



AND Model - Anadolu Model Demiryolları

# Taurus Mountains Route



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User guide  
**2022**

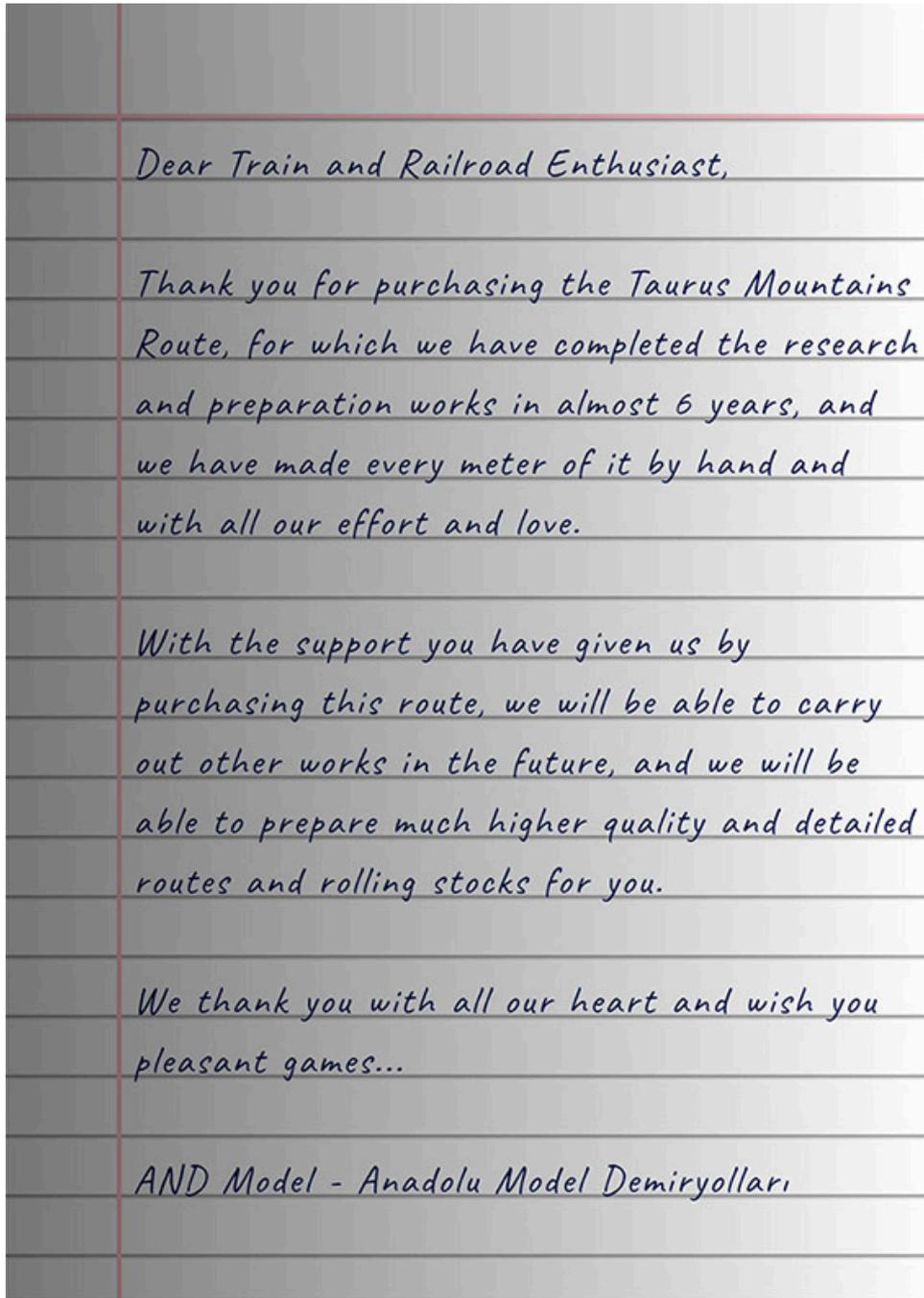
**Warning:** Taurus Mountains Route only works in **64-bit** version of the game. The *32-bit* version may encounter bugs and crashes as it could not handle the detail level of the route.

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## 1. WELCOME MESSAGE



Welcome to the "**Taurus Mountains**" route prepared for you by **AND Model - Anadolu Model Demiryolları**.

In this user manual, you will find detailed information about both the route and the rolling stock.

## 2. ROUTE INFORMATION

**Taurus Mountains** route starts from **Ulukışla** district of Niğde city in the south of Turkey, crosses the famous **Taurus Mountains** along the southwest-southeast axis.



It is a route that ends in the middle of the **Adana - Mersin** railway line located in the heart of **Çukurova**, Turkey's largest grain and cotton production area, reaching **Yenice**, a town of **Tarsus** county.

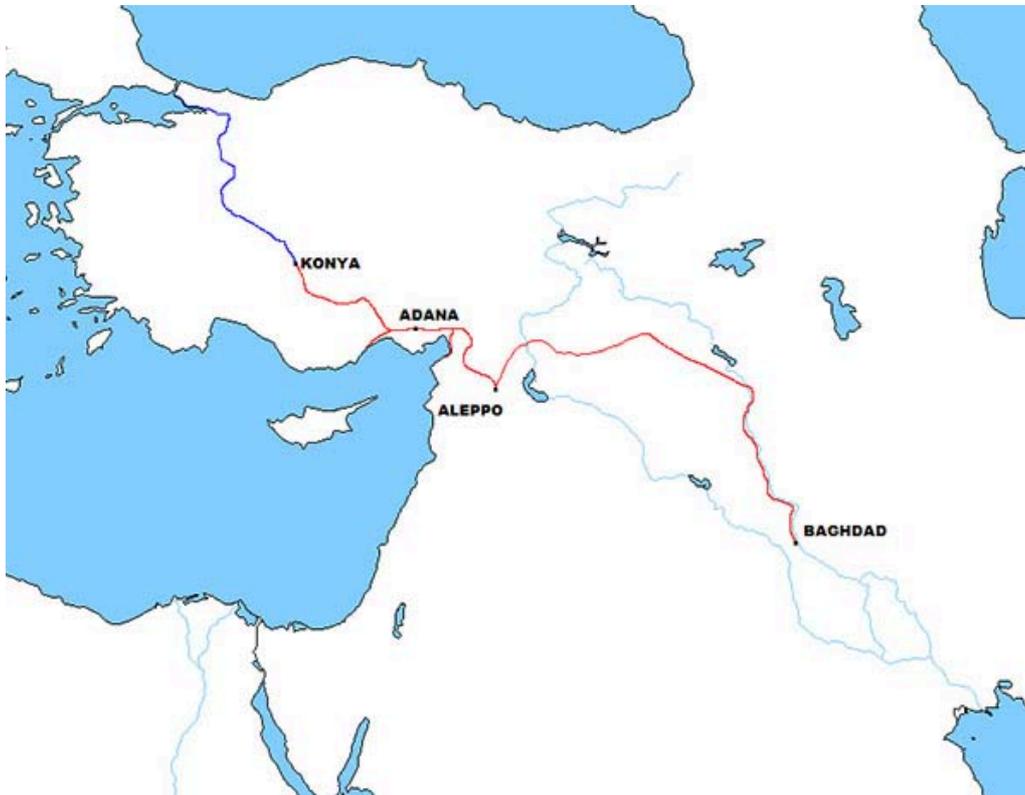


This region has a very rich and detailed history, starting from the **Hittites** and **Cilicians**, to the **Romans**, then to the 1st and 2nd **World Wars** and finally to the present day.

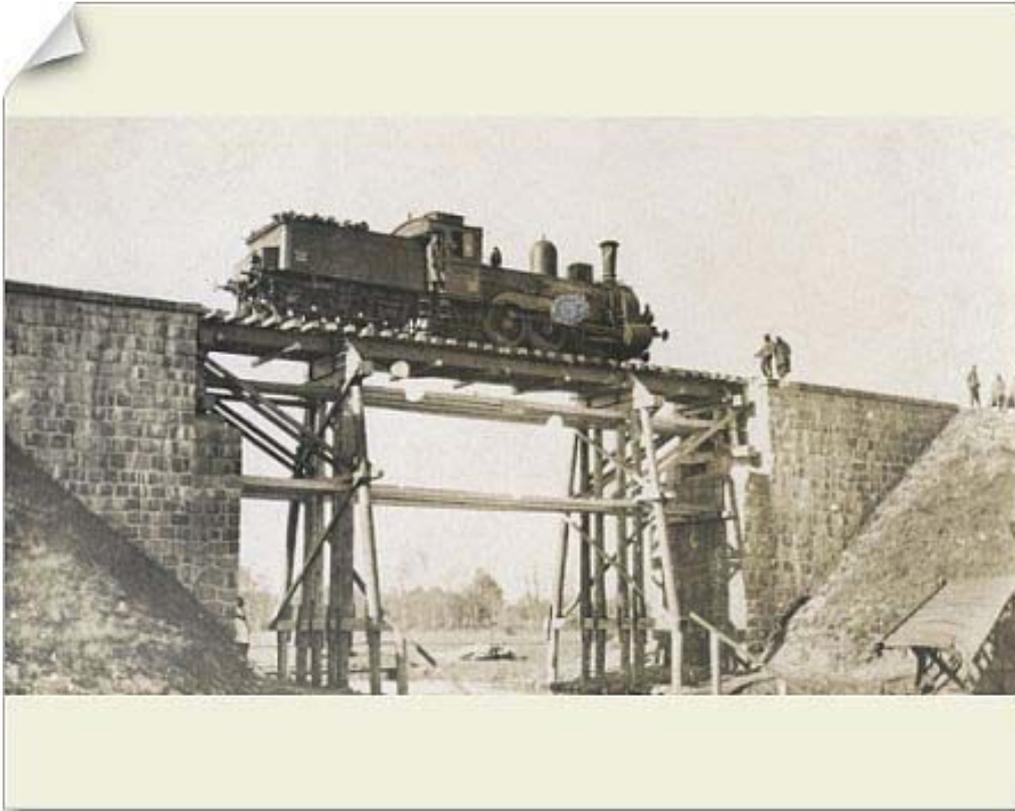


## 2.1. History

**The Baghdad railway**, also known as the **Berlin–Baghdad railway**, was initially started in 1903 but was not completed until 1940 to connect Berlin with the then Ottoman city of Baghdad, from where the Germans wanted to establish a port on the Persian Gulf, with a 1,600 kilometres (1,000 mi) line through modern-day Turkey, Syria, and Iraq.



Completion of the project took several decades and by the outbreak of **World War I**, the railway was still 960 km (600 miles) away from its intended objective. The last stretch to Baghdad was built in the late 1930s and the first train to travel from **Istanbul to Baghdad** departed in 1940.



Funding, engineering and construction was mainly provided by the **German Empire**.



### 2.1.1. World War I

The railway became a source of international disputes during the years immediately preceding **World War I**. Although it has been argued that they were resolved in 1914 before the war began, it has also been argued that the railway was a manifestation of the imperial rivalry that was the leading cause of **World War I**.



Technical difficulties in the remote **Taurus Mountains** and diplomatic delays meant that by 1915 the railway was still 480 kilometres (300 mi) short of completion, severely limiting its use during the war in which Baghdad was captured by the British while the **Hejaz railway** in the south was attacked by guerrilla forces led by **T. E. Lawrence**.



By 1915, the railway ended some 80 kilometres (50 mi) east of **Diyarbakır**. Another spur, heading east from Aleppo, ended at **Nusaybin**. Additionally some rail was laid starting in Baghdad reaching north to **Tikrit** and south to **Kut**. This left a gap of some 480 kilometres (300 miles) between the railway lines.



Additionally, there were three mountains which the railway was going to go through, but the tunnels through these three mountains were not complete. So the railway was, in fact, broken into four different sections at the start of the war. The total time to get from Istanbul to Baghdad during the war was **22** days. The total distance was 2,020 kilometres (1,260 mi)

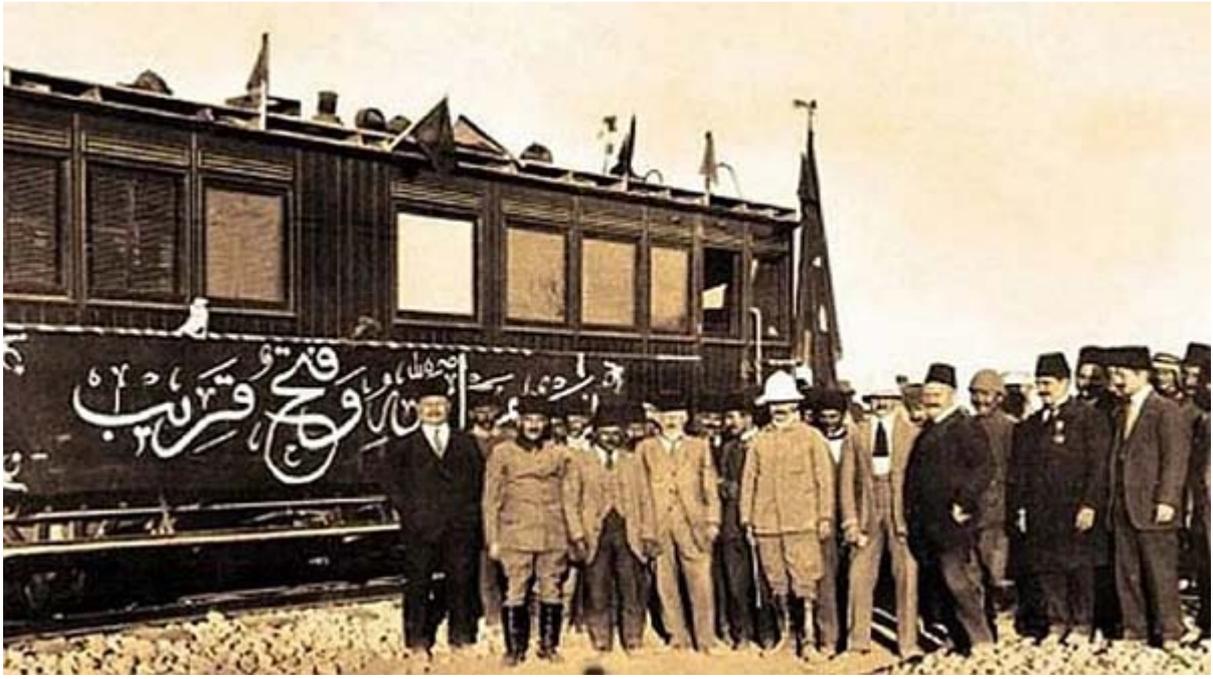
During the conflict, **Turkish** and **German** workers, together with allied prisoners of war, laboured to complete the railway for military purposes but with limited manpower and so many more important things to spend money on, only two of the gaps were closed.



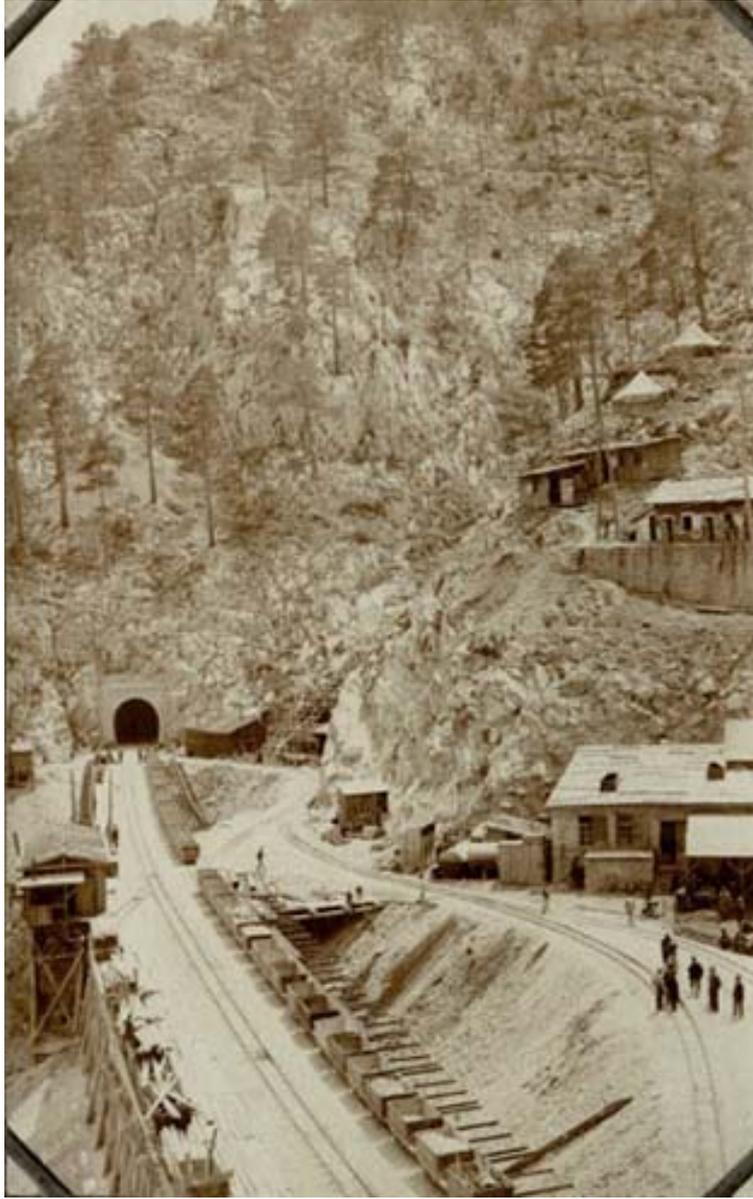
In 1919, the **Treaty of Versailles** cancelled all German rights to the Baghdad railway.

In the **Ulukışla - Yenice** railway section, which is the section where our **Taurus Mountains** route passes, things developed as follows. The construction of Toros Railways started with the contract signed by the Ottoman Sultan Abdulhamit II and the German Emperor Kaiser Willhem in 1888, and a large construction site was established in **Belemedik** in 1905.

With the project, it was planned that the Ottomans would transport soldiers, goods and passengers, and that the Germans would reach the oil resources they needed.



Between **Belemedik** and **Hacıkırı**, the most important and difficult crossing point of the train line, 22 tunnels with a total length of 12 kilometers were opened by the Germans. It took **20** years for the tunnels to be completed and opened. (1888 - 1909)



A total of 37 tunnels were opened between **Ulukışla** and **Yenice**.

## 2.1.2. After the War

The railway line, including the **Taurus Mountains** route, was built by the **Chemins du Fer Impérial Ottomans de Bagdad (CIOB)** Company for the Baghdad Railway line between 1903 and 1912 and was operated by this company until 1924.

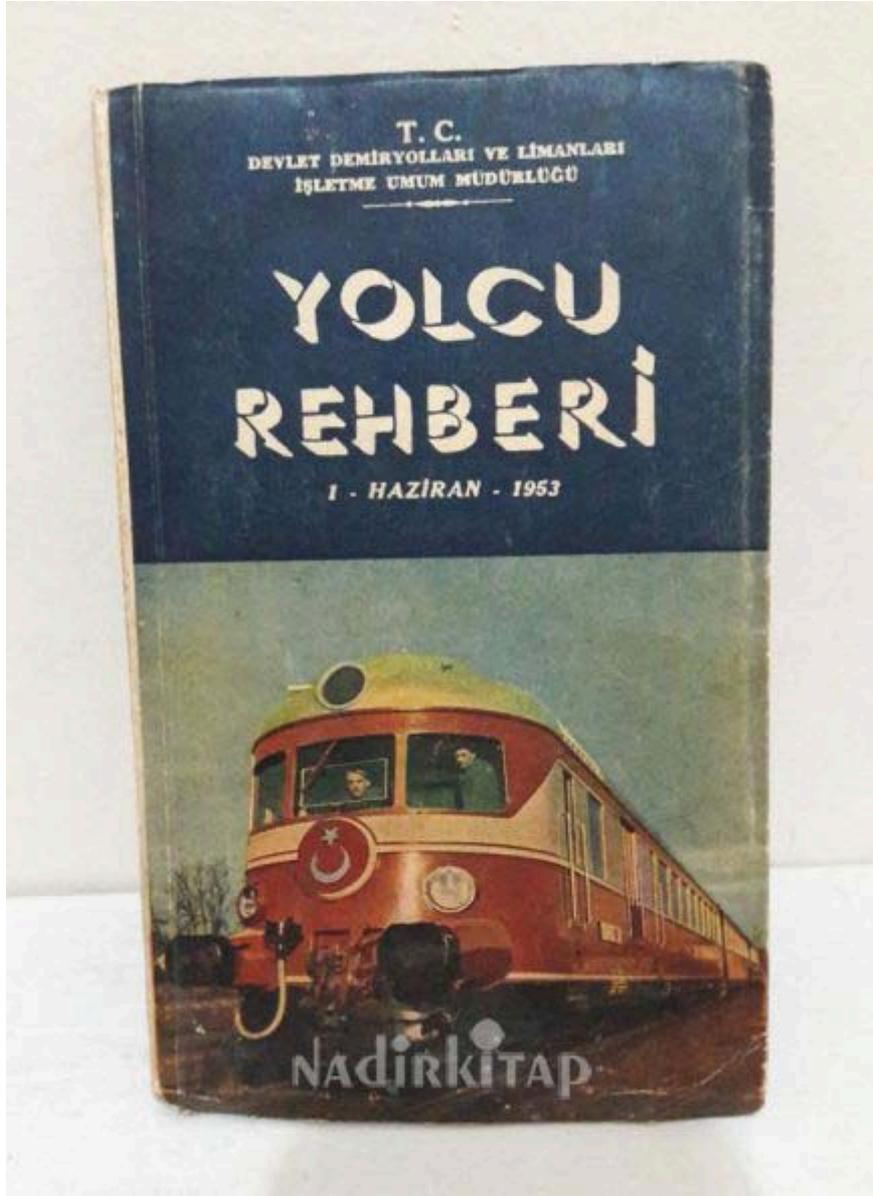


As of 1924, the part of the Baghdad Railway line between **Konya** and **Pozanti** was purchased by the **Chemins de fer d'Anatolie Bagdad (CFAB)** Company under the control of the government of the **Republic of Turkey**. In 1927, CFAB Company and the lines operated by this company were transferred to the **State Railways and Ports Administration**, and in 1929, this institution was renamed the **General Directorate of State Railways**.



The part of the railway line between **Pozanti - Yenice**, along with the rest of the Baghdad Railway line, was first taken over by the French-controlled **Chemins de fer de Cilicie-Nord Syrie (CNS)** Company in 1918, then this company was renamed **Chemins de Fer Bozanti-Alep-Nissibine & Prolongements (BANP)** in 1927.

In accordance with the agreement made between the government of the **Republic of Turkey** and **BANP** in 1932, the parts of the railway line within the borders of Turkey were transferred to the **Cenup Railways (CD)** Company, which was a Turkish company. CD Company was purchased and dissolved by the government of the **Republic of Turkey** in 1948 and the lines operated by this company were transferred to the **General Directorate of State Railways**, the predecessor of **TCDD**.



### 2.1.3. Present Day

Today, all railway lines within the borders of the **Republic of Turkey** are operated by the **Turkish State Railways (TCDD)**.

**Konya - Yenice** railway is the railway line between **Konya - Karaman - Ulukışla - Pozantı - Yenice**. The line is the main conventional freight and passenger train route from **Konya** to **Mersin** and **Adana**.

Today, the modernization of the line has been completed and the entire line has been electrified and signaled. Work has started to transform the section between **Konya** and **Yenice** into a high-speed train line and connect it to the **Ankara-Konya High-Speed Train** line.



#### Note:

We recommend playing the following scenarios to experience all the details described in this chapter in-game:

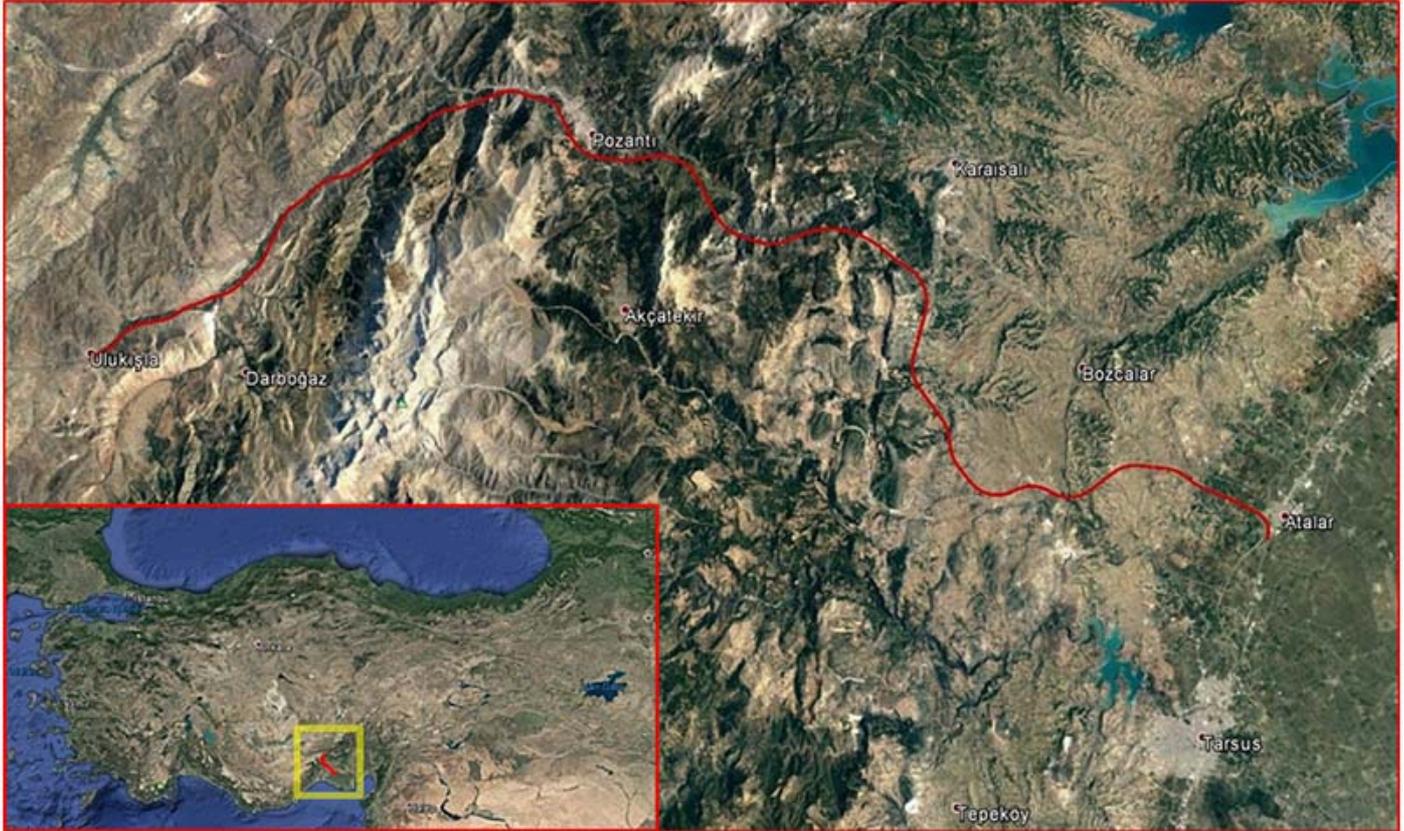
#### Standard Scenarios;

5 - Introduction to the Taurus Mountains (Part 1)

6 - Introduction to the Taurus Mountains (Part 2)

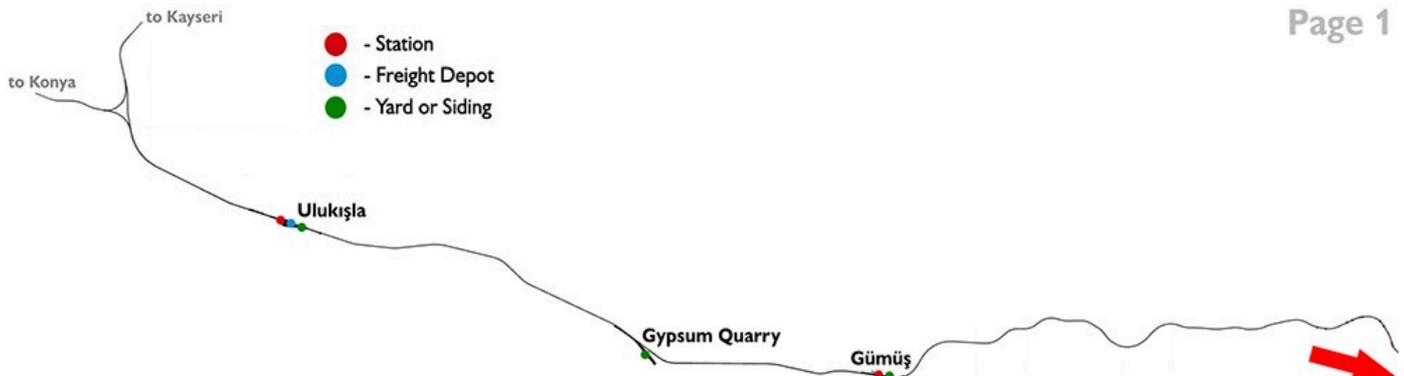
## 2.2. Route Map

**Taurus Mountains** route is **125 km (78 mi)** long between **Ulukışla** and **Yenice**, fully signaled and without electrification, mostly mountainous scenic route as the name suggests. Almost all of the line is a single line.



The starting point of the line is the wye northwest of **Ulukışla Station** (*Turkish pronunciation: Ulukishla*). From this point, the line splits into two towards the north-northwest direction. The line to the north goes to the city of **Kayseri**, while the line to the west goes to the city of **Konya**.

After **Ulukışla**, when you head towards southeast, the next station is **Gümüş Station** (*Turkish pronunciation: Guumuush*). **Ulukışla Gypsum Quarry** sidings can be reached by a separate line between **Gümüş** and **Ulukışla Stations**.



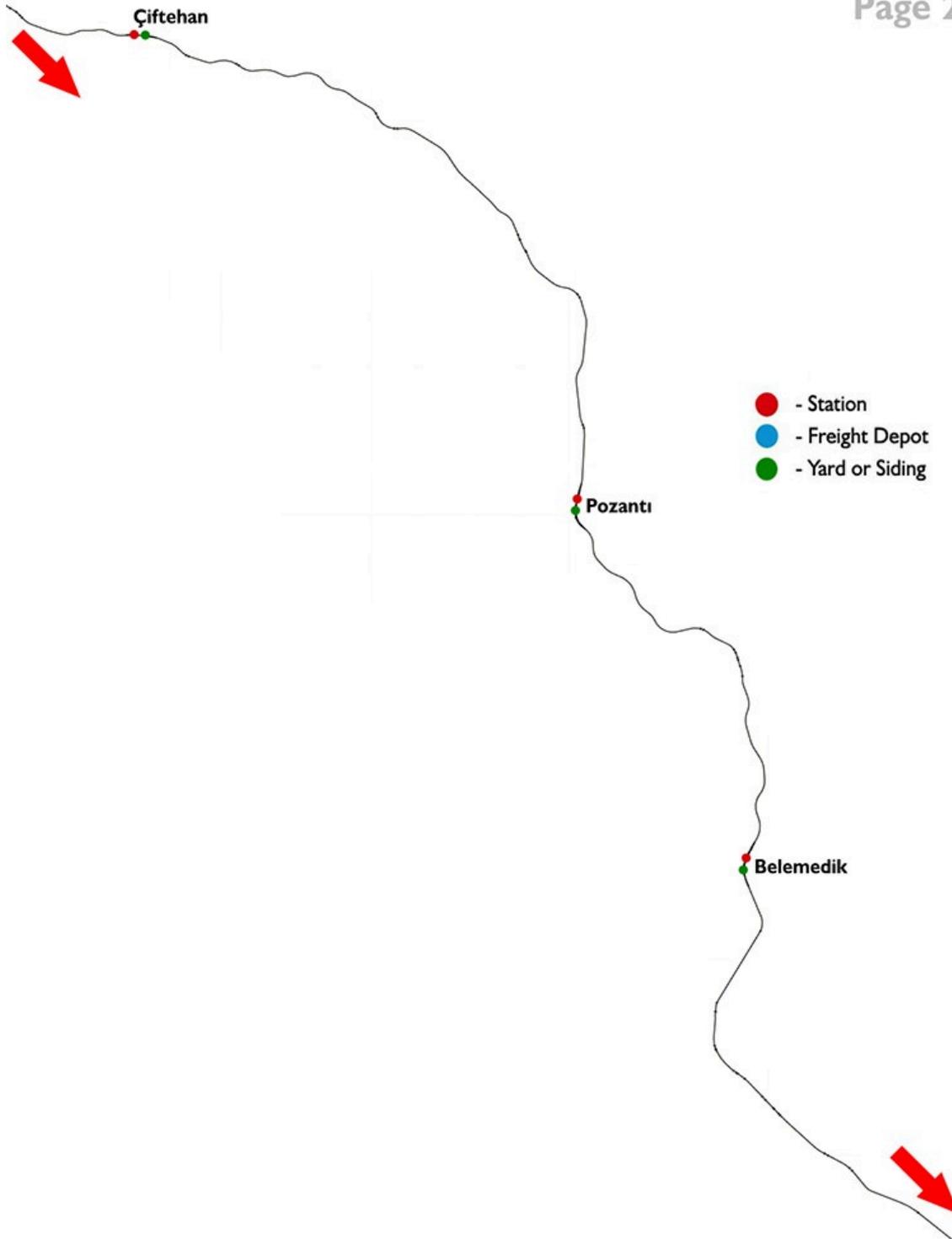
Page 1

After **Gümüş Station**, the next station in the southwest direction is **Çiftehan Station** (*Turkish pronunciation: Chiftehan*), which is famous for its thermal springs.

After **Çiftehan**, you can reach the historical **Pozantı Station** (*Turkish pronunciation: Pozanti*). At this station, you can also see the locomotive depot and water tower that was used during the steam locomotives era and is now closed.

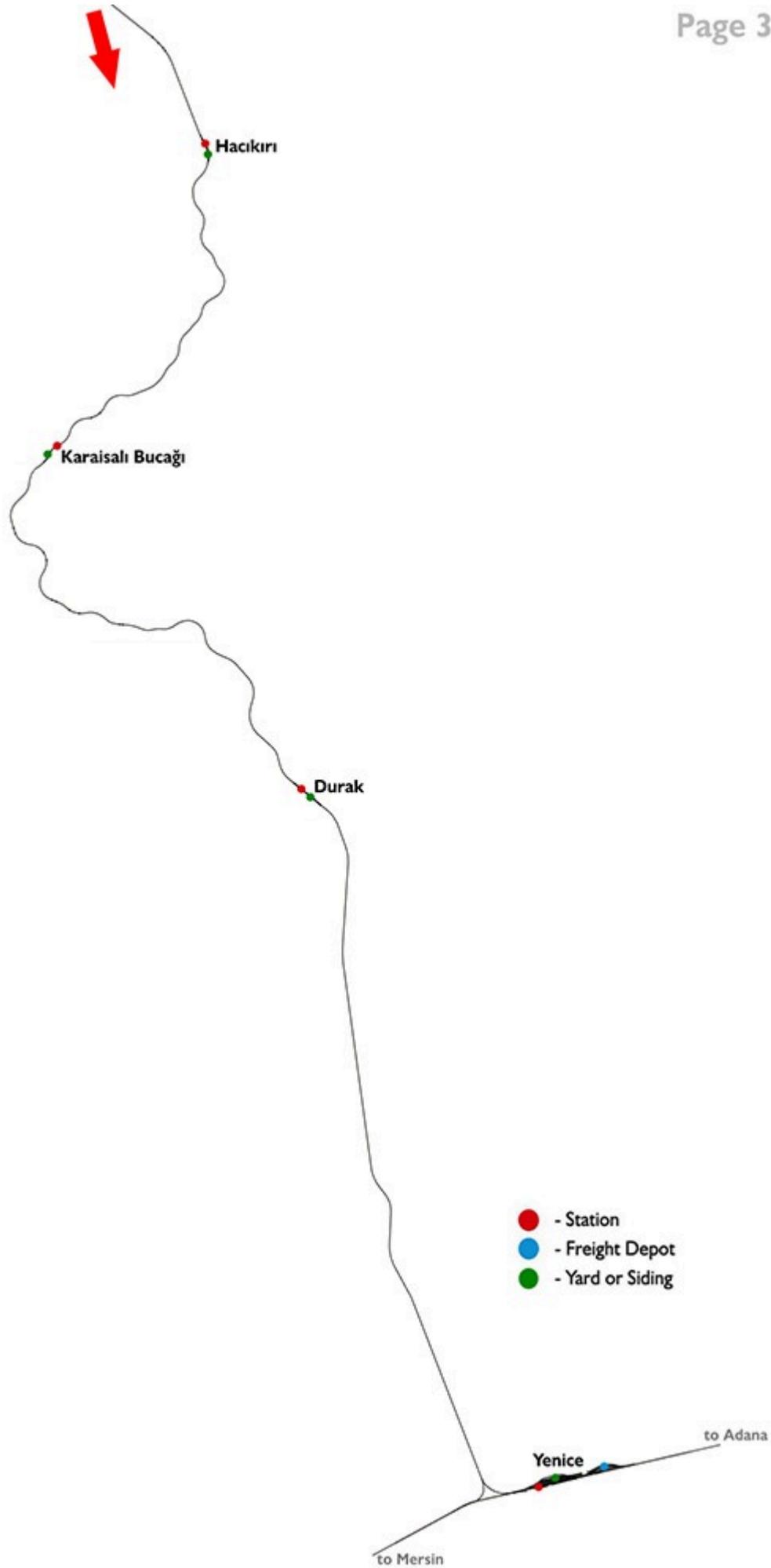
After **Pozantı**, there is **Belemedik Station**, which is famous for its nature and historical buildings from the **First World War**. On the way to **Belemedik**, you can see both the **Çakıt River** (*Turkish pronunciation: Chackhit*) and the pine, cedar, fir and oak trees unique to the **Taurus Mountains**.

Page 2



After **Belemedik Station**, the real adventure begins. Between **Belemedik** and the next station, **Hacııri Station** (*Turkish pronunciation: Hachikiri*), there are 12 tunnels, all of which were carved into the rocks by hand in the early 1900s, and can be entered and exited one after the other.

After arriving in **Hacııri**, both the nature and the landscape will change quite a lot. From here, we will start our journey to the south from the **Taurus Mountains** towards **Çukurova** (*Turkish pronunciation: Chukurova*) on a very steep ramp.



After **Hacııırı**, we will pass the **Karaisalı Bucađı (Karaisalı Subdistrict)** and **Durak Stations** (*Turkish pronunciation: Durock*), respectively. Then we will arrive at our last stop, **Yenice Station** (*Turkish pronunciation: Yenicce*).

**Yenice Station** has a large logistics facility and locomotive depot as well as container facilities.

In **Yenice**, our rails will meet with the railway going from **Adana** to **Mersin**.

## 2.3. Route Features

- **9** mainline stations and **1** tiny short stop
- Heights of the route is between **27 mt (Yenice)** to **1470 mt (Ulukışla)**
- **2** locomotive depots (**Ulukışla & Yenice**). The one in **Yenice** has openable doors
- **1** working locomotive turntable (Ulukışla)
- **2** working fuel loading pumps with animation for **DE 24000 (Ulukışla & Yenice)**
- **1** container loading station with crane (**Yenice**), **2** stacker container loading facilities (**Both in Yenice**) and **2** gypsum loading facilities (**Ulukışla & Gümüş**)
- **37** tunnels carved into the rocks, all of them individually modelled and placed
- The shortest of the tunnels is **37** meters and the longest is **3795** meters
- More than **60** bridges of various lengths
- The famous **Varda Bridge** (a.k.a **German Bridge/James Bond Skyfall** movie bridge) is located on this line

### • Ulukışla Station and Locomotive Warehouse





• **Gümüş Station**



• Çiftehan Station



• Yenice Station, Logistics Yard and Locomotive Warehouse





• **Varda Bridge (aka James Bond Bridge)**



- **Rock Carved Tunnels**





### 3. THE DE 24000 LOCOMOTIVE



### 3.1. Introduction & History

The **DE 24000** series are diesel-electric mainline locomotives with Co-Co bogie arrangement.

In the late 1960s and after much hesitancy, **TCDD** decided for a full dieselization program of their network. This meant that about 800 mainline steam engines had to be replaced. Along with the engine, a support and maintenance infrastructure had to be set up for the diesel engine. For the long term interest of **TCDD**, it was perceived critical to built up know how for diesel engines.

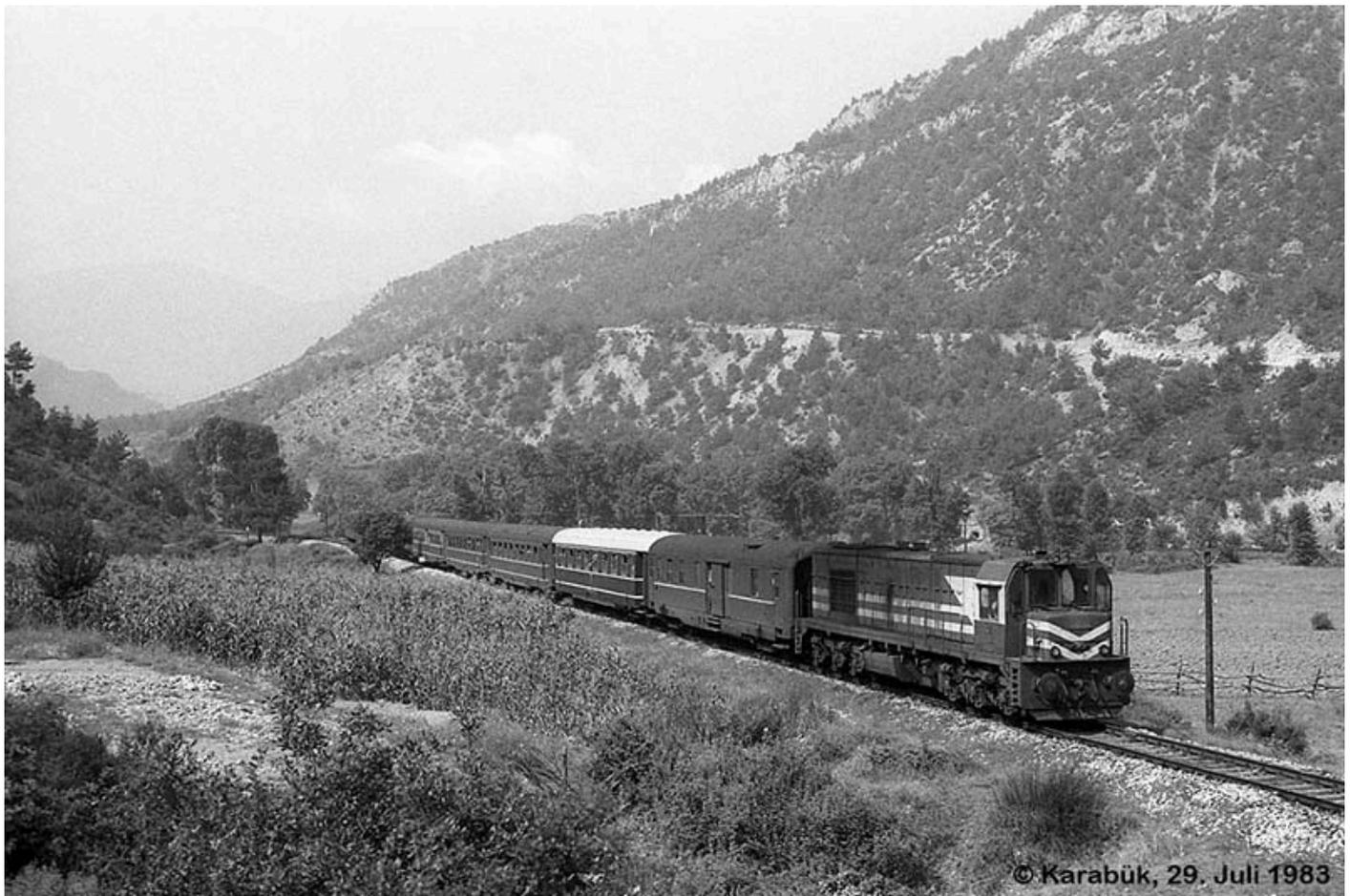
The tender for this technology transfer was won by a group of French manufacturers led by **Matériel de Traction Electrique (MTE)**. The contract signed on **15 October 1968** between **TCDD** and **MTE** provided for:

- the supply of a 2400hp CoCo (**DE 24000**) and a 1800hp BoBo (**DE 18000**)
- The technology transfer and the license to assemble these locomotives in **Turkey** with parts imported on the basis of **20** locomotives yearly.

*The group of manufacturers included:*

- General structural features and program leadership: **MTE**
- Diesel parts: **Chantiers de l'Atlantique**
- Electrical parts: **Jeumont-Schneider**
- Mechanical parts: **Forges et Ateliers du Creusot**

These companies are now all parts of **Alstom**.

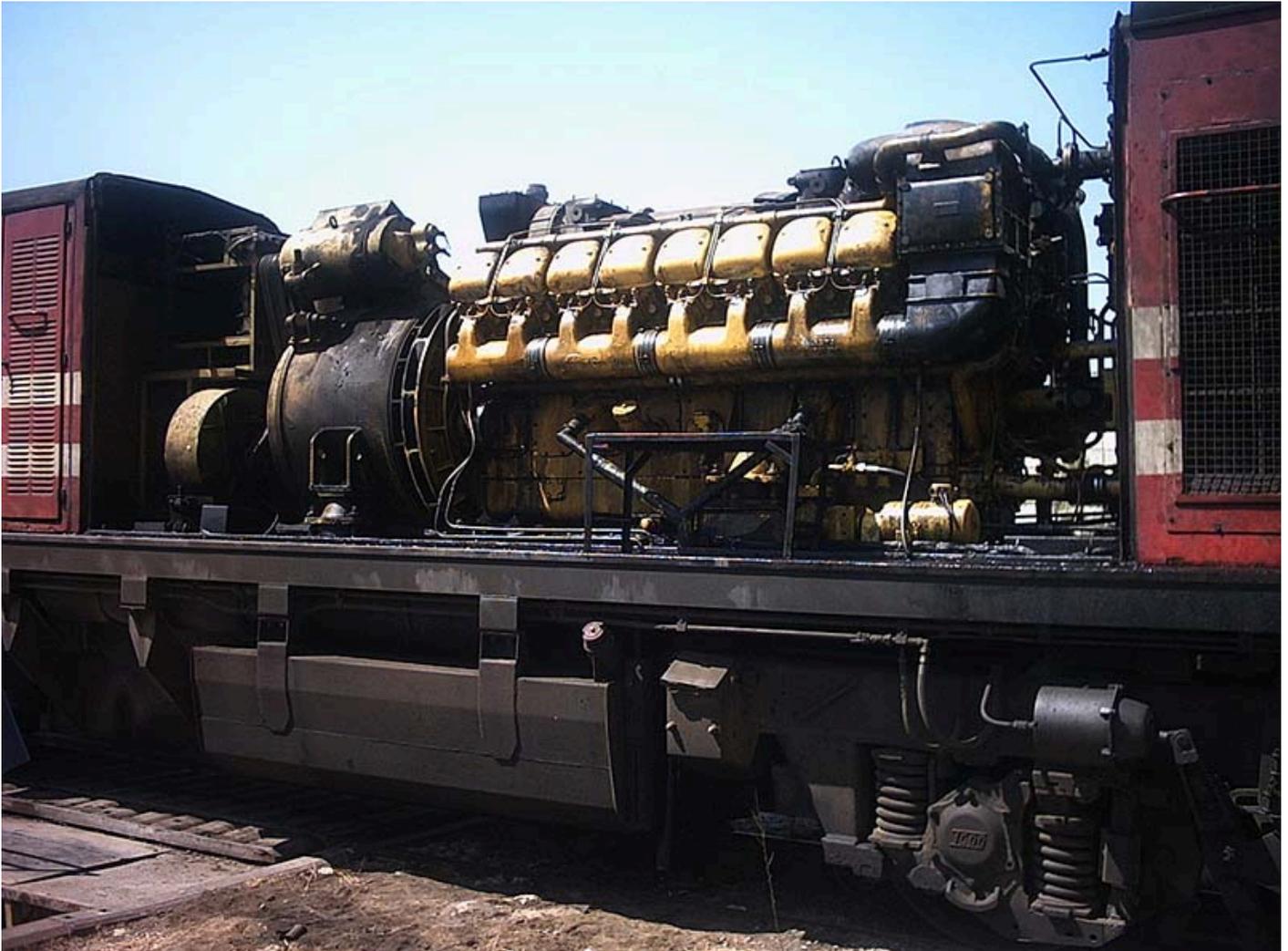


The first locomotive was brought out for tests on **20 February 1970** in **France**. Subsequently, actual production of **DE 24000** in Turkey was about **30** units a year over **14** years from **1970** to **1984**. A total of **418** CoCo units were turned out and it enabled **TCDD** to remove most of its steam

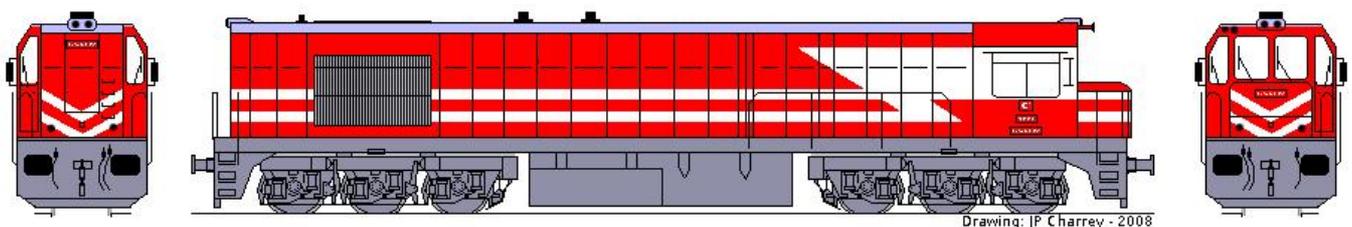
engines. The **DE 24000** became the emblematic engines of the 1980's/1990's. They could be seen on all kind of assignments and all around the country.

The technology transfer agreement can also be considered a success: throughout the manufacturing of the **DE 24000**, **TCDD** and its Turkish suppliers were able to increase gradually the local content. By the end of the order, almost all the parts needed were produced in **Turkey**. **TCDD** became quite independent from foreign sources for the maintenance and heavy haul the **DE 24000**.

The diesel engine chosen was the **Pielstick 16PA4**, a proven engine already in use since 1963 on the **BB67000**. This engine benefited from experience gained in **France** and the extensive research done by **SNCF** in the field of diesel traction throughout the 1960's. The design was adapted to meet the requirements of **TCDD** where the operating conditions were more severe than those at **SNCF**.



The locomotive have a narrow body, in the **American "road switcher"** style. There is only one cab.



Drawing: JP Charrey - 2008

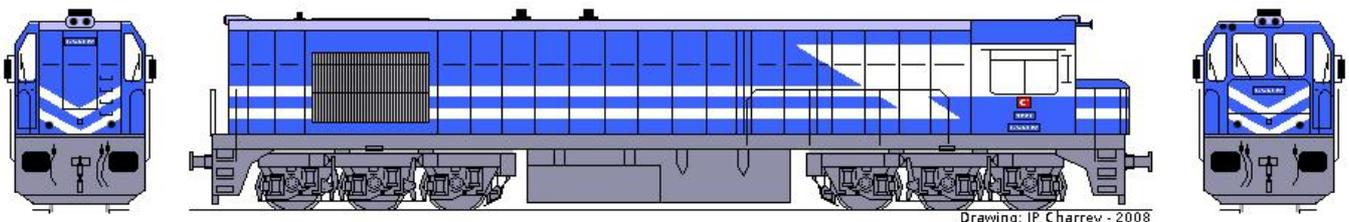
## 3.2. Design & Specification

• <b>Axle:</b>	Co'Co'
• <b>Total quantity:</b>	418
• <b>First year:</b>	1970
• <b>Manufacturer:</b>	Tülomsaş / MTE
• <b>Diesel engine:</b>	Pielstick type 16 PA4 V185 VG
• <b>Electric traction motors:</b>	TC 107-4
• <b>Alternator:</b>	SAT 108-30-5-12T
• <b>Weight:</b>	113 t
• <b>Overall Length:</b>	19,04 m
• <b>Height:</b>	4,172 m
• <b>Width:</b>	2,7 m
• <b>Length between bogie pivots:</b>	10,84 m
• <b>Wheel dia (new):</b>	1110 mm
• <b>Bogie overall wheel base:</b>	3,60 m
• <b>Gear ratio</b>	83:16
• <b>UIC power (at 1500 rpm):</b>	1760 kW
• <b>Speed:</b>	120 km/h
• <b>Starting tractive effort:</b>	394 KN
• <b>Constant effort</b>	210 KN
• <b>Rheostatic brake:</b>	At first some units had it, now none have
• <b>Heating:</b>	Steam 1300 kg/h (some units only)
• <b>Fuel capacity:</b>	4960 l
• <b>Heating water:</b>	3700 l
• <b>MU Capability:</b>	Yes (some units only)
• <b>Locomotive Security System:</b>	ATS (Automatic Train Stopping)

### Livery

The **DE 24000** carry a red livery with two large white stripes running around the body; large **TCDD** letters are painted in white on the sides. The engines kept the same red livery throughout their long life.

A few units carried a blue / white striped livery in the 1990's; this livery was meant to harmonize with the cars of the **Mavi Tren**, a fast express running between **Istanbul** and **Ankara**. Known blue units were: 24009, 24060, 24361, 24382, 24386.



Drawing: JP Charrey - 2008

### 3.2.1. Variants

#### Cab renovation:

From about the year 2000, **TCDD** started a cab renovation program on the **DE 24000s** to improve crews work conditions. The old cab is replaced by a new one which is better soundproofed and equipped with air conditioning. The new cab is almost identical to the old one. The air conditioning compressor enclosure on the roof is the easiest to spot those new cabs. The front windows and the doors are a little bit smaller to allow for thicker cab walls and roof. This renovation is done during a general overhaul of the engine. Over the course of about **16** years, almost all engines have been renovated.

#### Old Cab vs New Cab:



In addition to this overhauled version, now we can see that some innovations have been added to the locomotives that comes from the factory.

In these new locomotives;

- The horns became fully electric and mounted over the locomotive,
- The protection bars on the sides were extended along the entire body, on the right and left of the locomotive,
- APUs were added to the locomotives and MU systems were overhauled from scratch to make them controlled by a new generation digital microprocessor,
- In general, the material quality of the engine and body parts was increased.



### 3.3. Cabin Controls

1	Valse(Throttle)	11	Front Turbo Press.
2	Reverser	12	Rear Turbo Press.
3	Horn	13	Ampermeter
4	Loco Brake	14	Battery Ampermeter
5	Train Brake	15	Battery Voltmeter
6	Main Reservoir Press (White) Air Brake Pipe Press (Orange)	16	RPM Gauge
7	Brake Cylinder	17	Matrix Display
8	Fuel Pressure	18	Fault Warning LEDs
9	Coolant Temperature	19	Fuel Switch
10	Oil Pressure	20	Headlights



21	Radio	36	Front Wipers
22	Speedometer	37	Matrix LED Test
23	General Control Switch	38	Alternator Warning
24	ATS Info Screen	39	Direct Fan
25	Rearrangement	40	Compressor
26	Release	41	Cab Light
27	Clearance on Red Signal	42	Instrument Lights
28	System Alert Confirmation	43	Window Heater
29	User Key	44	Flange Lubrication Test
30	Reading Light	45	Troubleshooting
31	Parking Brake	46	Bail Off
32	Loco Engine Stop	47	Sander
33	Startup	48	Air Conditioning
34	Rear Wipers	49	Timetable
35	Front Side Wipers		



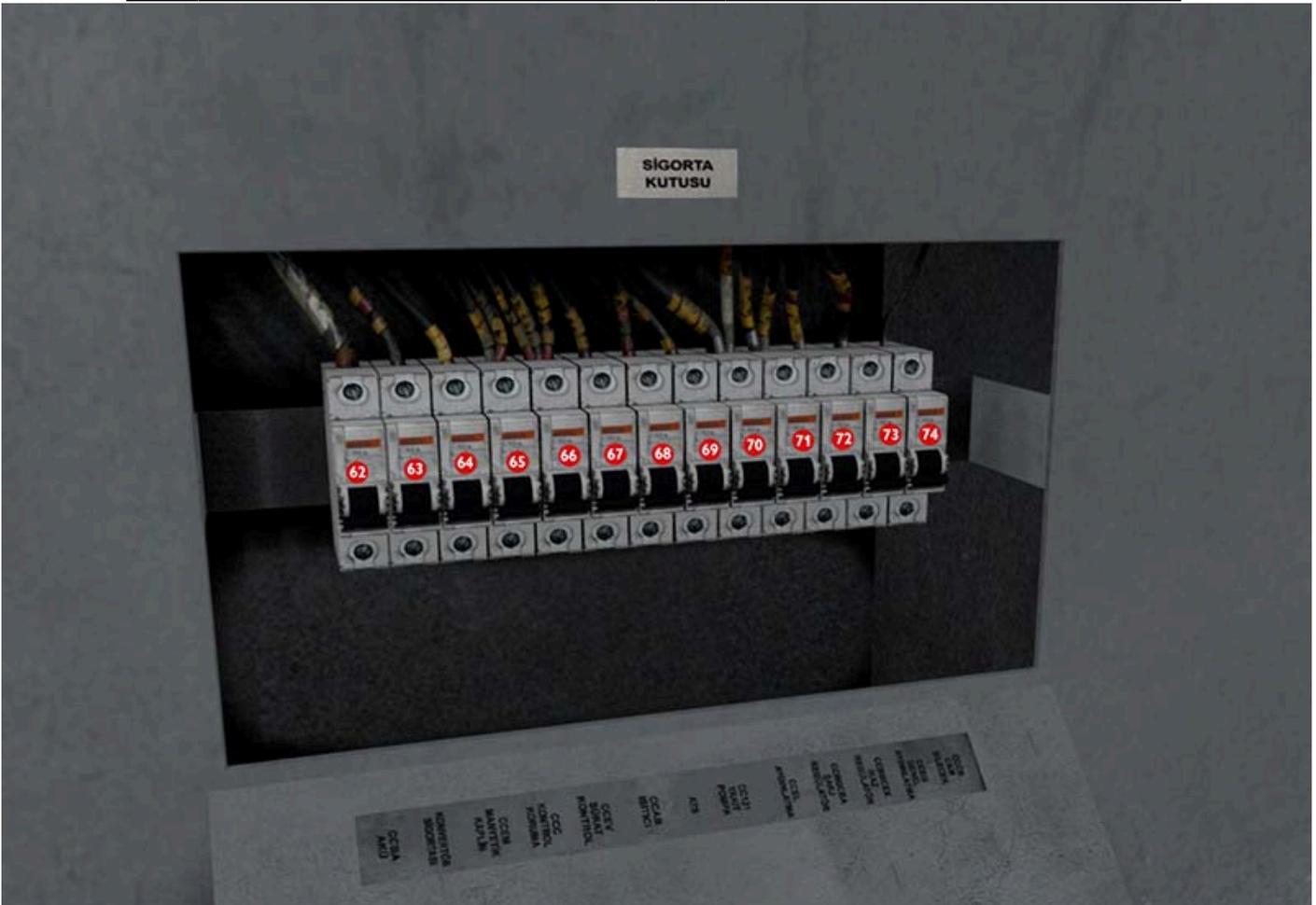
50	Right Window	53	Front Left Roller Blind
51	Back Door	54	Front Right Roller Blind
52	Additional Seat		



55	Front Door	59	Train Heating
56	Emergency Brake	60	Main Light
57	Left Window	61	Lighting and Stove Switch
58	Fuel Tank Gauge		



62	Battery CB ( <i>Circuit Breaker</i> )	69	Fuel Pump CB
63	Convertor CB	70	Illumination CB
64	Fan Couplings CB	71	Charge Regulator CB
65	Control Protection CB	72	Warning Regulator CB
66	Speed Control CB	73	General Illumination CB
67	Window Heater CB	74	Windshield Wipers CB
68	ATS CB		



### 3.3.1. Throttle (VALSE)

The throttle of the **DE 24000** is called **VALSE**. Since **Valse** does not work like a normal throttle, it is useful to explain it separately.

**Valse** makes a circular motion. Normally, it comes in closed position.



#### Note:

The reverser can only be moved when **Valse** is in **OFF** position.

**Valse** switches to **ON** position by moving upwards to 1st stage.



In this position, reverser is locked and cannot be moved.



When the **Valse** is in the **ON** position, when it is pushed upwards, it receives the **KRAN 1** notice and minimum electric current goes to the traction motors for the movement of the locomotive.

When the **KRAN 1** notice is received, the engine RPM will not increase even if **Valse** is held in this position. **Valse** should be released and returned to **ON** position again.

When the **Valse** is pushed up again, the locomotive receives the **KRAN 2** notice.

In this position, the **RPM** of the locomotive increases as long as **Valse** is held and the current to the traction motors increases with the **RPM**.

When **Valse** is released, it returns to the **ON** position and the locomotive maintains the current **RPM**.

To lower the **RPM**, a slight downward pull of the **Valse** is required. As long as it is held in this position, the **RPM** drops downward and the traction power of the locomotive decreases.

By keeping it in this position, the locomotive can be revved down to idle again. To turn off the throttle of the locomotive and immediately bring the **RPM** to idle, it is sufficient to turn the **Valse** to the **OFF** position.

For this, **Valse** can be closed directly by pulling down with the mouse or by pressing the **Tab + D** key combination.

### 3.3.2. Levers

#### Reverser

The **Reverser** is used for the forward-backward movement of the locomotive and for filling the wagons' tanks with air. When horizontal, **Reverser** is in neutral position. In this position, **Valve** is locked and cannot be moved.



The locomotive can be moved forward with 1 step upward movement of the **Reverser**. Also it can be moved backwards with 1 step down movement of the **Reverser** too.



When **Valve** is in **OFF** position, if **Reverser** is moved 1 step more from forward or reverse position, it will turn into **S** position. This position stops sending current to the locomotive's traction motors but maintains the engine's **RPM**.

Because the **DE 24000's** compressors are engine driven, the **RPM** of the locomotive needs to be increased in order for the compressor to fill the air tanks efficiently.

Here, when the **Reverser** is in the **S** position, the **RPM** of the locomotive increases as a result of moving the **Reverser** forward or backward according to its position and keeping it in that position. But since the power to the traction motors is cut off, the locomotive does not move or accelerate further if it's in motion. As the power of the compressor will increase, the air tanks of both the locomotive and the wagons to which it is connected begin to fill faster.



To terminate the air filling process, it is sufficient to move the **Reverser** back to the forward or reverse position or to the neutral position.

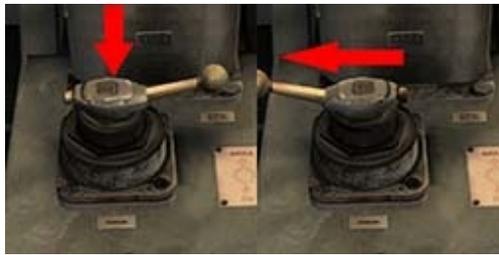
In this case, the **RPM** drops back to idle.

## Loco Brake

The **Loco Brake** is a braking system that acts directly on the brake cylinders of the locomotive.



The counterclockwise movement of the **Loco Brake** lever in the cab increases the brakes, while the clockwise movement releases the locomotive brakes.



Since it is an independent and stepless brake type, it applies the brake according to its position.

## Train Brake

The **Train Brake** is a type of brake that applies to both the locomotive and the wagons'.

The position of the train brake visible in the picture is **Yol Durumu (Running)**. In this position the brakes are released.



Bringing the **Train Brake** to the horizontal is the **Seri Doldurma (QckRelease)** position. In this position, the locomotive's air tanks fill faster, and the locomotive's **Brake Pipe** pressure rises up to **5.5 atm**.

With the gradual counterclockwise movement of the train brake, the amount of brake applied is increased and remains in the held position. In order: **MinApply - Gra.SelfLap - Full Service**

When it is brought to the last position, it becomes **Seri Fren (Emergency)** position and the **Emergency Brake** is applied.



When the locomotive will be used as **Helper/Banking Engine (Ranfor)**, the train brake must also be placed in the **Ranfor (Helper)** position. For this, the small pin on the brake lever must be lifted up and the lever must be moved clockwise to bring it to the **Helper** position.

In this position, the **Train Brake** lever is locked and does not move. To remove it from this position, it is necessary to raise the pin at the top again and move the lever to the **Running** position.



### 3.3.3. Indicators

#### Matrix Display & Fault Warning LEDs

The **Matrix Display** is used to inform the engineer about some situations in the locomotive. The meanings of the illuminated squares on the display are as follows:



- **Q1:** It turns on when the related circuit breaker is open. It turns off when the locomotive receives the KRAM 1 notice.
- **Q2:** It turns on when the related circuit breaker is open. It turns off when the locomotive receives the KRAM 2 notice.
- **Q60:** Fault LED. It comes on with an audible warning sound when a malfunction occurs in the locomotive. It stays off when in normal condition.
- **LSH:** Diesel Engine Oil Pressure. It turns on before the locomotive cranks, and goes out after the startup.
- **DIC1:** Fire Warning. Indicates that the locomotive is ready to start. It remains lit before and after the starter.
- **PATİNAJ:** It lights up with an audible warning sound when the locomotive is wheelslipping, and turns off when it gets rid of the wheelslip. In addition, while the locomotive is field diverting (49 km/h and 72 km/h), it also flashes together with an audible warning sound.

- **MD1:** 1. Starter Motor. It lights up before the locomotive cranks and goes out when the RPM exceeds 350.
- **MD2:** 2. Starter Motor. It lights up before the locomotive cranks and goes out when the RPM exceeds 350.
- **ISITMA OCAĞI:** It turns on when the circuit breaker of the locomotive's heating stove is opened.

**Fault Warning LEDs** next to the **Matrix Display** have the following meanings:

**SONHN:** Deadman alarm light

**SONQo:** Leakage alarm light

**SONBA:** Battery alarm light and warning horn

**SONDL:** Diesel alarm light

**SONPAT:** Wheel slip alarm light



**Note:**

*Of these LEDs, only **SONPAT** and **SONDL** are active in our model. **SONPAT** flashes when wheel slipping and field diverting occurs, while **SONDL** lights when overheating of the engine occurs.*

### 3.3.4. LCD Displays

#### ATS Display

The **ATS** (Automatic Train Stopping) system is a safety system that allows the locomotive to brake when necessary, according to the signal information, while the locomotive passes through signals and other types of notification magnets.

The operation of the **ATS** System is explained in detail under the [6. SAFETY SYSTEMS](#) section.



#### Fuel Display

The **Fuel Display** is the indicator of the digital fuel metering system fitted to the **DE 24000s** undergoing modernisation. The information on this screen is as follows:

**DE24xxx:** Shows the road number of the locomotive.

**DEPO SEVIYE:** Indicates the percentage of fuel remaining in the locomotive.

**DEPO MIKTAR:** Indicates the amount of fuel remaining in the locomotive in liters.

**DEPO TEMP:** Displays the temperature in the fuel tank.



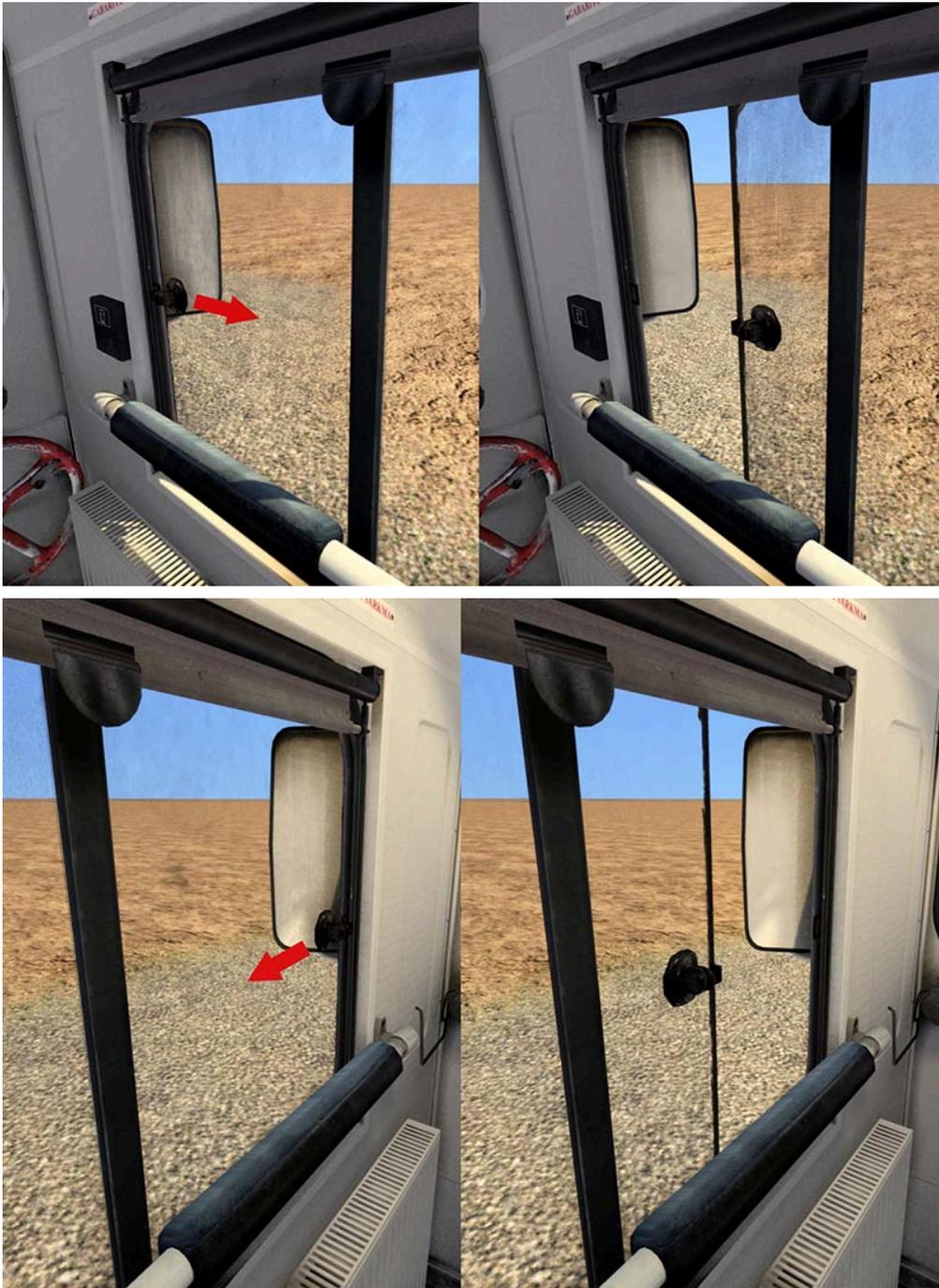
## A/C Display

Indicates whether the locomotive's air conditioning is on.

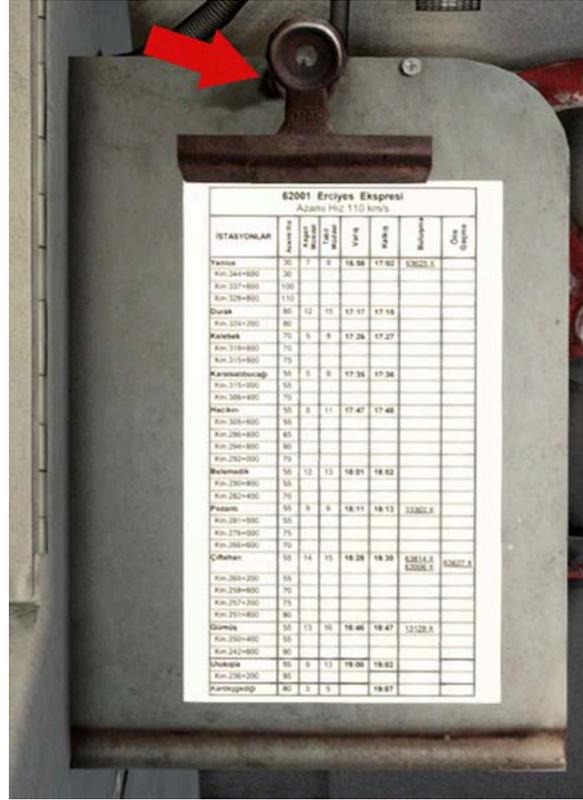


### 3.3.5. Extended Controls & Features

- Right and left windows can be opened.

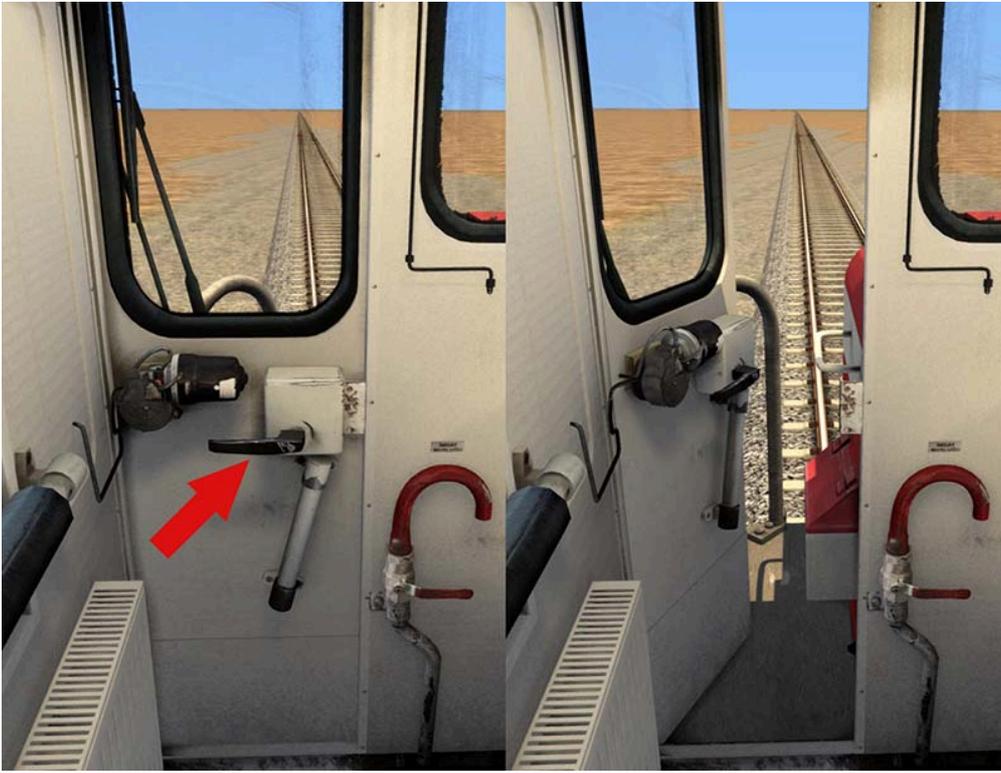


- Timetables of various trains can be viewed by pressing the clip on the panel on the side of the console.

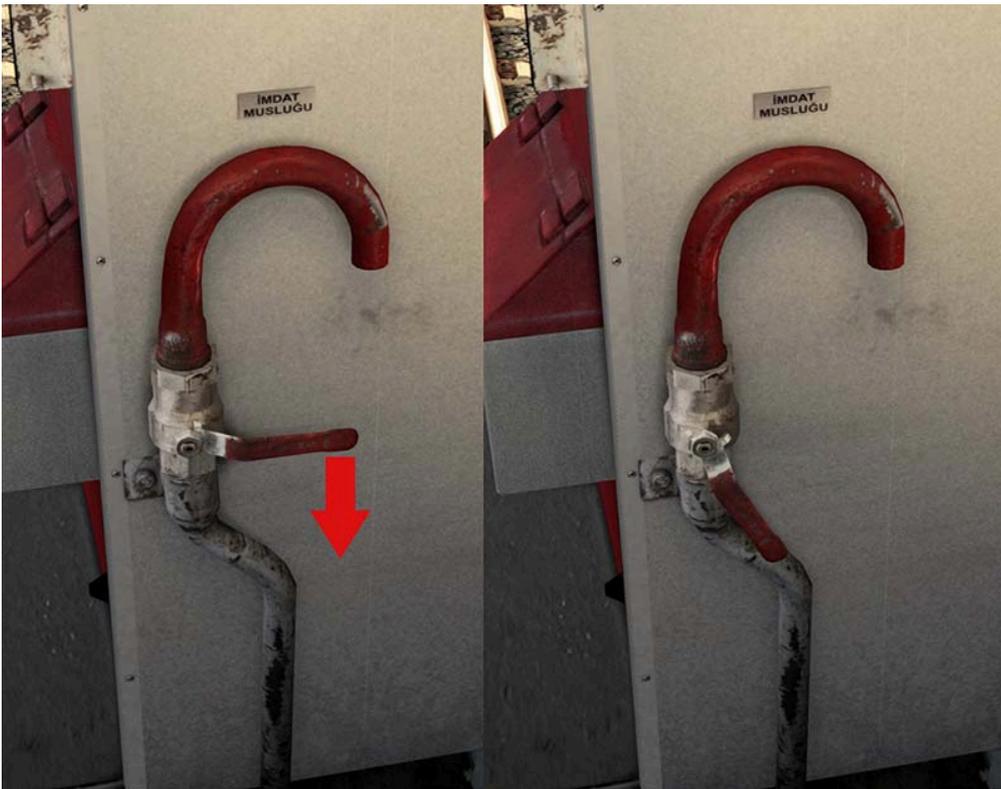


- The cabin doors on the rear right and front left can be opened.

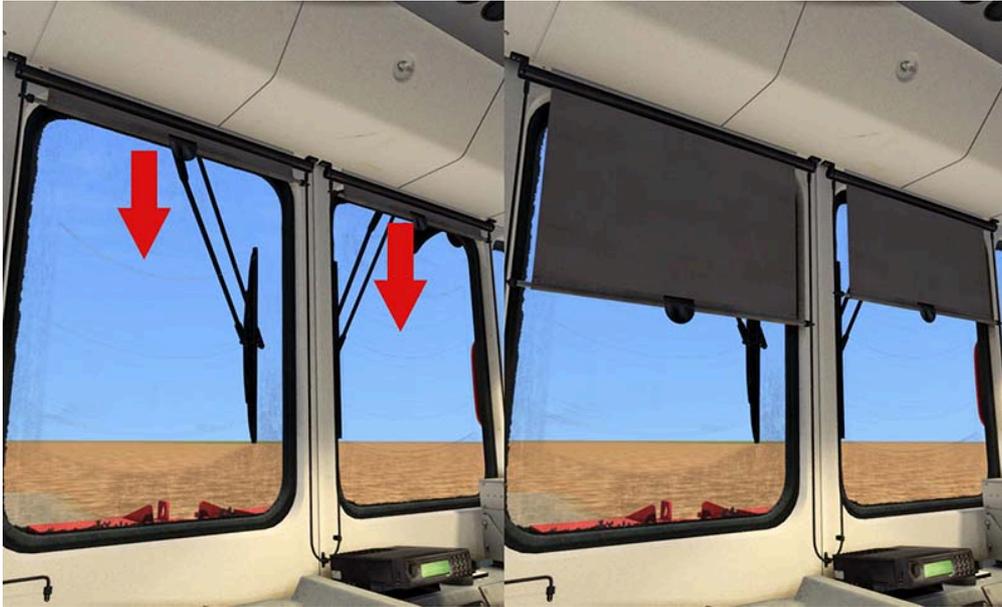




- **Emergency Brake** can be applied by using the emergency brake valve on the front wall of the assistant engineer section.



- Roller blinds on the front windows can run downwards and upwards.



- Additional seat can be opened and folded.



- The radio can be turned on and off and the volume control can be achieved with this button. Various radio communications can be listened to.



- The brake cylinder rods of the locomotive move at the applied brake rate. These processes can be observed outside the locomotive.



**Various differences are automatically generated outside of each locomotive.**

- Front and rear signal lamps and hoses may vary.



- Tarps can be seen over the radiator grille of the locomotive randomly.



- The road number of each locomotive is randomly generated. The numbers showing the warehouse number of the locomotive can also be seen in some locomotives.



- Various dirt, rusts and additional textures can be seen on the body of the locomotive.



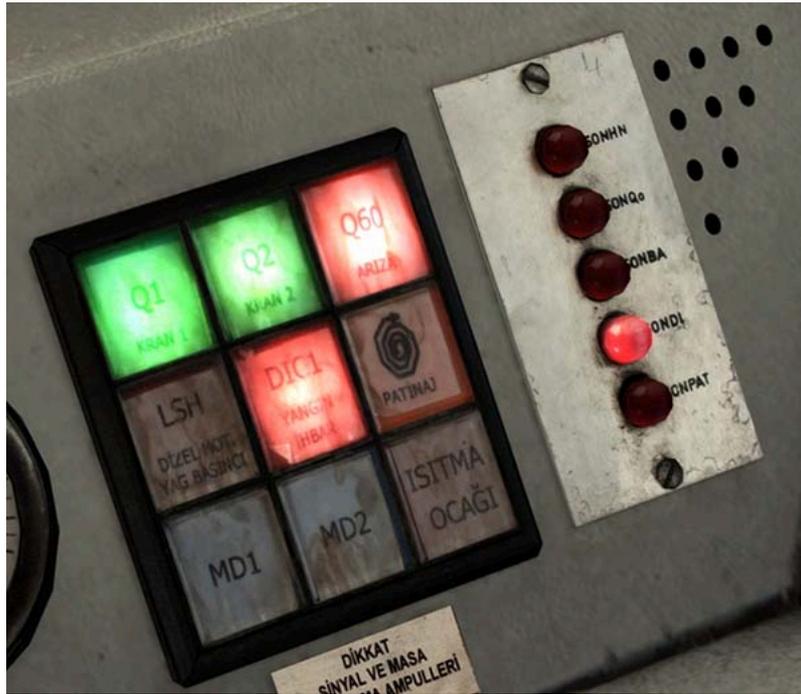
- The locomotive couplings and air hoses can be connected to other **DE 24000s** and **AND Model** wagons when coupled.



- In cold weathers, the interior windows of the locomotive keep misting over time. To prevent and remedy this, the **Window Heater** switch in the cab must be switched on.



- Engine temperature rises, cooling fans are started to cool down engine and in case of overheating engine closes throttle and gives Q60 warning.



### 3.4. Keyboard Controls

In addition to the standard keyboard controls, the **DE 24000s** have some custom keyboard controls. *Following keys are used:*



### 3.4.1. Standart Keys

<b>V</b>	Wipers On/Off	<b>A</b>	Throttle (Valse) Up
<b>L</b>	Cab Light On/Off	<b>D</b>	Throttle (Valse) Down
<b>Space</b>	Front Horn	<b>'</b>	Train Brake Up
<b>H</b>	Front Headlights	<b>;</b>	Train Brake Down
<b>Shift+H</b>	Rear Headlights	<b>]</b>	Engine Brake Up
<b>W</b>	Reverser (Forward)	<b>[</b>	Engine Brake Down
<b>S</b>	Reverser (Backward)	<b>Q</b>	ATS Acknowledge/Reset
<b>X</b>	Sander On/Off		

### 3.4.2. Extended Keys

<b>CTRL+1</b>	Open All the Circuit Breakers	<b>Tab+D</b>	Close Throttle (Valse)
<b>CTRL+2</b>	Prepare the Cab Controls for Startup	<b>I</b>	Radio On/Volume Up
<b>M</b>	Instrument Light On/Off	<b>Shift+I</b>	Radio Off/Volume Down
<b>N</b>	Reading Light On/Off	<b>F</b>	Alternator Warning On/Off
<b>F7</b>	Consist Information System On/Off	<b>J</b>	Fuel Switch On/Off
<b>B</b>	Rear Horn	<b>P</b>	Loco Brake Bail-off
<b>U</b>	ATS Key On/Off	<b>K</b>	ATS Clearance on Red Signal On/Off
<b>Z</b>	Engine Startup	<b>C</b>	ATS Release/Speed Control
<b>R</b>	Train Brake Pin		

### 3.5. Consist Information System

**Consist Information System** is an information system that can provide details about the locomotive and train consist.



By pressing the **F7** key, the **Consist Information System** can be activated or deactivated. While active;

**Consist's length,**  
**Consist's weight,**  
**Addition of wagons/filling of air tanks,**  
**Compressor filling warning** messages are displayed.



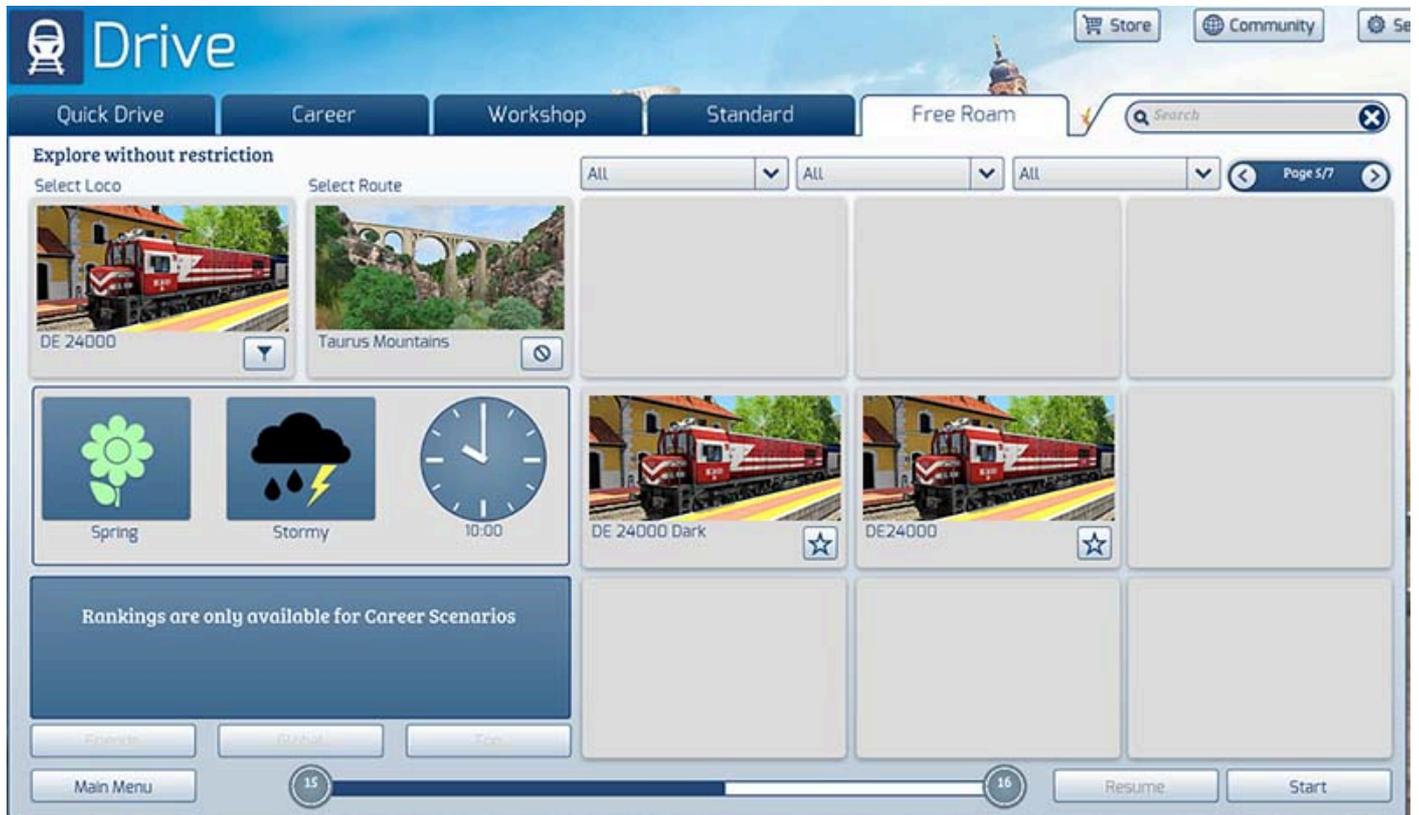
### 3.6. Preparation for Startup

**AND Model DE 24000** series locomotives come in 2 versions.

**DE 24000**

**DE 24000 Dark**

The **DE 24000** version comes started and ready to go, while the **DE 24000 Dark** version comes as a completely cold machine as the name suggests.



Since the **DE 24000** version is ready for use, let's first learn how to get ready the **DE 24000 Dark** version.

When **DE 24000 Dark** version is selected in the game; locomotive comes with all circuit breakers are switched off, the parking brake is applied, all switches and keys are closed and with empty brake pipe.





This time, by pressing the left arrow key once, the switches on the back wall are seen. From these switches, the **Main Light** switch is set to **1** position. It is checked that the **Train Heating** switch is in the **I** position.

When the right arrow key is pressed once again, it is seen that the lights on the **Matrix Display** are on. Now the locomotive's cabin lights, reading light and instrument lights can be switched on.



By pressing the left arrow key twice, the **Fuel Indicator** panel is checked and it is confirmed that the locomotive has fuel for startup.

Then, by pressing the right arrow key twice again, the engineer view is selected.



**Note:**

Alternatively you can press the **CTRL + 1** shortcut keys for these operations.

The **General Control Switch** between the **ATS** display and the radio should be turned on.



The locomotive's **Fuel Switch** must be turned on before starting (alternatively, you can press the **J** key on the keyboard). After the switch is turned on, the **Fuel Pressure** gauge slowly rises to around **2 bars**. After **2 bars** pressure is seen, the locomotive is ready to start.



The **Train Brake** of the locomotive must be set to the **Yol Durumu (Running)** position. For this, the pin is lifted up and the lever is taken to the **Running** position.



**Note:**

Alternatively you can press the **CTRL + 2** shortcut keys for these operations.

### 3.7. Starting & Moving the Engine

In the previous chapter, we learned how to prepare the locomotive for startup while in the **Dark** state. Next, we will learn to start and move the locomotive.

When you hold down the **Startup** button on the console of the locomotive (alternatively, you can press the **Z key** on the keyboard), the pre-start lubrication system will be activated.



Depending on the engine temperature, the locomotive will switch from pre-lubrication to engine cranking in **30** seconds tops.

When cranking starts, the **MD1** and **MD2** lights on the **Matrix Display** turn on. This indicates that **Starter 1 & Starter 2** are engaged.



When the engine speed of the locomotive reaches **350 RPM**, **MD1** and **MD2** are disengaged and their lights go out.

When the engine speed of the locomotive reaches **600 RPM**, the **LSH** indicator turns off. The average idle speed of the locomotive is **650 RPM**.



After the start, the reverser must be moved to the forward or reverse position in order to be able to move the locomotive.



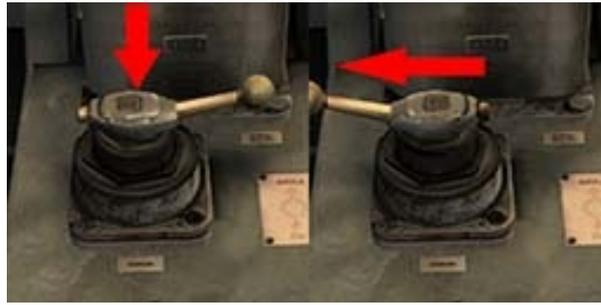
Next, the **Alternator Warning** switch needs to be turned on (alternatively, you can press the **F** key on the keyboard). If this switch is not opened, the locomotive will not move because no current will flow to the traction motors of the locomotive.



The **Parking Brake** of the locomotive must be released before moving. For this, the flywheel on the front wall of the cabin should be released by moving it to the left.



Finally, the **Loco Brake** and **Train Brake** of the locomotive are released and after the horn is sounded, the **Valse (Throttle)** is opened and **Kran 1** is given to ensure the first movement of the locomotive. Then **Kran 2** is given and then the engine **RPM** is increased and speed is gained.



**Note:**

We recommend playing the following scenarios to experience all the steps described in this chapter in-game:

**Standard Scenarios;**

- 1 - *Introduction to DE 24000 (Cold and Dark Start)*
- 2 - *Introduction to DE 24000 (Indicators and Controls)*
- 3 - *Introduction to DE 24000 (Operating)*

### 3.8. Stopping the Engine

When it is desired to stop the locomotive's engine, it can be stopped using one of the following operations:

- By turning off the **General Control Switch**,



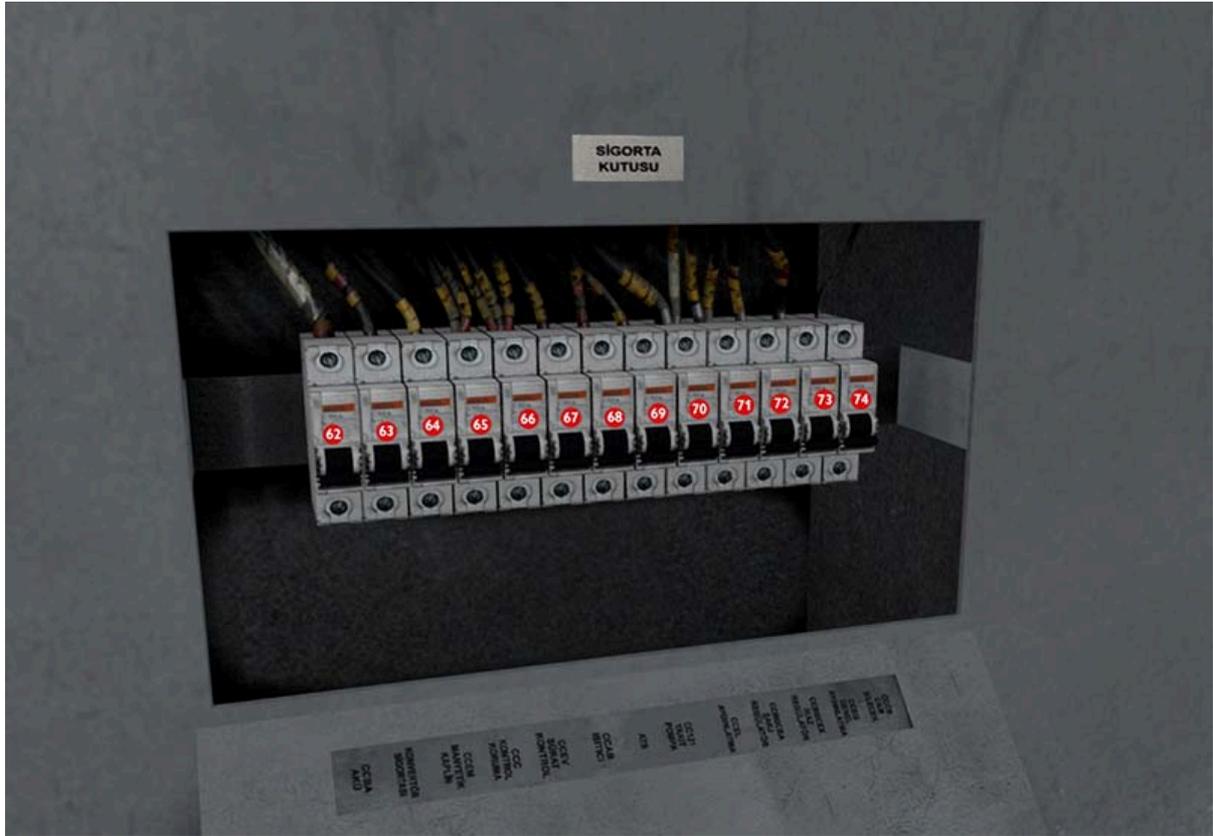
- By turning off the **Fuel Switch**,



- By pressing the red **Loco Engine Stop** button,



- By turning off the **Fuel Pump Circuit Breaker. (No. 69)**



### 3.9. Multiple Unit Preparation

**DE 24000s** can operate as coupled by connecting **2** locomotives to each other. It is beneficial to take the following steps in order for the coupling to be performed and for the locomotives to work properly:

#### For the Main Locomotive;

- First of all, the locomotive must be started,
- The **Reverser** of the main locomotive must be in forward or backward position,
- **Train Brake** of the main locomotive must be set to **Yol Durumu (Running)**,
- The main locomotive's **Alternator Warning** switch must be turned on.

#### For the Helper Locomotive;

- The locomotive must be started,
- The reverser of the Helper locomotive must remain in the **Neutral** position,
- The **Alternator Warning** switch of the helper locomotive must be turned on,
- **Train Brake** of the helper locomotive should be placed in the **Ranfor (Helper)** position,
- **Loco Brake** of the helper locomotive must be released,
- The **ATS** system of the helper locomotive must be turned off (**User Key** must be in **ANAHTARI TAKIN!** position).

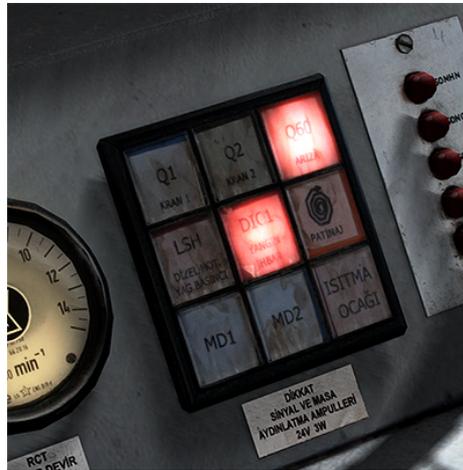


After these steps have been followed, both locomotives' engines can be commanded by the **Main Locomotive**.



### 3.9a. Troubleshooting

A fault condition may occur in the locomotive under certain circumstances. When a fault occurs, the "**Q60 FAULT**" LED on the **Matrix LED Display** will light up and an audible warning will sound at the same time.



The **Q60** LED illuminates:

- When the locomotive draws excessive current (over **1200** amps),
- When the engine of the locomotive is overheated (above **95** Celsius degrees),

When a **Q60** fault occurs, the locomotive shuts off the throttle and drops to idle. In order to eliminate the fault and stop the buzzer, the "**BPEF ARIZA GİDERME (Troubleshooting)**" button on the control panel must be pressed.



Since the locomotive will not move without rectifying the fault, this must be corrected first.

## 4. OTHER ROLLING STOCK

Along with our **DE 24000** class locomotive, **AND Model Taurus Mountains** route comes with **"Pulman Passenger Cars"** with **8** different textures with passenger views and a **"Generator Car"** for heating and air conditioning.



As for the freight cars, firstly there are **"GBS"** type box cars with **7** different textures and different body shapes.



Also the new **"SGNS"** type open container cars are ready to play with as much as **22** different containers and they are loadable by container and gypsum loading facilities.



## 4.1. Passenger Cars

Before we started building the **Taurus Mountains** route, we had already prepared the **DE 24000** and GBS type freight wagons in **2016-2017**. While making the line, we thought it was necessary to prepare a passenger wagon set.

Since we produced **TVS2000** and **M10/K10** wagons (used in Turkey today) for **Microsoft Train Simulator** between **2001-2012**, we wanted to make a wagon type that is more nostalgic and appeals to our heart.



**Left:** DE 24000 Vol 4.0 for Microsoft Train Simulator (2005). **Right:** TVS 2000 Pullman Wagon for Microsoft Train Simulator. (2005)

Thereupon, we decided to prepare standard **UIC Pulman Wagons**, which **TCDD** used in the 1980s and 1990s in Turkey and which have similar models in almost every country in **Europe**.



**?** *The UIC type X, Y and Z coaches are passenger coaches for international railway services that have been standardized in certain respects by the **International Union of Railways**. This standardization was intended to give rail passengers on international services a standard level of comfort; in addition it was intended to simplify the maintenance of coaches when abroad.*

Even though these wagons are not used much nowadays, I remember them very well, especially from the journeys I took when I was a teenager. Traveling in the summer would have been a hassle because there was no air conditioning, they were not very comfortable, but we would have enjoyed our journey by looking at the diesel or steam locomotive that was leading us by sticking our heads out of the half-opened windows.

For this reason, we wanted to prepare these beautiful wagons that remain in our memories. We prepared **8** different pullman wagons by using all of the liveries used for different trains at those times by **TCDD**.



The road numbers on the wagons we have prepared may vary and minor differences may occur on their bodies. The couplings and air hoses of the wagons can be connected to each other and to the **DE 24000** visually.

Different types of passengers can be seen in the passenger view of the wagons.



## 4.2. Generator Car

The passenger wagons used by **TCDD** in the 1970s and 1980s didn't have a heating system. Either the heating system (sofaj) found in some of the **DE 24000s** or a separate heating wagon was used in winter.

However, in the 1990s, it was given that this system could not be used efficiently in the new generation wagons and it was decided to design a separate generator wagon for heating in winter and cooling the new type of wagons with air conditioning in summer.

Upon this, a **Generator Car** with UIC body structure and **Schlieren** bogies was designed by **Tüvasaş (Turkey Wagon Industry Inc)**. Thus, this Generator Car started to be given to express trains.



We modeled this **Generator Car** and added to our train sets in **Taurus Mountains** route, so that the train sets could be authentic and realistic.



### 4.3. GBS Type Freight Cars

Since it was the first freight wagon I made for **Microsoft Train Simulator** in the early 2000s, I wanted to build **GBS** type freight wagons for the **Train Simulator** series from scratch at a high quality level.



*TCDD GBS Type Freight Car made for Microsoft Train Simulator - aka MSTs. (2002)*

It is possible to see this type of wagons in the railway inventory of all countries in **Europe**. Today, they are no longer seen as they are replaced by larger wagons such as **Gabs** and **Habbins** with **Y25** bogies. For this reason, we wanted to present these wagons, which are still in our memories with their nostalgic values and images, together with our route.



- There are **7** different textures and different body shapes. One of the wagons has a brakeman cabin.



- The couplings and air hoses of the wagons can be connected to each other and to the **DE 24000** visually.



- The brake calipers of these wagons are animated.
- Also snowy versions of these wagons in winter were also prepared separately.



#### 4.4. SGNS Type Freight Cars

As there was a need for a modern container wagon, **Tüvasaş** designed **SGNS** wagons suitable for high speed, with similar features to the other similar wagons in the world, and these wagons were started to be used by **TCDD**.

Since container, sand and gypsum trains run extensively on the line where the **Taurus Mountains** route passes, we decided to make a wagon suitable for carrying this type of cargo.

We did prefer **GBS** wagons because of their nostalgic value, and this time we decided to choose a more modern and visually superior model as a container wagon.

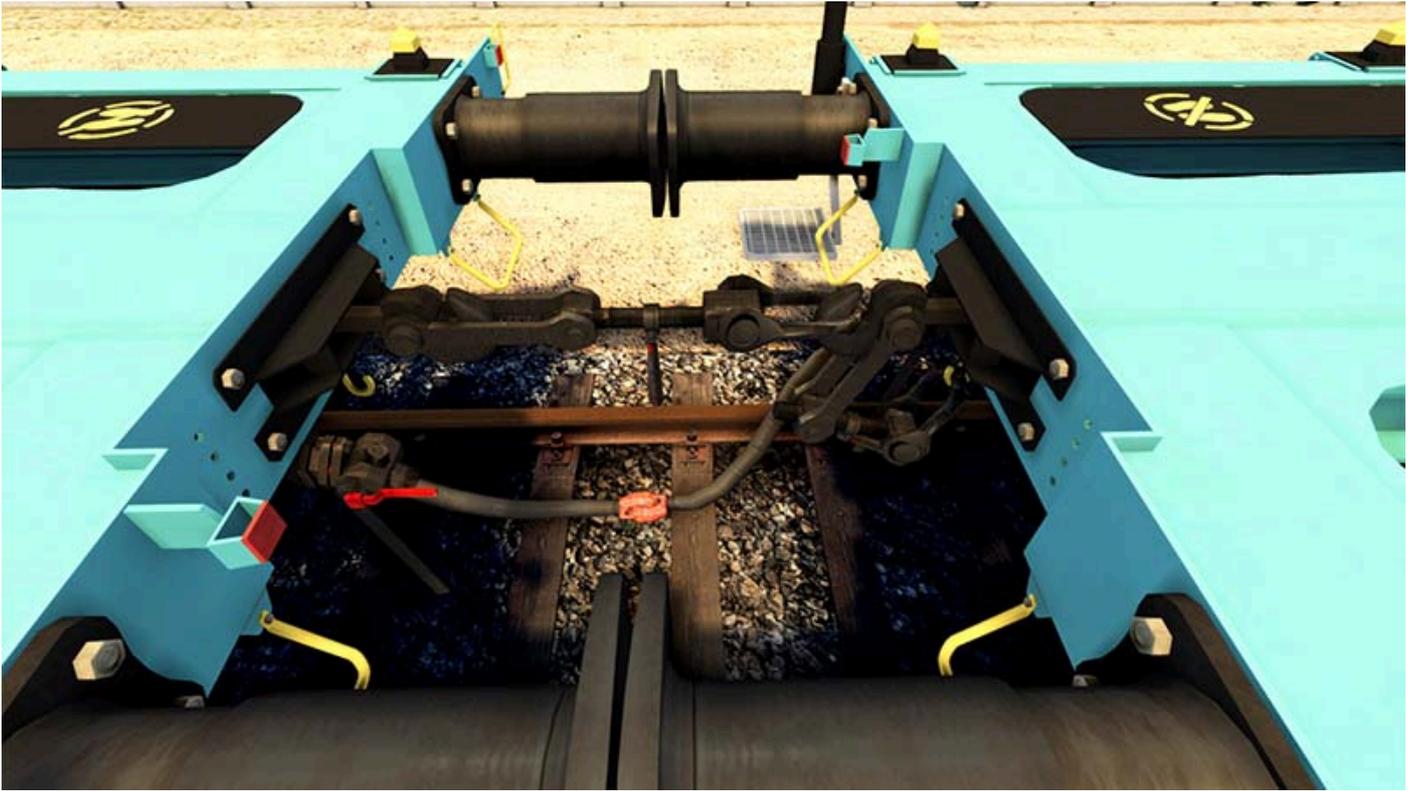
For this reason, we decided to prepare the new generation **SGNS** wagons.



While you can load various types of containers on these wagons at the **Logistics Center** facilities in **Yenice**, you can also load gypsum into the open type containers on these wagons at the **Gypsum** facilities in **Ulukışla** and **Gümüş**.



These cars are ready to play with as much as **22** different containers. As with all wagons, the brake calipers of these wagons are animated and the couplings and air hoses of the wagons can be connected to each other and to the **DE 24000** visually.



## 5. SIGNALS & SIGNS

**CTC (Centralized Traffic Control)** system is used for the signaled sections of the lines operated by **TCDD**.

Centralized traffic control is a form of railway signalling that originated in North America. The system consists of a centralized train dispatcher's office that controls railroad interlockings and traffic flows in portions of the rail system designated as **CTC** territory.

There are basically three types of **CTC** signals:

- a high signal with three lights: **red / green / yellow** (see [Main Line Signals](#))
- a high signal with four lights: **yellow / red / green / yellow** (see [Diverging Route Signals](#))
- a ground (aka **dwarf**) signal with three lights: **red / green / yellow** (see [Dwarf Signals](#)).

## 5.1. Main Line Signals

### • Stop aspect



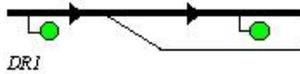
#### **Immediate stop.**

The protected block section is occupied or no route is set from the signal.

### • Proceed aspect



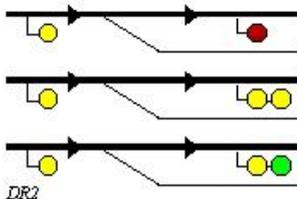
Proceed at Normal speed. Next signal is also a proceed aspect (i.e. not a stop). Two blocks beyond the signal are clear.



### • Proceed with caution aspect



Proceed but expect to find the following signal at stop or giving access to a diverging route. The block beyond the signal is clear. The block after the following signal is either occupied, either set to a diverging route, either with no route set.



## 5.2. Diverging Route Signals

- **Proceed with caution aspect (1)**



Proceed at reduced speed over points set for a diverging route. Be prepared to stop at following signal.

A diverging route is set from the signal.



- **Proceed with caution aspect (2)**



Proceed at reduced speed over points set for a diverging route. Be prepared to proceed at following signal.

A diverging route is set from the signal.



### 5.3. Dwarf Signals

This signal is placed at rail level in dense area such as stations. Such signals authorize, when cleared, the passage over points in diverging position only.



Aspects that can be seen in such signals are explained in the relevant sections. (see [Main Line Signals](#) and [Other Signals](#))



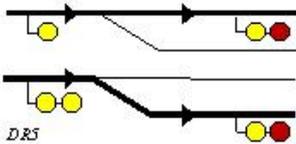
## 5.4. Other Signals

### • Subsidiary aspect



Proceed at limited speed as far as the line is clear. Be prepared to stop short of any obstruction. The signal aspect gives access to an occupied line, a non track circuited line or a non running line (e. g. turntable).

This aspect is announced by a signal displaying one yellow light.



#### Note:

We recommend playing the following scenario to experience all the details described in this chapter in-game:

#### Standard Scenario;

*4 - Introduction to DE 24000 (ATS and Signals)*

## 5.5. Speed Signs & Countdown Markers

- **Speed Signs**

Signs showing the **40 km/h** speed limit are used on the **Taurus Mountains** route. These signs are located at the station entrances and exits.

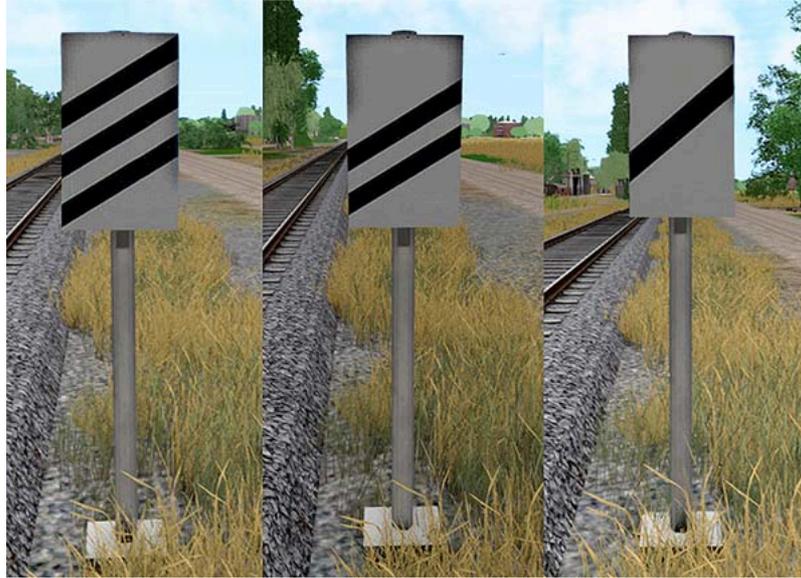


The trains coming here should go below 30 km/h if they are going to diverge at the switch, and below 40 km/h if they are not going to diverge. Speed limits for trains are defined in a separate schedule for each train. The maximum speed is **110 km/h** for passenger trains and **70 km/h** for freight trains on this route.

This speed signs consist of a metal sign with the speed limit printed onto it.

- **Countdown Markers**

Countdown markers can be found around the **Taurus Mountains** route. Designed to give the driver a visual reminder of the distance remaining to a signal, the marker boards are placed at a standard distance of **300m, 200m** and **100m**.



## 5.6. Whistle Point Signs

In rail transport, a whistle post or whistle board, is a sign marking a location where a train driver is required to sound the horn or whistle.

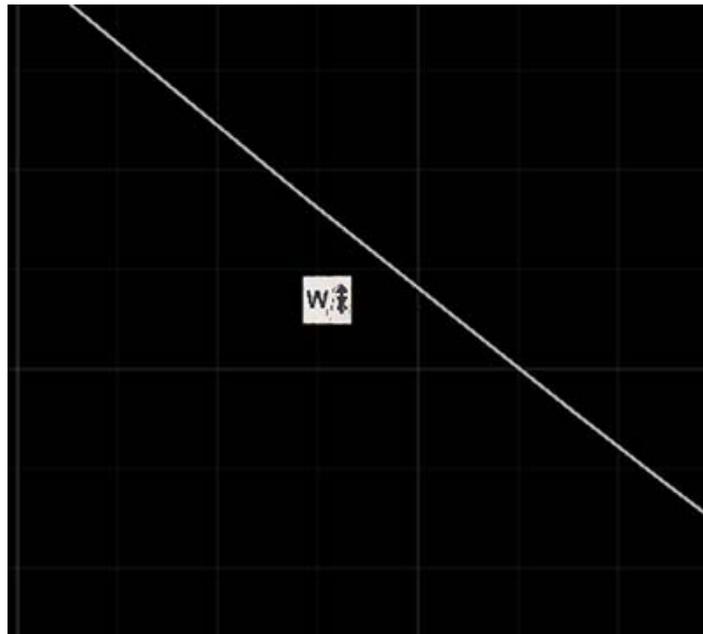
There are **2** different types of whistle sign posts on the **Taurus Mountains** route.



**Left:** "MAKİNİST DÜDÜK ÇAL" (Engineer, blow the whistle) **Right:** "DİKKAT HEMZEMİN GEÇİT DÜDÜK ÇAL" (Attention, level crossing, blow the whistle.)

*In some career scenarios, if the whistle is not blown while passing these marks, a loss of points may occur.*

This is how the whistle markers appear on the map view.



## 5.7. Kilometer Signs / Mileposts

As the name suggests, kilometer signs (aka **mileposts**) are placed at the actual kilometer points of the line.



This is how the kilometer signs appear on the map view.



## 5.8. Other Signs

- **Shunting end point sign**

This sign is usually placed at the point where the diverging signal is located at the entrances and exits of the yards/stations. The purpose of it is to show the last permissible point that train consists which is maneuvering in the station can reach.



- **Railway prohibition signs**

**Loose shunting prohibited:**

This sign is placed at the maneuvering stations. When the coaches of a train are set to move all by itself without any engine or locomotive, it is known as **Loose Shunting** in railways. For this reason, loose shunting is prohibited where this sign is present.

**Enter the dangerous area is prohibited:**

**Crossing the bridge is dangerous and prohibited:**

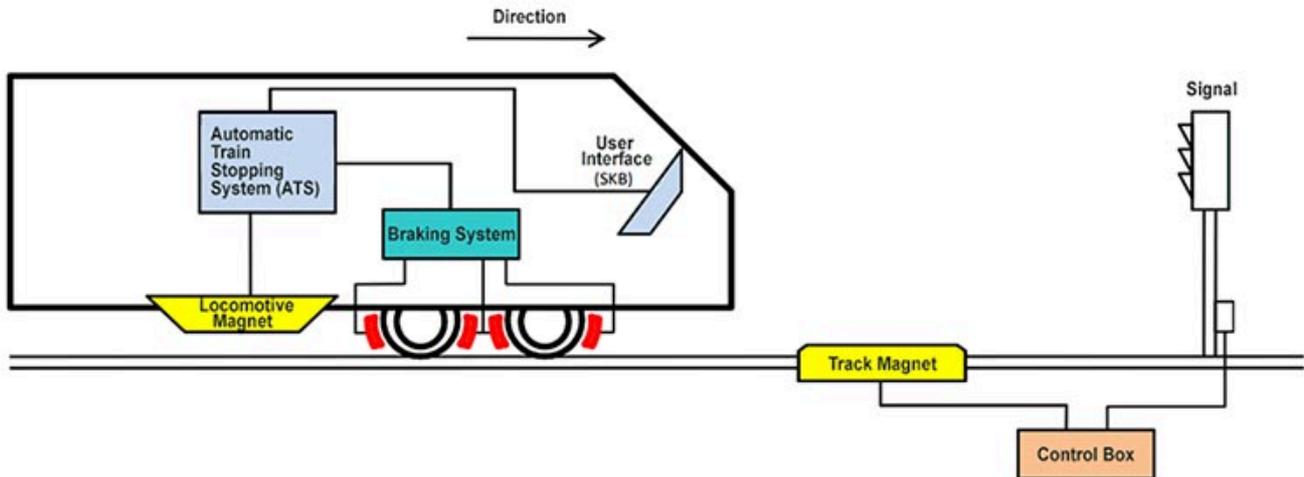


## 6. SAFETY SYSTEMS

## 6.1. ATS (Automatic Train Stopping System)

**Automatic Train Stopping system (ATS)**; is a system that performs forced braking and controls the speed limit in case the locomotives do not comply with the signal notifications.

In order to achieve this, there are magnets along the track and **ATS** equipments on the locomotives to affect the locomotives.



According to the color of the signal, the magnets on the locomotive produce different types of notifications when passing over the track magnets. These electrical signals are detected and evaluated by on-board equipment.



**ATS-101**  
(Automatic Train Stopping System)



**DTM-101**  
(DTM Type Locomotive Magnet)



**BTM-101**  
(BTM Type Locomotive Magnet)

There are two different types of magnets still in use in railways. These are **WEST** and **EAST** type magnets. The magnets we use in the **Taurus Mountains** route are **WEST** type magnets.



(BTM) Type Track Magnet



*Left: BTM Type Locomotive Magnet. Right: DTM Type Locomotive Magnet.*

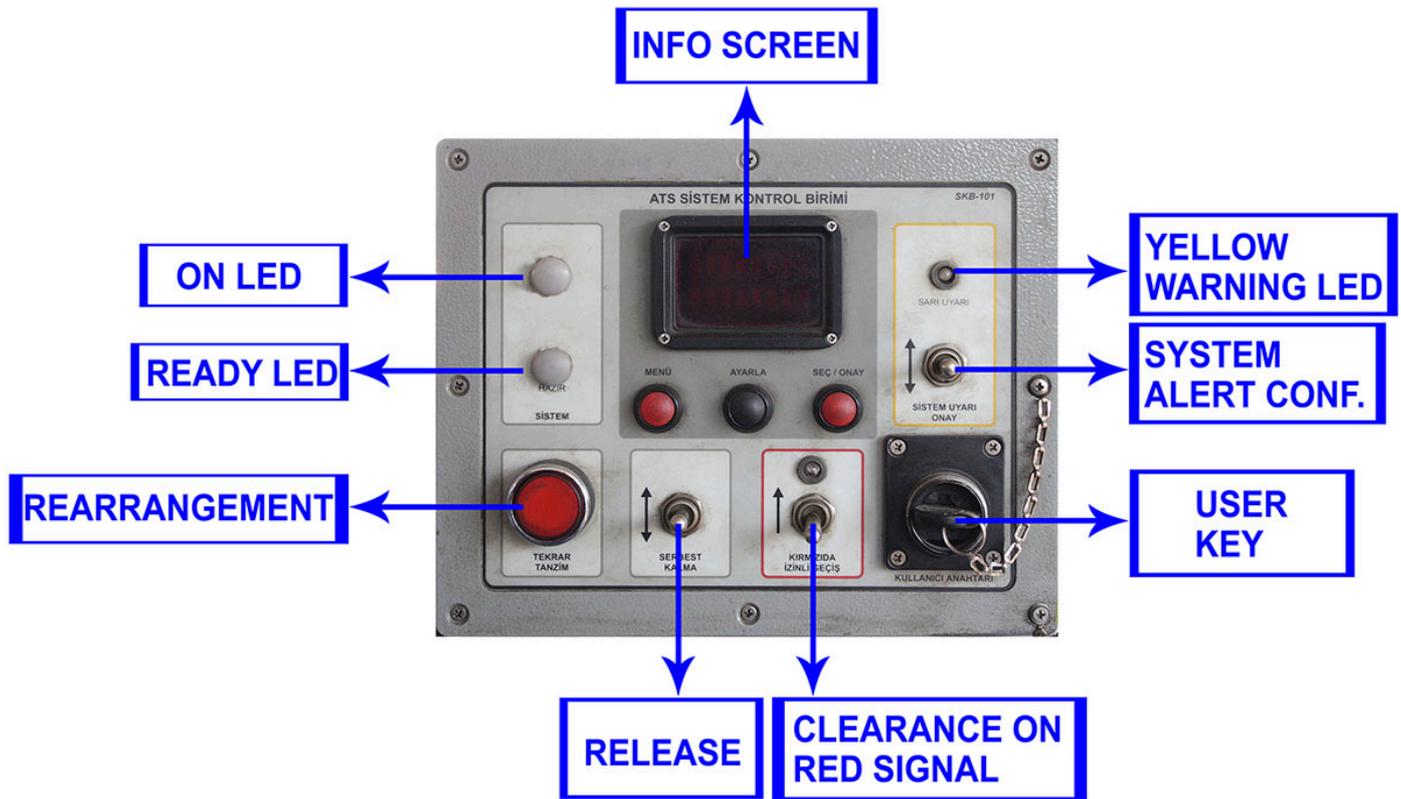
### 6.1.1. SKB-101 System Controller Unit

- **SKB-101 System Controller Unit**

The **SKB-101** type **ATS** control panel is used in **DE 24000s** and other similar old locomotives. **The System Controller Unit** is located in the cabin where the engineer can easily reach while operating. It is aimed to inform the engineer about the operation of the system with the illuminated indicators.



The meaning of the LEDs and switches on the panel is as follows:



**INFO SCREEN:** It is the LCD screen that shows the information about the ATS system.

**ON LED:** Indicates that the ATS System is on and that the energy is coming.

**READY LED:** Indicates that there is sufficient pressure in the Main Reservoir.

**REARRANGEMENT:** Indicates that the locomotive is ready to move after an emergency braking occurs.

**RELEASE:** Allows you to exit Speed Limit Control after YELLOW WARNING signal is received.

**CLEARANCE ON RED SIGNAL:** Indicates that the Clearance on red signal switch is in the on position. It is used for the SPAD permission.

**USER KEY:** It is used to activate the ATS system.

**SYSTEM ALERT CONFIRMATION:** Silences the alerter. When the YELLOW WARNING signal is received, if this switch is not hit within 10 seconds, automatic braking occurs.

**YELLOW WARNING LED:** Indicates that the Yellow Warning signal is received.

## 6.1.2. ATS Panel Usage

When the circuit breaker of the **ATS** system is switched on, the **ON LED** of the **ATS** panel lights red. If the locomotive has sufficient **Main Reservoir Pressure**, the **READY LED** will illuminate blue.

**ANAHTAR TAKIN!** (Insert User Key) message is displayed on **LCD**. In this position, since the **ATS** system is disabled, it does not interfere with the locomotive.



### Note:

You can operate the locomotive with the **ATS** system disabled, but for realism and safety reasons, we recommend playing the scenarios with the **ATS** system turned on.

The **ATS** panel starts up when the **USER KEY** is turned on. First, it does internal controls. If no errors are found as a result of the tests, the operating system showing the date and time appears on the LCD screen.





**Note:**

You can turn the **USER KEY** on or off by pressing the **U** key.

Even if you turn off the **USER KEY** while the locomotive is in motion, the **ATS** system will not be disabled. You can disable the **ATS** by turning off the **USER KEY** when the locomotive has come to a complete stop.

### 6.1.3. Warnings & Alerts

When the locomotive passes a signal indicating the **Proceed with caution aspect** status (single **YELLOW** or **YELLOW-YELLOW** signals), the **SARI \*UYARI\*** (Yellow Warning) will appear on the **LCD**. Also, the **YELLOW WARNING LED** lights up yellow and **ATS** system gives an audible alert.



#### Note:

You can confirm the **YELLOW WARNING** by pressing the **Q** key.

In this case, the **SYSTEM ALERT CONFIRMATION** switch must be hit within 10 seconds. If this switch is not hit within 10 seconds, the locomotive will automatically apply **Emergency Brake** until it stops.

In this case, the **LCD** display shows **FREN YAPILDI!** (Brakes applied) message appears. No intervention can be made until the locomotive stops.



After the locomotive comes to a complete stop, the **REARRANGEMENT** button becomes active and the red light on it turns on. In addition, the text **TEKRAR TANZİM** (Rearrange) will appear on the **LCD** screen. After releasing the brakes of the locomotive, this button must be pressed before moving.



If you move without pressing this button, when the locomotive exceeds **12 km/h**, emergency braking will occur again and the above-described operations will repeat.

After the locomotive receives the **YELLOW WARNING** and the **SYSTEM ALERT CONFIRMATION** switch is hit, the **ATS** system starts counting down for speed check. After **20** seconds, **Speed Limit**

**Control** is activated and the message **HIZ 65KM KONTROL** (Speed 65 km control) appears on the **LCD** screen. In this state, if the locomotive is above **65 km/h**, emergency braking is automatically applied and the above-described operations are repeated.



After receiving the **YELLOW WARNING**, the correct action to be taken by the engineer should be to reduce the speed of the locomotive below **65 km/h**. But in some cases, **65 km/h** speed limit control can be exited if there is too much distance to the next signal and maintenance of speed is necessary for the timetable.

In this case, if the **RELEASE** switch on the panel is hit, the locomotive will exit speed limit control. This switch can also be hit before **65 km/h** control starts, in this case **65 km/h** control will not start at all. The message **HIZ SERBEST** (No limit) appears on the **LCD** display.



**Note:**

You can press the **C** key to exit the speed limit control.

If the locomotive passes through a signal showing the **Stop aspect** or the **Subsidiary aspect (RED Signal, RED-YELLOW Signal)**, the emergency brake is automatically applied and the steps described above are performed. In this state, **KIRMIZI \*UYARI\*** (Red warning) message is displayed on the **LCD** screen. Also, an audible warning sounds again.



After the locomotive comes to a complete stop, the **REARRANGEMENT** button becomes active and the red light on it turns on.

### 6.1.4. Clearance on red signal

In some cases, the locomotive has to go through a signal that shows red (**Stop aspect** or the **Subsidiary aspect**). In such cases, the **CLEARANCE ON RED SIGNAL** switch must be turned on in order for the **ATS** system to detect that the red signal has passed with permission.



#### Note:

You can press the **K** key to turn on **CLEARANCE ON RED SIGNAL** switch.

When this switch is turned on, **HIZ 40KM KONTROL** (40KM Speed Check) and **IZINLI GECIS!** (Authorized Pass) messages will alternately appear on the screen. It also plays an audible warning.

As long as this switch is turned on, the red signal can be passed and the locomotive won't brake. This switch should be turned off after moving away from the red signal. When this switch is turned off, the message **HIZ SERBEST** (No limit) appears on the **LCD** display for a short time.

The **ATS** system monitors the speed of the locomotive when this switch is turned on and automatically applies the emergency brake if the speed of the locomotive exceeds **40 km/h**.

The **40 km/h** and **65 km/h** speed limit controls are disabled when the locomotive drops below **12 km/h** or when the **ATS** receives another notification from magnets.



#### Note:

We recommend playing the following scenario to experience all the details described in this chapter in-game:

#### Standard Scenario;

*4 - Introduction to DE 24000 (ATS and Signals)*

## 6.2. Permissible Speed Limits

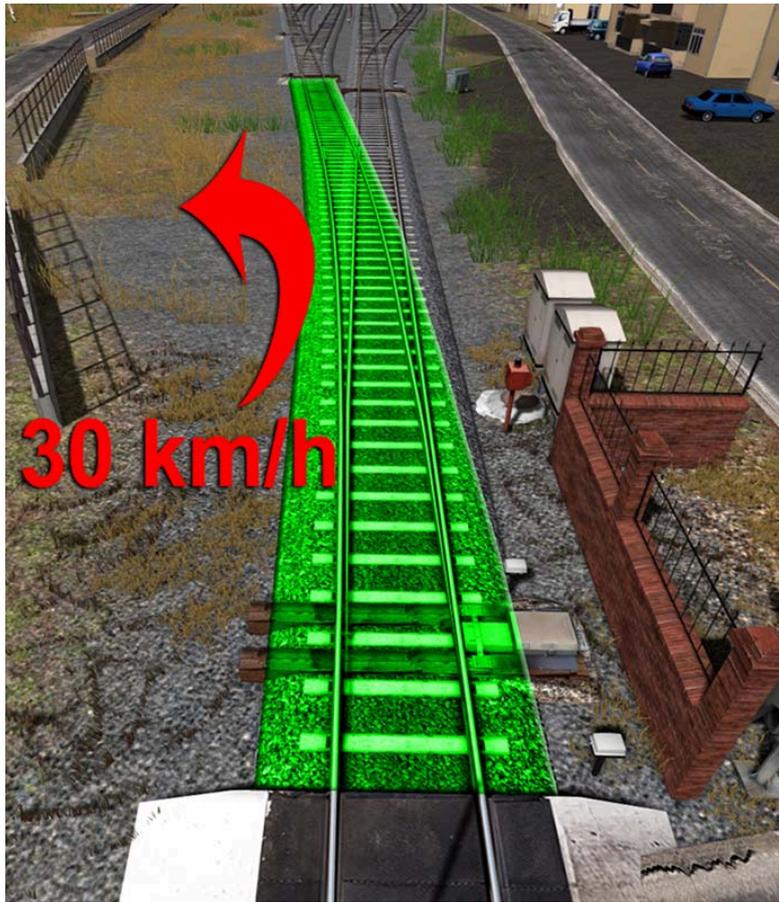
The maximum speed for passenger trains is **110 km/h**.



The maximum speed for freight trains is **70 km/h**.



The speed limit is **30 km/h** for diverging routes on the switches.



On tracks leading to the locomotive warehouses and on some sidings, the maximum speed may be:  
**5 - 10 - 15 km/h.**

Please check the speed limits by opening the **F4** information screen while shunting.

## 7. READING THE TIMETABLE

Train time table is the running schedule of a particular train. The train time table contains train timing - from its departure station to its termination station, halting time for the train at stoppages along the way, train meets and some speed restrictions because of track maintenances or broken rails.

It is important to read the timetable correctly, to be able to operate the trains to the stations on time and to complete the scenarios correctly.

You can see the timetables of the various trains by pressing the clip on the dashboard located on the front panel of the **DE 24000**.

62001 Erciyes Ekspresi							
Azami Hız 110 km/s							
İSTASYONLAR	Azami Hız	Azami Müddet	Tekli Müddet	Varej	Kalkış	Bulupma	Öne Geçme
Yenice	30	7	8	16:58	17:02	63625.X	
Km.344+600	30						
Km.337+600	100						
Km.328+800	110						
Durak	80	12	15	17:17	17:18		
Km.324+200	80						
Kelebek	70	5	8	17:26	17:27		
Km.318+800	70						
Km.315+800	75						
Karaisalbucağı	55	5	8	17:35	17:36		
Km.315+000	55						
Km.306+400	70						
Hacıhan	55	8	11	17:47	17:48		
Km.305+600	55						
Km.296+800	65						
Km.294+800	80						
Km.292+000	70						
Belemedik	55	12	13	18:01	18:02		
Km.290+800	55						
Km.282+400	70						
Pozantı	55	9	9	18:11	18:13	33302.X	
Km.281+000	55						
Km.276+000	75						
Km.266+600	70						
Çiftahan	55	14	15	18:28	18:30	53814.X 62006.X	63627.X
Km.265+200	55						
Km.258+600	70						
Km.257+200	75						
Km.251+800	80						
Gümüş	55	13	16	18:46	18:47	13128.X	
Km.250+400	55						
Km.242+600	90						
Ulukışla	95	9	13	19:00	19:02		
Km.236+200	95						
Karşıpınarı	80	3	5	19:07			

21206 Çukurova Ekspresi							
Azami Hız 100 km/s							
İSTASYONLAR	Azami Hız	Azami Müddet	Tekli Müddet	Varej	Kalkış	Bulupma	Öne Geçme
Km.236+000	70	13	16	04:54	04:55		
Ulukışla	70	2	2	04:57	05:02	64822.X	63562.X
Km.238+400	30						
Km.250+000	30						
Gümüş	75	15	16	05:18	05:19	64802.X	
Km.251+600	40						
Km.257+200	80						
Km.265+000	70						
Çiftahan	70	17	18	05:37	05:38		
Km.267+000	40						
Km.275+200	70						
Km.280+800	75						
Pozantı	75	18	18	05:56	05:58		63556.X
Km.282+600	40						
Km.290+400	70						
Belemedik	75	11	12	06:10	06:11	63572.X	
Km.292+200	40						
Km.295+000	70						
Km.305+200	65						
Hacıhan	80	17	17	06:28	06:29		
Km.306+800	40						
Km.314+600	70						
Karaisalbucağı	75	8	9	06:38	06:39	66001.X	
Km.327+200	85						
Durak	75	11	12	06:51	06:52	63747.X	
Km.344+200	85						
Km.345+600	85						
Yenice	1	11		07:08	07:09		
Km.348+000	55						

The timetable you see in the example on the right is a real timetable of **Çukurova Express**. This train runs between the capital **Ankara** and **Adana** every day and consists of pulman and sleeper wagons.

1 61205 Çukurova Ekspresi 2 Azami Hız 100 km/s 3							
İSTASYONLAR	4 Azami Hız	5 Aşgari Müddet	6 Tabii Müddet	7 Varış	8 Kalkış	9 Buluşma	10 One Geçme
<b>Yenice</b> 11	30	5	5	19:49	19:51	63748 X	
Km.344+900 12	30						
Km.344+700 13	20						
<b>Topçu</b> 14	90						
Km.329+000	90						
<b>Durak</b>	90	14	16	20:07	20:08		
Km.327+200	40						
Km.316+000	75						
<b>Karaisalıbucağı</b>	75	11	19	20:27	20:28		
Km.314+600	40						
Km.306+800	70						
<b>Hacııırı</b>	75	8	14	20:42	20:43	63001 X	
Km.305+200	40						
Km.295+000	85						
Km.292+200	70						
<b>Belemedik</b>	80	17	18	21:01	21:02		
Km.290+400	40						
Km.282+600	70						
<b>Pozantı</b>	75	11	12	21:14	21:15		63552 X
Km.280+800	40						
Km.276+200	75						
Km.267+000	70						
<b>Çiftehan</b>	75	18	19	21:34	21:36	63555 X	
Km.265+000	40						
Km.251+600	80						
<b>Gümüş</b>	75	17	22	21:58	21:59		
Km.250+000	40						
Km.242+000	90						
Km.238+400	95						
<b>Ulukışla</b>	70	15	18	22:17	22:19	64802 X	
Km.236+200	30						

The meanings and usage patterns of numbered information can be explained as follows:

- 1 The train's **trip number**. This number is defined by the consist directorate in the city where the train will depart and does not change during the journey of the train. Please see the [Meanings of Train Numbers](#) section for the meanings of the numbers here.
- 2 If it is a passenger train, it shows the **name of the train**.
- 3 It shows the **maximum speed** that the train can go during the journey.
- 4 It shows the **maximum speed** that the train can go between that point and a next point. Please see the [Samples](#) section.
- 5 Indicates the **minimum travel time** in minutes the train can arrive at that station.
- 6 Indicates the **maximum travel time** in minutes the train can arrive at that station.
- 7 Indicates the **time** at which the train should **arrive** at that station within the maximum travel time.
- 8 It shows the **time** when the train should **depart** from that station.
- 9 Indicates that there will be a **meet at the station** with the oncoming train which has that number. The **X** next to the number means trains coming from opposite directions on single lines and each going forward from the path the other passed.
- 10 On single-track railways, slow trains usually give way to faster trains. The number here shows the number of the train that our **train will pass**.
- 11 The stations in bold indicate the stations where the **train will stop**.
- 12 The number written here is the **milestone information** of the line and it shows the **maximum speed** to be traveled on the section of the line between the previous station (or milestone) and this milestone.
- 13 The number written here is the **same** as described in the previous article.
- 14 It indicates that the train will **pass through** this region with the name written in normal letters.

## 7.1. Samples

	<p><b>When we examine the example shown in pink:</b></p> <ul style="list-style-type: none"> <li>• Our train has arrived at <b>Hacııri Station</b> and will make a stop there,</li> <li>• Our train can travel at a maximum speed of <b>75 km/h</b> between the milestone of Km <b>306+800</b> (800th meter of the 306th kilometer) and <b>Hacııri Station</b>,</li> <li>• Departure from the previous station and arrival time at this station would be minimum <b>8</b> minutes and maximum <b>14</b> minutes. (minimum <b>20:36</b> - maximum <b>20:42</b>),</li> <li>• It should arrive at the station at <b>20:42</b>, it will depart at <b>20:43</b> after a <b>1</b> minute passenger stop,</li> <li>• The express freight train numbered <b>63001</b> will meet with our train at this station.</li> </ul>
	<p><b>When we examine the example shown in blue:</b></p> <ul style="list-style-type: none"> <li>• Our train has arrived at <b>Pozantı Station</b> and will make a stop there,</li> <li>• Our train can travel at a maximum speed of <b>75 km/h</b> between the milestone of Km <b>282+600</b> (600th meter of the 282th kilometer) and <b>Pozantı Station</b>,</li> <li>• Departure from the previous station and arrival time at this station would be minimum <b>11</b> minutes and maximum <b>12</b> minutes. (minimum <b>21:13</b> - maximum <b>21:14</b>),</li> <li>• It should arrive at the station at <b>21:14</b>, it will depart at <b>21:15</b> after a <b>1</b> minute passenger stop,</li> <li>• Our train will pass the block freight train numbered <b>63552</b> at this station.</li> </ul>
	<p><b>When we examine the example shown in green:</b></p> <ul style="list-style-type: none"> <li>• Our train is passing the milestone of Km <b>265+000</b> and will not make a stop there,</li> <li>• Our train can travel at a maximum speed of <b>40 km/h</b> between the <b>Çiftehan Station</b> and milestone of Km <b>265+000</b> (0 meter of the 265th kilometer),</li> <li>• Since there is no need to stop here, no time limit is set.</li> </ul>

## 7.2. Meanings of Train Numbers

The trip numbers given by **TCDD** to its trains consist of **5** digits.

e.g: **63552**

The meaning is as follows:

**First digit**    **Second digit**    **Third, Fourth and Fifth digits**  
 Region Code    Type of Train    Sequence Number of the Train

Type of Train	Region Code	Type Code	Sequence No
<b>A- Passenger Trains</b>			
1. Commuter Trains	1 - 9	0	001-999
2. Super Expresses	1 - 9	1	001-100
3. Blue Trains	1 - 9	1	101-200
4. Expresses	1 - 9	1	201-600
5. Regional Express	1 - 9	1	601-999
6. Railbus and Mototrains	1 - 9	2	001-500
7. Normal Passenger Trains	1 - 9	2	501-800
8. Mixed Trains	1 - 9	2	801-999
<b>B- Freight Trains</b>			
1. Express Freight Trains	1 - 9	3	001-500
2. Block Freight Trains	1 - 9	3	501-999
3. Regional Express Freight Trains	1 - 9	4	001-800
4. Slow Freight Trains	1 - 9	4	801-999
<b>C- Special Trains</b>			
1. Special Passenger Trains	1 - 9	5	001-500
2. Special Freight Trains	1 - 9	5	501-999
<b>D- Service Trains</b>			
1. Single Locomotives	1 - 9	6	001-999
2. Recovery Locomotives and Trains	1 - 9	7	001-300
3. Work Train, Construction Equipment and Snowplow	1 - 9	7	301-600
4. Auto Draisine	1 - 9	7	601-999
5. Motorized Draisine	1 - 9	8	001-999

**Let's examine the 61205 Çukurova Express, the train we showed in the Timetable example, and the types of trains it will meet during trip:**

Train Name or Type	Region Code	Type of Train	Sequence Number of the Train
<b>61205</b> (Çukurova Express)	<b>6</b> (6th Area)	<b>1</b> (Passenger Trains)	<b>205</b> (201-600 = Expresses)
<b>63748</b> (Freight Train)	<b>6</b> (6th Area)	<b>3</b> (Freight Trains)	<b>748</b> (501-999 = Block Freight Trains)
<b>63001</b> (Freight Train)	<b>6</b> (6th Area)	<b>3</b> (Freight Trains)	<b>001</b> (001-500 = Express Freight Trains)
<b>64802</b> (Freight Train)	<b>6</b> (6th Area)	<b>4</b> (Freight Trains)	<b>802</b> (801-999 = Slow Freight Trains)

## 8. SCENARIOS

<b>STANDARD SCENARIOS</b>		
	21206 Cukurova Express (Ulukisla-Yenice)	Operate the Cukurova Express from Ulukisla to Yenice.
	22002 Erciyes Express (Ulukisla-Yenice)	Operate the Erciyes Express from Ulukisla to Yenice on time.
	61205 Cukurova Express (Yenice-Ulukisla)	Operate the Cukurova Express between Yenice and Ulukisla.
	62001 Erciyes Express (Yenice-Ulukisla)	Operate the Erciyes Express between Yenice and Ulukisla.
	64902 Container Shunting (Yenice)	Load the empty container wagons and drop them at the sidings.
	1 - Introduction to DE 24000 (Cold and Dark Start)	DE 24000 Tutorial Scenario
	2 - Introduction to DE 24000 (Indicators and Controls)	DE 24000 Tutorial Scenario
	3 - Introduction to DE 24000 (Operating)	DE 24000 Tutorial Scenario
	4 - Introduction to DE 24000 (ATS and Signals)	DE 24000 Tutorial Scenario
	5 - Introduction to the Taurus Mountains (Part 1)	About the Taurus Mountains Route
	6 - Introduction to the Taurus Mountains (Part 2)	About the Taurus Mountains Route
	61305 Toros Express (Yenice-Ulukisla)	Take the Toros (Taurus) Express from Yenice to Ulukisla on time.
	63338 Freight Service (Yenice-Ulukisla)	Operate a heavy freight train from Yenice to Ulukisla with a helper engine.
	64742 Freight Service (Belemedik - Yenice)	Take the mixed freight train from Belemedik to Yenice.
	64813 Gypsum Transfer (Ulukisla)	With the locomotive from Ulukisla Depot, take the loaded wagons from the gypsum loading facility and bring them back to Ulukisla.
	66003 Shunting (Ulukisla)	Refuel the DE 24000 locomotive and then maneuver the wagons of the Erciyes Express.
	66734 Container Shunting (Yenice)	Maneuver loaded container wagons at Yenice.
	71306 Toros Express (Ulukisla-Yenice)	Take the Toros (Taurus) Express from Ulukisla to Yenice in difficult weather conditions.
<b>QUICK DRIVE SCENARIOS</b>		
	DE 24000 Ulukisla Quick Drive	
	DE 24000 Yenice Quick Drive	
<b>FREE ROAM SCENARIOS</b>		
	Hacikiri - Ulukisla Free Roam	
	Pozanti - Ulukisla Free Roam	
	Ulukisla - Yenice Free Roam	
	Yenice - Ulukisla Free Roam	

## 9. CONTENT CREATORS - TERMS AND CONDITIONS

## 9.1. End User License Agreement (EULA)

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- Scenario Packs
- Route Enhancement Patches
- Audio Enhancement Packs

If you are interested in working with us please contact us through our web site.

### 9.3. Workshop Scenarios

We encourage the creation of non-commercial scenarios for **Taurus Mountains**. Those scenarios can be shared via all media including *Steam Workshop*, *forum sites*, *fan sites* and *blogs*.

## 10. ACKNOWLEDGEMENTS

The construction of our route and the rolling stock took longer than we expected due to the intensity of our private lives and the intervention of the **Covid19** pandemic. But still, we were able to complete our route with the highest quality as we promised and finally present it to you.

We would like to thank all our friends and the community who have always stood by us and supported us throughout this process.

### AND Model - Anadolu Model Demiryolları

**Şafak Aktaş** (Founder, lead 3D modeler, route designer, sound and script engineer, texture researcher)



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**Tarık Kara** (Taking detailed photos and videos of the route, making research about the route and history, media and press consultancy)



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Our dear train-loving friends around the world. We hope you like and enjoy this work as much as we do. If there are people whose names we have forgotten, we apologize to them. Hope to see you in our new works... **November 2022**

**The End...** *But it won't take long :)*