Disaster prevention drills by Yilan Transportation Branch's Yilan Mobilization Office
-
- 05.20
- Erasmus University Rotterdam's visit to the TRA
- A delegation of 19 representatives from Erasmus University Rotterdam arrived at the TRA at 10:00 a.m. and was received by Director Cheng-te Yang and 13 staff of the Planning Department for an exchange on railway overview and a presentation on railway management.
- 05.29
- Successful investment seminar for the second urban renewal of Kaohsiung Station East
- An investment introduction seminar was held as the second recruitment attempt for the Kaohsiung Station East urban renewal project in the Shihzuwan Hotel Kaohsiung Branch Station at 2:00 p.m. on May 28, 2019, hosted by President Wen-chung Yen of the TRA's Real Estate Development Center. The event was attended by 31 vendors, and the development project is estimated to exceed NT\$10 billion in benefits and marks a new milestone in the TRA's first attempt to vitalize assets through property rights exchange.
- 05.30
- Disaster prevention drills by Hualien Transportation Branch's Hualien Mobilization Office
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- 05.31
- Official launch of the security management system to improve work safety
-
- 06.03
- TRA and Forestry Bureau coorganized the second Satoyama Animal Decorated Train
- The Forestry Bureau and TRA once again collaborated on the Eco-Corridor Satoyama Animal Decorated Train. The inaugural departure ceremony, hosted by Forestry Bureau Director General Hwa-ching Lin, was held at Nangang Station at 10:30 a.m. and involved TRA Director General Cheng-yuan Chang, Minister Chi-chung Chen of the Council of Agriculture, MOTC Minister Chia-lung Lin, and Legislator Wan-Ju Yu.
-
- 2019 Railway Economy and Urban Development Forum
- The 2019 Railway Economy and Urban Development Forum opened at 9:20 a.m. in the fifth-floor auditorium. Hosted by Director General Cheng-yuan Chang, the event was attended by more than 500 participants and featured Vice President Chih-jen Chen of Nomura Research Institute Taiwan, Chairman Chih-kang Ma of the Global Mall, Chairman Tsang-tsun Chien of Ruentex Development Company, and Vice President Wan-hsuan Lin of Classic Railway International. Industrial, government, and academic experts also attended the forum.
- 06.04
- 100th Anniversary of the TRA Yilan line, Su'ao-Jiaoxi branch
- The 100th anniversary of the southern branch of the Yilan line, hosted by Director General Cheng-yuan Chang, was held at Su'ao Station. MOTC Minister Chia-lung Lin, legislator Ou-po Chen, Yilan county magistrate Zi-miao Lin, Forestry Bureau Director General Hua-ching Lin, and representatives from Japanese railroad companies with whom we had former interactions attended the ceremony. To celebrate 132 years of the TRA, this event integrated local resources and was upgraded to include an international exchange. The event also included a cruise train from Su'ao to Jiaoxi. Driven by a CT273 steam locomotive, the cruise train carried passengers on a retrospective journey of the Yilan line's centennial history.
- 06.05
- TRA 132nd Anniversary Railway Festival: TRA132, Safe and Happy
-
- 06.08
- Taiwan Railways and Architectural Heritage Exhibition
- The Taiwan Railways and Architectural Heritage Exhibition, coorganized by the TRA and the Lea Lea Foundation, opened at 10:00 a.m. and was cohosted by TRA Director General Cheng-yuan Chang and Lea Lea Foundation Chairman Chuan-ching Guo. The exhibition was jointly unveiled by Tourism Bureau Director General Yung-hui Chou, Chunghwa Post President Jui-Tang Chiang, Taipei City Councilor Hui-chu Chin, and artist Mei-yun Wu. The TRA, Tourism Bureau, Chunghwa Post, and the Lea Lea Foundation jointly released memorial postal folds, and an album introducing the history of Taiwan's architectural heritage in illustrations and the outlook for Taiwan's railroad travel and postal services. We look forward to increasing public understanding of urban development while preserving the historical memory of 100 years of architectural splendor and rediscovering historical and cultural stories of Taiwan.

- 06.09
- Successful fulfillment of the 2019 Dragon Boat Festival consecutive holiday transportation duties
- An additional 144 trains and 253 carriages operated for the 2019 Dragon Boat Festival consecutive holiday. Over the 4 days from June 6 to June 9, a total of 2,937,481 passengers were transported, with a daily average of 734,370 passengers. This was a 6.04% increase compared with the same period in 2018. Passenger transportation revenue totaled NT\$273,416,569, yielding a daily average of NT\$68,354,142 and a 4.69% increase compared with the same period in 2018.
- 06.10
- Japan's Heisei Chikuho Railway's visit to the TRA
- A delegation of 13 representatives, led by President Kenichi Kawai, from Japan's Heisei Chikuho Railway was received at 10:00 a.m. by Deputy Director General Hui-sheng Feng at the TRA for an exchange on railroad tourism and tourism train management.
- 06.11
- Consensus camp among top-level managers to bring a new outlook for the TRA
- A two-day top-level manager consensus camp was hosted by Director General Cheng-yuan Chang. Invited speakers included Chairman Stanley C. Yen of The Alliance Cultural Foundation, Chairman Chi-yi Chang of the Taiwan Design Research Institute, CEO Stephanie Wen of the Taiwan Association of Fashion and Accessories Designers, Chairman Chin-der Ou of the Chi Po-lin Foundation, and Director General Kuo-chi Tseng of the National Property Administration, Ministry of Finance. These national-level speakers delivered keynote speeches on tourism marketing, aesthetic design, living aesthetics, operational safety, and industrial development. We look forward to gathering positive organizational momentum to create a high-performing corporate TRA team.
- 06.13
- Daisen City Councilor's visit to the TRA
- Councilor Takahashi Hisaichi from Daisen, Akita Prefecture, Japan, visited the TRA at 4:00 p.m. with a delegation of five other representatives to participate in an exchange on railway tourism and integrated local development.
- 06.19
- Adjustment to train schedules to improve eastern trunk peak transport capacity
- To increase rush-hour transport capacity of the eastern trunk, rider convenience on the western trunk, and train punctuality, schedules for 92 trains were slightly adjusted. Adjustments included adding a round-trip Puyuma express train between Shulin and Hualien on Saturdays and Sundays and cancelling the trial holiday schedule.
- 06.20
- Nippon Travel Agency Company's visit to the TRA
- A delegation of five representatives led by the President and Representative Director Akihiro Horisaka from Nippon Travel Agency Co. was received at 11:00 a.m. by Director General Cheng-yuan Chang. Nippon Travel Agency Company thanked the TRA for continued support in organizing the JAPAN Travel & Products EXPO and looked forward to further exchanges between the two companies in marketing railway travel globally.
- 06.21
- JR-Shikoku's visit to the TRA
- A delegation of five representatives led by the President and Representative Director Shinji Hani from JR-Shikoku was received by Director General Cheng-yuan Chang at 4:30 p.m. as part of the companies' partnership on railroad tourism and tourism train management.
- 06.23
- Director General Cheng-yuan Chang and delegation's visit to Japan's Hisatsu Orange Railway Company to formalize partnership
- Director General Cheng-yuan Chang led a delegation including Director Chin-sung Chang of the Transportation Department, Director Hung-kang Sung of the Rolling Stock Department, Director Chen-chao Huang of the General Affairs Department, Director Shih-hsien Huang of the Subsidiary Businesses Operating Center, Director Wen-chung Yen of the Real Estate Development Center, Secretary Chu-ping Hsu, and Mr. Kuo-wen Huang from the Rolling Stock Department to Japan to attend a ceremony formalizing the TRA and Hisatsu Orange Railway as sister railways at Minamata Station in Kumamota Prefecture. Director General Chang and Hisatsu Orange Railway President Yasutaka Ida signed the memorandum of friendship to formalize Hisatsu Orange Railway as the TRA's 22nd Japanese sister railway company, symbolizing the friendship between Japanese and Taiwanese railways and opening opportunities for joint railway tourism promotion.
- 07.03
- Hello Kitty-themed tourism train launch in a three-way partnership between the TRA, ezTravel, and Sanrio Taiwan
- A Hello Kitty-themed train was launched in a three-way partnership between the TRA, ezTravel, and Sanrio Taiwan. The inaugural departure ceremony was held at Nangang Station at 10:30 a.m. and hosted by Director General Cheng-yuan Chang. MOTC Minister Chia-lung Lin, Tourism Bureau Director General Yung-hui Chou, ezTravel Vice President Kuan-chun Hsiao, and Sanrio Taiwan President Ming-hsun Lee jointly launched the event. In addition to the train's remodeled exterior, the carriage interior was remodeled to provide an all-new experience for passengers and use the popularity of Hello Kitty to begin a new trend in railway tourism.
- 07.04
- 6 Year Plan for Railway Safety Improvement: slope lifecycle maintenance and management (alert and management system) construction launch
-

- 07.05
- Aomori Railway's visit to the TRA**
A delegation of seven representatives led by the Representative Director Kochi Chiba from Japan's Aomori Railway was received by Deputy Director General Jen-tsai Hsu at 2:00 p.m. to participate in a discussion on becoming sister railways.
- 07.10
- Japan's Yuri Kogen Railway's visit to the TRA**
A delegation of seven representatives led by the President & Representative Director Michio Kayaba from Japan's Yuri Kogen Railway was received by Deputy Director General Jen-tsai Hsu at 3:00 p.m. to participate in a discussion on the development of railroad tourism over the last 5 years of partnership.
- 07.10
- 2019 Civil-Service Ethics Personnel Training**
Introductory and advanced trainings for civil-service ethics personnel in transportation and communication businesses were held separately in the first and second conference rooms at 9:00 a.m. and attended by approximately 116 persons. The training was hosted by Director General Cheng-yuan Chang as part of the anticorruption campaign policies to achieve justice and prevent malpractice by effectively improving the competency of civil-service ethics personnel and implementing anticorruption guidelines. Deputy Director Chao-kai Tseng of the Ministry of Justice's Department of Planning, Section Chief Chun-hsiang Huang of the Ministry of Justice's Agency Against Corruption, and Deputy Director Chueh Wang of the MOTC's Department of Civil-Service Ethics delivered lectures. Deputy Director Chueh Wang recognized outstanding civil-service ethics personnel with awards.
- 07.22
- TRA West Coast line (Taichung to Kaoshiung) and Japan's Aomori Railway's sister railway ceremony**
The ceremony formalizing the TRA and Aomori Railway as sister railways was held at 4 p.m. in the Taipei Main Station lobby. Director General Cheng-yuan Chang and Aomori Railway Representative Director Kochi Chiba signed the memorandum of becoming sister railways, witnessed by MOTC Minister Chia-lung Lin and Governor Shingo Mimura of Aomori Prefecture. Representatives from the Taiwan-Japan Relations Association, Taiwan Visitors Association, Japan-Taiwan Exchange Association, Taiwan-Japan Friendship Supporters of Railways, and Aomori Prefecture industrial and commercial groups also attended the event, to promote Japan-Taiwan exchanges and mutual railway tourism development.
- 07.29
- MOTC Minister Chia-lung Lin and TRA Deputy Director General Hui-sheng Feng's accompanying Legislator Tzu-yung Hung in inspecting the Old Mountain Line**
- 08.13
- 6 Year Plan for Railway Safety Improvement: Launch of Hsinchu Station's men's and womens' restroom improvements**
- 08.23
- Kingdom of Eswatini Minister of Public Works and Transport Chief Ndhlulhaza Ndwandwe's visit to the TRA**
A delegation of four representatives from the Kingdom of Eswatini, including Minister of Public Works and Transport Chief Ndhlulhaza Ndwandwe and Ambassador Thamie Dlamini, was received by Director General Cheng-yuan Chang, Deputy Director General Hui-sheng Feng, and the heads of Transportation, Construction, Rolling Stock, and Electrical Engineering Departments. In addition to touring the traffic control center and emergency response center, the delegation sought to understand the direction of the TRA's development. We look forward to promoting more bilateral partnerships through the Ministry of Foreign Affairs and ambassador visits.
- 08.23
- Recognizing TRA at the 2019 Happiness Enterprise Awards—Service Industry Voting**
In 2019, 1111 Job Bank hosted the 2019 Happiness Enterprise Awards—Service Industry Voting at the Marriott Taipei. The event was attended by more than 700 businesses, and the TRA received honorary recognition in the 1111 Job Bank Service Industry Happiness Survey and Land Transportation categories. Chief Secretary Lai-shun Chu received the awards on behalf of the TRA.
- 08.24
- Completion of Taipei Station Union Emergency Operation Center**
- 09.02
- Establishment of the Puyuma Express special inspection team**
- 09.16
- Successful fulfillment of the 2019 Mid-Autumn Festival consecutive holiday transportation duties**
An additional 166 trains and 366 carriages operated for the 2019 Mid-Autumn Festival consecutive holiday. Over the 5 days from September 12 to September 16, the TRA served a total of 3,711,334 passengers and a daily average of 742,267 passengers, which indicated a 0.33% decrease compared with the same period in 2018. Passenger transportation revenue totaled NT\$342,035,450, yielding a daily average of NT\$68,407,090 and a 0.35% decrease over the same period in 2018.

- 09.17
- Contract signing for the Build, Operate, and Transfer Project of Keelung City Keelung Station South Parking Lot**
The MOTC, TRA, and Keelung City Government held the commissioned development contract signing ceremony for the Build, Operate, and Transfer (BOT) Project of Keelung City Keelung Station South Parking Lot at 2:00 p.m. in the Keelung Station South Plaza. The contract was signed by MOTC Deputy Minister Yu-lin Huang, TRA Director General Cheng-yuan Chang, and Keelung City Mayor Yu-chang Lin. Attendees included Legislator Shih-Ying Tsai, Deputy Minister of Finance Tsui-yun Chuang, and National Policy Advisors Yung-kuo Tung and King-hua Chang.
- 09.21
- First Babaozhen Bridge Renovations—East Main Line bridge cutover**
- 09.25
- Employee welfare committee organized employee group marriages to celebrate happy unions**
- 09.26
- Awarding of a Golden Thumb to Wanhua Station Building BOT project for shaping station and urban development**
- 10.01
- Opening of the Taipei Station Union Emergency Operation Center**
The construction of the Taipei Station Union Emergency Operation Center began on July 31, 2018; after 1 year, the center officially opened on October 1, 2019. The center ensures emergency evacuation and passenger safety by monitoring Taipei Main Station (TRA, THSR, MRT red and blue lines, and the Taoyuan Airport MRT as well as the underground malls and Breeze Center) and its nine entities and units and establishing a unified information-management system. Tasks include performing equipment control and operation, providing information about disasters, coordinating normal time management, and conducting emergency response during disasters.
- 10.04
- Ichibata Electric Railway Company's visit to the TRA**
A delegation of six representatives from Ichibata Electric Railway, led by newly appointed President & Representative Director Mitsuo Takada, was received by Director General Cheng-yuan Chang at 9:00 a.m. to discuss future exchanges.
- 10.13
- Successful fulfillment of the 2019 National Day consecutive holiday transportation duties**
An additional 219 trains and 463 carriages operated for the 2019 National Day consecutive holiday. Over the 5 days from October 9 to October 13, a total of 4,184,000 passengers were transported at a daily average of 837,000 passengers, a 6.2% increase compared with the same period in 2017. Passenger transportation revenue totaled NT\$379,500,000, with a daily average of NT\$75.9 million, which was a 1.3% decrease compared with the same period in 2017.
- 10.17
- Formal unveiling of the Taipei Station Union Emergency Operation Center**
The placard of the Taipei Station Union Emergency Operation Center was officially unveiled at 10:00 a.m. in the basement of the East Wing. The event was hosted by Deputy Director General Hui-sheng Feng. Taiwan High Speed Rail Corporation Vice President Wei-tung Lu, Taipei Rapid Transit Corporation Vice President Ying-chen Chuang, Taoyuan Mass Rapid Transit System Vice President Ting-han Chen, Deputy Commissioner of Finance Shih-ming You, and Breeze Group Vice President Sheng-chieh Yang also participated in the unveiling. Taipei Main Station is a valuable transportation hub for passengers and a capital commercial district; the Taipei Station Union Emergency Operation Center was established to improve the overall railway operations and disaster prevention efficiency of entities in Taipei Main Station, including underground administrative units, and commercial businesses. The center's joint command and disaster control mechanisms aim to reduce Taipei Main Station's disaster losses and effectively prevent major disasters.
- 10.19
- The Puyuma Accident Memorial in Taipei Main Station Plaza**
The derailment of the No. 6432 Puyuma Express train at Xinma Station on October 21, 2018 resulted in the deaths of 18 passengers and injuries to 288 others. On the evening of the derailment's first anniversary, the TRA invited the families of the deceased and injured passengers to the Puyuma Derailment Anniversary Memorial. The memorial event was attended by MOTC Minister Chia-lung Lin, Taitung County Magistrate Ching-ling Rao, and Legislator Kuo-chang Huang and Chao-Hao Liu, and Director General Cheng-yuan Chang with the TRA top-level managers. Director General Chang personally expressed his condolences to the family members and expressed his commitment to continually care for the injured passengers by establishing a foundation to provide continuous care. The theme of the memorial was "the guidance and blessing of light." Taitung Puyuma community elders were invited to sing ancient songs accompanied by the Taitung County Hsin-Sheng Junior High School Choir. After the memorial, the TRA team again expressed their greatest condolences to the affected relatives and injured passengers to successfully and peacefully conclude the memorial.

- 10.23  Disaster prevention drill by the Taipei Station Union Emergency Operation Center
The Taipei Station Union Emergency Operation Center held a joint drill at 2:00 p.m. hosted by Taipei City Mayor Wen-je Ko. Drill participants also included Deputy Director General Jen-tsai Hsu, the Executive Yuan's Office of Disaster Management Chief Wu-tai Wu and Office of Homeland Security Chief Chun-tai Huang, MOTC Deputy Minister Yu-lin Huang, Railway Bureau Chief Secretary Kuo-chen Rao, Taiwan High Speed Rail Corporation Vice President Wei-tung Lu, Taipei Rapid Transit Corporation Vice President Ying-chen Chuang, and Taoyuan Metro Corporation President Ho-cang Pu. Seibu Railway Company Managing Director Noriaki Iida came here specially to observe the drill.
- 10.29  *iHappiness Train to Markets, Anti-bribery in Elections* campaign
To effectively prevent bribery in elections, the TRA partnered with the New Taipei District Prosecutors Office and the Taiwan After-Care Association, New Taipei branch to organize the iHappiness Train to Markets, Anti-bribery in Elections campaign at the basement plaza of Banqiao Station.
- 10.30  Signing of the *Taipei Main Station E1/E2 Corridor Urban Regeneration Project* development partnership contract
The TRA signed a development partnership contract with the Taipei Urban Regeneration Center on September 23 and held the Taipei Main Station E1/E2 Corridor Urban Regeneration Project development partnership contract signing ceremony on October 30 at 4:00 p.m. Taipei City Deputy Mayor cum Urban Regeneration Center Chairman Cheng-sheng Pong and Director General Cheng-yuan Chang signed the contract, which is expected to promote the development and reuse of public land and build new attractions in western Taipei while increasing the benefits of TRA asset vitalization.
- 11.01  Fourth International Railway Bento Festival in 2019
- 11.06  Representatives of Kusu, Oita Prefecture, Japan's visit to the TRA
A delegation of three representatives led by the General Affair Chief Nobuo Ishii from Kusu, Oita Prefecture, Japan was received by Deputy Director General Hui-sheng Feng at 9:00 a.m. Both parties discussed the sister garage signing ceremony scheduled to occur in Kusu on December 6, 2019.
- 11.15  2019 Railway Fatigue Management Seminar
The TRA and the Taiwan Transportation Safety Board coorganized the 2019 Railway Fatigue Management Seminar, which was held at 9:00 a.m. in the first conference room. The seminar was hosted by Director General Cheng-yuan Chang. Two specialists in fatigue management from the United Kingdom, Douglas Mellorru and Barbara Stone, were invited to speak on fatigue management in railroad industries and response strategies.
-  *Join Hands to Fight Bribery and Promote Democracy* campaign
The TRA partnered with the Taipei District Prosecutors Office and the National Immigration Agency, Ministry of the Interior, to hold the Join Hands to Fight Bribery and Promote Democracy campaign in the Taipei Main Station lobby at 2:00 p.m.
- 11.18  Signing of a group agreement between the TRA and Taiwan Railway Labor Union
The TRA and the Taiwan Railway Labor Union (enterprise union) have conducted monthly group negotiations since 1989. After 297 union talks over the past 30 years, an official contract signing was held in the first conference room. With MOTC Minister Chia-lung Lin and Minister of Labor Ming-Chun Hsu as witnesses, Director General Cheng-yuan Chang and Union Director Wen-cheng Chang signed a group agreement that protects employees' rights and improves labor conditions. The purpose of the agreement is to fulfill transportation obligations and ensure railway safety and passenger rights to create an advantageous and harmonious work environment for both employers and employees.
- 11.27  Inspection of Kaohsiung region transportation infrastructure by Legislator Kun-Tse Lee (Transportation Committee)
Legislator Kun-Tse Lee of the Legislative Yuan Transportation Committee was accompanied by MOTC Minister Chia-lung Lin and Director General Cheng-yuan Chang while inspecting Kaohsiung Station's planning and outsourcing of peripheral parking operations, directions to neighboring commercial districts, and strategic marketing campaigns.
- 11.30  Introduction to the TRA's new aesthetic and innovative intercity train
The new aesthetic and innovative intercity train introductory seminar was held at 10:00 a.m. and hosted by Chief Secretary Lai-shun Chu. Legislator Bi-Khim Hsiao, Director General Shinn-shyh Nien of the Ministry of Foreign Affairs' Eastern Taiwan Office, and other VIPs attended the seminar. The new intercity train promotes transportation aesthetics by combining aesthetic perspectives to promote railway design. The TRA will engage in comprehensive aesthetic innovation by enhancing the corporate image of our stations, carriages, and online and media marketing presence by purchasing 50 units of twelve-carriage intercity trains. After these trains begin operation, old trains will be replaced to improve travel services in the eastern region.

- 12.01  Introduction of the TRA's new aesthetic and innovative intercity train at Taitung Station
- 12.09  Echigo TOKImeki Railway Company President's visit to the TRA
Echigo TOKImeki Railway Company President Ryo Totsuka was received by Deputy Director General Wei Tu at 9:30 a.m. to discuss future partnerships.
- 12.13  FUTURE-RENAISSANCE: TRA Aesthetic Renaissance series
 1. The FUTURE-RENAISSANCE Exhibition was held from December 13 to December 22, 2019 in the Taipei Main Station lobby to display newly purchased train models and their remodeled design. The exhibition also included an air-conditioned EMU designed by the Korean company Hyundai Rotem, intercity EMUs designed by the Japanese company Hitachi, and an orange-and-black tourist train designed in Taiwan to demonstrate the TRA's activeness in innovation.
 2. The tourist train design and remodeling experience program officially launched when MOTC Minister Chia-lung Lin and Director General Cheng-yuan Chang pulled the train whistle on December 13 at 10:00 a.m. to mark the beginning of the FUTURE-RENAISSANCE series of activities. On-site virtual reality allowed the public to experience new train-carriage designs, and the orange-and-black FUTURE tourist train was unveiled for its inaugural departure at Keelung Station. The interior design is minimalist with warm lighting that resembles stepping into the welcoming ambience of a hotel, exhibiting the TRA's 100-year brand value while reinventing its image.
 3. The FUTURE-RENAISSANCE Forum was held at the TRA Auditorium at 1:20 p.m., December 13. The forum was hosted by Director General Cheng-yuan Chang, and opening remarks were delivered by MOTC Minister Chia-lung Lin. TRA and elite members of different industries collaborated to create Taiwan railway aesthetics, which introduce the soft power of design to drive innovative thinking. Special guests included train designers and railway specialists, such as Hitachi designer Sho Nozue; Hyundai Rotem President and CEO Kim Seungtak; MBD creative director Phitippe Georgel; J.C. Architecture founder Johnny Chiu; Chung Yuan Christian University professor of architecture Kuang Tsung Tseng; Rail News editor-in-chief Tingwei Ku; CommonWealth Magazine president Ying-chun Wu; T Fashion CEO Stephanie Wen; LuxuryLogico co-founder Kun-Ying Lin; and Romantic Route 3 creative director Han Wu. Together, they participated in the metamorphosis and rebirth of Taiwanese railways, breaking the mold by combining innovation thinking and skills with process transformation to create an all-new tourist train image.
- 12.19  Railway Technical Research Institute's visit to the TRA
A delegation of six representations from Railway Technical Research Institute, led by its President, Dr. Norimichi Kumagai, was received by Deputy Director General Hui-sheng Feng at 9:30 a.m. to discuss vital railroad topics (e.g., electric power, signals, and tracks). Each party presented on weather disaster prevention. We look forward to future partnerships through these exchanges of opinions.
- 12.23  Opening ceremony of the electrification of the South-link line from Chaozhou to Fangliao
The opening ceremony for the electrification of the South-link line from Chaozhou to Fangliao was held by the TRA at 1:30 p.m. with opening remarks by Premier Tseng-chang Su. Deputy Director General Hui-sheng Feng accompanied MOTC Minister Chia-lung Lin, Pingtung County Magistrate Men-an Pan, and other guests to begin the inaugural journey. In the future, western electrified trains can run directly to Fangliao to optimize transfers between TRA and THSR trains. Direct trains between Xinzuoing Station and Fangliao Station increased from 30 to 60, significantly reducing transfer times. Convenient transfers will effectively revitalize the tourism industry in the Hengchun Peninsula and drive development in the Pingtung region.
- 12.24  MOTC Minister Chia-lung Lin's inspection of the Chenggong-Zhuifen subline double-track project
MOTC Minister Chia-lung Lin, accompanied by Deputy Director General Wei Tu, inspected the progress in the construction of double tracks along the Chenggong-Zhuifen subline. Chief Wo-fan Chu of the Taichung Construction Branch presented on the construction status. Minister Lin inspected progress on the Chenggong relay room, subgrade, tracks, and tram line as well as encouraged and expressed thanks to the on-site staff.



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