HaRakevet
הרכבת

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A Quarterly Journal on the Railways of Israel and the Middle East
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127:01. 'Do Not Enter' stands in illuminatred letters on the destination display of TRAXX 3006 on 10th. September as it stands at Tel Aviv HaHaganah station following the first full-length test run from Jerusalem Navon station with a 6-coach set headed by driving trailer 3006. (Photo: Yaron Dozetas)

127:02.

EDITORIAL.

Two themes are outstanding this issue. The first: We have followed this saga over several years and just before this issue went to press, the electric service over the "A1" line from Jerusalem to Tel Aviv was formally opened. No doubt future issues will continue to note train service cancellations and changes as the electrification works extend over the network – and also the arrival of new stock to work it. Truly a transformatory moment.

Second: The question: Are railway enthusiasts especially naive? In a way, one must suppose, that those who seek to enjoy a hobby are deliberately choosing to be amateurs, which means, those who do their work out of love. A hobby is also a form of escapism from harsh realities.

To be in love is a wonderful thing but it does make one focus on only some parts of reality and ignore others. The amateur admires a viaduct, the professional engineer and surveyor thinks of the effort which went into avoiding it as far as possible and then constructing it in difficult locations when unavoidable and then keeping it cheap to build. The amateur enthusiast is pleased that an elderly machine has been refurbished for further use, the professional railwayman knows that this was done mainly because there was no money for a newer, better replacement. The amateur enjoys seeing the trains pass by but is not dependent himself on a job which involves erratic starting times, long shifts, great physical effort and discomfort, low pay.

The thought is not new and the relationship between amateur and professional has always been one of those 'rubbing points' in human society - the editor, as a professional clergyman, has had many encounters with enthusiastic amateurs (the word 'enthusiastic' means that they think they are moved by divine power) who claim to know better than he how a certain event or ceremony or ritual ought to be performed or a text understood. But the thought is given depth by the manner in which modern enthusiasts often visit foreign countries, observe and photograph the railways and come home full of praise for the country - whereas a week or so later on the news there are reports of political riots, famine, state suppression of freedoms, and more. The visitor, the tourist, has simply lived in their bubble, shielded perhaps also by language issues and the wealth that tourists often have relative to the natives, able to stay in hotels and eat at restaurants and observe markets without being dependent for their next meal on what they can manage to haggle there.....

Professional railwaymen live in a different world subject to different demands, making the best of the resources they have, resources which are always sub-optimal to meet the demands upon them. They have to provide the infrastructure and the power and the stock and deliver according to strict timetables. In a way the museum railway creates a form of interface, for when running a genuine railway line a degree of professionalism is demanded of the amateurs. They may have chosen voluntarily to work with old machinery in their free time, but they have to make and keep to commitments and regulations. Even here there is a difference between reading, say, that a team worked through the night to repair a leaking boiler tube, and actually doing it oneself.

Escapism is legitimate and I am not opposed to it. The editing and production of this magazine is itself a form of escapism from the pressures of my daily work. But it is important to be aware of it. A website devoted to Turkish railways describes the trips made by modern enthusiasts who, rather than taking a bus to Holbeck depot to note down grimy 8F's, take flights from Stansted to pursue specific class DE22 locos around Sivas. It is a modern version of the same urge to observe and note, the same sense of fun. But no mention is made of internal political pressures, of jailed journalists, of state supervision of social media, of dictatorial decrees, of trouble on the Kurdish/Syrian border. In this issue we publish further account of enthusiast trips in Iran where it seems those involved had a great time, whereas in November the news (despite attempts to suppress journalists and internet) included reports of over a hundred killed and many more injured in riots sponsored by sudden rises in fuel prices, sudden reductions in state subsidies, that drove many citizens of an autocratic and hierarchic society 'over the edge'. For many people the colour of a locomotive is irrelevant, more important is whether it is transporting the food one needs. Let us not forget that most of the railways in the Middle East were actually built for military or political reasons, not just for trade and certainly not just to provide interest and pleasure to observers.

In 'Harakevet' we strive to record developments - because it is amazing how quickly things change - but of course from an external viewpoint; we are not ourselves involved in the civil wars, terrorist attacks, missiles, state subjugation of individual freedoms, and more. We are fortunate to be based in countries where it is still possible to say what you think and live in security. Every now and then it just helps to acknowledge this.

Finally – this issue marks the end of Series 33 and the start of a new round of subscriptions which we hope will cover at least a part of our production costs – all work is of course voluntary. Subcription forms are either enclosed or can be requested from Steve. I am glad to be able to say that we have completed another full Series despite various health and other complications during the year and – with thanks to all concerned – hope we can manage another series likewise! Thanks to our ever-reliable sources we have been overwhelmed with photos this quarter and once again it becomes a complex matter of choice and of finding space.....

Enjoy!

The Editor

127:03.

- *This will soon be an historic picture for several reasons. Within a few years this will become a four-track section, the (canalised) Ayalon being largely covered, and the electrification masts and gantries will cover all tracks. Here we see an IR picture of the electrification work under way along the Ayalon line.*

127:04.

NEWS FROM THE LINE.

(a). ELECTRIFICATION WORKS TOWARDS TEL AVIV.

[By the time this issue is published many of the following items will be of historical value only but they trace the various stages towards this important step in the development of I.R. We simply present them here in (roughly) chronological order and no doubt there will be further such announcements in the coming months as the wires are extended..... Ed.]

(i). From a press release of 12.09.2019 by Israel Railways Ltd.:

"The railways are in progress on the final stretch towards full service operation of the A1 line between Jerusalem and Tel-Aviv. In order to complete the electrification and performing test runs, there will be changes in traffic between Tel-Aviv, Ben-Gurion Airport and Lod stations at nights only between Monday 16.09.2019 and Thursday 19.09.2019, each night between 22:30 and the following morning at 04:30.

The completion of electrification, engineering works and test runs will enable full operation at the end of 2019 without the current need to change trains at Ben-Gurion Airport, as well as increasing the number of trains to be operated and extending service hours.

The following traffic changes will take place:

- Trains from the south will start/terminate at Lod station.

- Trains from the south will start/terminate at Tel-Aviv Savidor/Central station.

- There will be no service to/from the stations of Modi'in, Ben-Gurion Airport, Kfar-Habad and Lod Ganei-Aviv.

- Trains on the Western Negev line (between Ra'anana and Beer-Sheva) from the south will start/terminate at Tel-Aviv HaHagana station; from the north at B'nei-Brak station.

- Traffic will resume each morning at 04:30.

- Free shuttle bus services will be provided between 22:30 and the following morning at 04:30 as follows:

Between the stations of Lod, Tel-Aviv HaHagana, Tel-Aviv Savidor/Central and when needed or per demand - an additional stop at Tel-Aviv HaShalom station.

Between Modi'in, Ben-Gurion Airport and Tel-Aviv Savidor/Central stations.

Between B'nei-Brak and Tel-Aviv HaHagana stations."

(ii) LOD DEPOT LINKED.

Then: From a press release of 29.10.2019 by Israel Railways Ltd.:

"The Transport Ministry and Israel Railways Ltd. have passed another milestone in the electrification project:

This morning – 29.10.2019 - both the ministry and the railways can pat themselves on their backs; the first electric train has departed from the electric locomotives depot at Lod through the link track to the A1 line to run in service between Ben-Gurion Airport and Jerusalem Navon stations (until the full service between Tel-Aviv HaHagana and Jerusalem Navon stations starts at the end of 2019).

This has been enabled thanks to completion of the link as well as completion of electrifying the Tel-Aviv HaHagana - Ben-Gurion Airport section this summer; now the electric trains are running on their own power, avoiding the need to tow them by diesel locomotives to the A1.

No less important; the railways put into service just few days ago a new Bombardier double-deck power car/driving trailer fitted for electric traction, as well as 6 double-deck cars which together will improve operational flexibility on the A1."

(iii). TEST RUNNING COMMENCES.

Work continued. From a press release of 17.11.2019 by Israel Railways Ltd.:

"Another milestone: Yesterday - Saturday night, 16.11.2019 - the railways started regular test runs on the electrified line section between Ben-Gurion Airport and Tel-Aviv HaHagana stations thanks to the completion of line electrification and the Lod electric locomotive depot link with the A1.

The regular test runs now take place daily until the start of commercial service, at a frequency of two trains/hour each direction; During the test run stage passengers cannot board these trains at Tel-Aviv HaHagana station, and there are slight changes in schedule both at Ben-Gurion Airport and Tel-Aviv HaHagana stations.

- *Three photos by Aharon Gazit from 27.10.2019 show the electrified section of the old main line from the viaduct near Ben-Gurion Airport - one shot showing a Siemens Viaggio push-pull train set on the Modi'in line - and near the Lod North Industrial Zone with the old main line heading north and the turnout leading towards the Jerusalem line; also a view southwards towards Lod.*

Current [new] Transport Minister Mr. Benjamin Smotrich said: "Completing the 56 km between Tel-Aviv and Jerusalem is great news; I salute the former Transport Minister Mr. Israel Katz for his initiative to promote the A1 despite the challenges and objections; Citizens of Israel, hold up your heads and be encouraged; we face a lot of challenges; with God help we'll keep building and being built, but - most important – we will promote public transport for a better future for the citizens of Israel!"

As an integral part of the preparations to the full service, the railways recently performed a large-scale service exercise at Tel-Aviv HaHagana station with the participation of 500 extras who simulated passengers; the exercise included operating a special train from which the participants alighted, as well as preparing the station facilities with emphasis on changing trains, passing from one platform to another, etc.

Attached herewith is the picture provided by courtesy of Mr. Matan Berkovich-the railways' spokesman assistant:

- *TRAXX 3010 on an initial test run to HaHaganah on 06.09.2019 - on the right the present order of things!*

(iv). EXTRA BUSES.

"Further to the preparations of both the Transport Ministry and Israel Railways Ltd. to accelerate the electrification between Tel-Aviv HaHagana, Tel-Aviv HaShalom and Tel-Aviv Savidor/Central (and as a result closure of one active track out of the three on this section), both the Defence Ministry and the IDF (Israeli Defense Forces) will tomorrow - Thursday, 05.12.2019 - strengthen the special bus services provided. Buses will be added and their routes will be extended, so that they will not terminate at the Beer-Sheva stations but will run instead directly to some points at railway stations at the Greater Tel-Aviv Area, the Sharon area and the Greater Haifa Area.

This will significantly improve the service for soldiers returning home for weekend vacation, thus enjoying secured seats and space for luggage and without the need to change from train to bus, while significantly reducing the pressure typical to trains on Thursdays, thus improving the service for all the passengers.

Meanwhile, the railways continue with electrification works along the Ayalon corridor, with a significant jump through achieved during the last 24 hours with works reaching south, inside, and north of Tel-Aviv Hashalom station. IR also continue to provide alternative services for passenger by strengthening alternative lines, complementing bus services and constant situation assessments.

As part of lessons learned from the current week, almost ended, the railways have decided to extend two daily evening trains departing from Tel-Aviv HaHagana station at 17:05 and 18:05 respectively to terminate at Ashkelon station instead of Yavne West station; these trains are characterized by high demand and extending their services will reduce the pressure on the alternative line (through Lod, Ramla, Kiryat-Gat and Lehavim/Rahat), which is severely affected by the temporary closure of one track on the Ayalon."

(v). TRACK CLOSURE.

From a further press release of 25.11.2019 by Israel Railways Ltd.:

"Updating information regarding the closure of one out of the three tracks on the Ayalon line due to electrification works between Tel-Aviv HaHagana, Tel-Aviv HaShalom and Tel-Aviv Savidor/Central stations:

Due to these works the services on the Beer-Sheva - Ashkelon - Rishon LeZion Moshe Dayan - Ra'anana route will be split and there will be temporary changes to trains between 02.12.2019 and 20.12.2019, and between 06.01.2020 and 28.01.2020; during the Hanukkah holidays (22.-30.12.2019) services will be regular, particularly because this is a candle carnival time with a lot of children' festivals - so as not to spoil their happiness!

During works, trains starting at the Beer-Sheva stations will terminate at Yavne West (between Ashdod and Rishon LeZion Moshe Dayan); trains starting at Rishon LeZion Moshe Dayan will terminate at Tel-Aviv HaHagana.

Trains from Ra'anana southwards will start/terminate at B'nei-Brak and Tel-Aviv Savidor/Central stations; there will be no services between Yavne West and Rishon LeZion Moshe Dayan stations; all the stations will however remain open; alternative strengthened rail services will be provided and free bus shuttle services will be provided as complementary services.

Details of services changes on the Beer-Sheva – Ashkelon - Rishon LeZion Moshe Dayan - Ra'anana line:

At rush hours (06:00-09:00 and 15:30-19:00):

<u>From the south (trains starting at Beer-Sheva and Rishon Le-Zion Moshe Dayan stations:</u>

The two hourly trains from Beer-Sheva stations northwards will terminate at Yavne West from which, free bus shuttle services will be provided to Tel-Aviv HaHagana.

Alternatively, it will be possible to change trains northwards at Ashkelon and Ashdod stations.

The two hourly trains from Rishon LeZion Moshe Dayan will terminate at Tel-Aviv HaHagana; passengers wishing to go northwards will change trains at this station or will use free bus shuttle services linking to the next available station.

From north-east (starting points at Ra'anana West, Kfar-Sava, Rosh HaAyin, and Petakh-Tikva):

Out of four trains starting at Ra'anana West, two will terminate at B'nei-Brak and two at Tel-Aviv Savidor/Central stations.

From B'nei-Brak station a free bus shuttle service will be provided to Tel-Aviv University and Tel-Aviv Savidor/Central stations, from which rail services to the north and south will be provided; in any case, at both of the stations mentioned, passengers will be able to change trains both to the north and south.

At off-peak hours (between 09:00 and 15:30 and between 19:00 and 06:00):

From the south (trains starting at Beer-Sheva and Ashkelon:

The hourly trains from Ashkelon and Beer-Sheva (separately), will terminate at Tel-Aviv Hahagana station, where passengers will be able to change trains both to the north and to the south.

From north-east (starting points at Ra'anana West, Kfar-Sava, Rosh HaAyin, and Petakh-Tikva):

Of two trains starting at Ra'anana West, one will terminate at B'nei-Brak and one at Tel-Aviv Savidor/Central stations.

From B'nei-Brak station a free bus shuttle service will be provided to Tel-Aviv University and Tel-Aviv Savidor/Central stations, from which rail services to the north and south will be provided; in any case, at both of the stations mentioned, passengers will be able to change trains both to the north and south.

Additional important information:

The Tel-Aviv - Beer-Sheva line through Lod, Ramla, Kiryat-Gat and Lehavim/Rahat will operate regularly.

The night trains on the West Negev line between Tel-Aviv HaHagana, Ashkelon and Beer-Sheva will operate regularly."

(vi). From a press release of 06.12.2019 by Israel Railways Ltd.:

"Due to progress in the electrification works, in which the masts and catenary were erected at the northern outskirts of Tel-Aviv HaShalom station on 04.12.2019 whilst on 05.12.2019 works started near Tel-Aviv Savidor/Central and even further north along the Ayalon line, as well as thanks to operational efforts of the railways' teams, a significant part of the service on the Western Negev line will resume on Sunday evening 08.12.2019.

Electrification work on Ayalon.

The service of trains running on this line at the afternoon/evening rush hours (16:00-18:30) will return to its full length so trains will terminate at Beer-Sheva instead of Rishon LeZion Moshe Dayan, while calling at all the intermediate stations: Holon, Bat-Yam, Rishon LeZion Moshe Dayan, Yavne West, Ashdod Ad-Halom, Sderot, Netivot and Ofakim. Passengers wishing to use rail services north of Tel-Aviv HaHagana station will change trains at this station using the regular services.

Re-extending the route will reduce the need for alternative bus services and will reduce the overcrowding as happened during this week on the alternative line between Ashkelon, Ashdod, Rehovot and Lod.

The railways however continue providing alternative passenger services, either by strengthening alternative lines or complementing bus services; during the current week 162 buses provided services for 5,145 passengers; at the railways telephone helpline 20,000 calls have been received."

(vii). On 16.12.2019 came this: <u>OPENING IMMINENT.</u> "At last the A1 will start running completely:

"Unless there are any last moment developments, and although no official announcement has been given so far, the first electric service on the so-far electrified section between Tel-Aviv HaHagana and Jerusalem Navon stations, will depart from Tel-Aviv HaHagana station on Saturday night, 21.12.2019 at 21:56 and will arrive at Jerusalem Navon station at 22:29. The next train will depart an hour later.

The last train from Jerusalem Navon station for this night will depart at 00:02 and arrive at Tel-Aviv Hahagana station at around 00:35; originally a travel time of 28 minutes was promised but this has been found not realistic; each train calls at Ben-Gurion airport; trains will run at 30 minutes intervals; the first Sunday train will depart from Tel-Aviv Hahagana station at 05:53; last train from each station will depart at 21:30.

Until about 28.01.2020 electrification works will continue between Tel-Aviv HaHagana, Tel-Aviv HaShalom and Tel-Aviv Savidor/Central stations, to be followed by test runs between these stations; hopefully, by the end of February 2020 (a few days before elections on the 3rd. March) the service between Tel-Aviv Savidor/Central and Jerusalem Navon stations will start, saving train changing and time for many passengers."

• *Track on the Ayalon.)*

(viii). And this rather sour report from 'Times of Israel' 13.12.2019: "The long-anticipated direct Jerusalem - Tel-Aviv fast train will start operating on Saturday evening next week, December 21, according to the schedule on Israel Railways' official website — 18 years after the project began and 11 years after its originally scheduled completion date.

The electric line, whose launch date has been delayed numerous times over the years, will have its first commercial ride from the capital's Navon station at 9:56 p.m. and will reach the Tel-Aviv HaHagana station at 10:28 p.m. after a stop at Ben Gurion Airport. At the same time — 9:56 — the first train will leave Tel-Aviv HaHagana and will reach Navon at 10:30. Trains will also leave an hour later in both directions, and from Sunday, December 22, service will be every 30 minutes in both directions, except at night. The new line will significantly shorten the current commute between Israel's two largest cities. However, while the ride duration cited for years for the new line has been 28 minutes, the schedule has the Jerusalem - Tel-Aviv ride taking a longer 32 minutes and the Tel Aviv - Jerusalem commute taking 34 minutes (likely because it is uphill in that direction).

Authorities believe the train will reach other Tel-Aviv stations and Herzliya sometime next year.

Israel Railways last month launched twice-hourly trial runs on a daily basis — without carrying passengers — between Ben Gurion Airport and Tel-Aviv HaHagana. The first trial run was completed in September.

Currently, the train only runs between Jerusalem and Ben Gurion Airport because of delays in electrifying the section of track between the airport and Tel Aviv.

The original launch date for the fast train was 2008, 11 years ago. It was then repeatedly delayed, to 2014, and again to 2018 and 2019. The launching of the Jerusalem - Ben Gurion line, in October 2018, was marred by countless malfunctions, delays and shutdowns.

The project's total cost is estimated at NIS 7-9 Billion ($2-2.6 Bn), about four times higher than originally planned."

(ix) OPENING. ('THE 18.12 OUVERTURE')

From a press release of 18.12.2019 by the Transport & Roads' Safety Ministry:

"Breaking news: Four days before the official electric train services start on the A1, today – 18.12.2019 - the first passenger carrying train (and 2 ministers) inaugurated officially the service:

After several weeks of test runs, the electric train service on the A1 between Tel-Aviv HaHagana and Jerusalem Navon stations will start on Saturday night 21.12.2019; today however, current Transport & Roads' Safety Minister Mr. Bezalel Smotrich, current Minister of Foreign Affairs and formerly Transport & Roads' Safety Minister Mr. Israel Katz, Israel Railways Ltd. General Manager Mr. Michael (Micha) Maiksner and other VIPs inaugurated officially the service; on the train were also regular passengers who incidentally boarded it.

Since the opening of the Ben-Gurion Airport - Jerusalem Navon line section in September 2018 the line has carried more than 3 million passengers with a daily average of about 10,000; this may not seem impressive, but it is due to the temporarily limited number of 400 passengers/train; it is believed that the number will change gradually with the progress on electrification works between Tel-Aviv HaHagana, Tel-Aviv HaShalom, and Tel-Aviv Savidor/Central stations, through the introduction of much longer trains and more seats.

Transport & Roads' Safety Minister Mr. Bezalel Smotrich said: "I thank Mr. Katz, the ministry's management, and Israel Railways Ltd. for their far seeing vision in the long term by building the A1; this is an excited morning; nowadays when the media and politicians speak about "2 Israels" and the 2 states of Jerusalem and Tel-Aviv", we're bridging all the parts together; there will be no partitions between different groups of citizens; roads and railways make us unified".

Minister Katz said: "For me it is a day of celebration; after years of hard work and struggling, Jerusalem is enjoying a fast link with Tel-Aviv; I call the line: "King David's Railway" which link Jerusalem (also called David's city) with all network parts too; it has an important meaning of strengthening both Jerusalem and Israel; so is a state built exactly as we did in 1948 when Israel was founded".

Israel Railways Ltd. General Manager Mr. Michael (Micha) Maiksner said: "This is an important achievement for Israel Railways Ltd.; it is an impetus for our development programme including gradual replacement of the diesel-powered fleet with modern electric trains; service is to be further improved by completion of the electrification between Tel-Aviv HaHagana, Tel-Aviv HaShalom, and Tel-Aviv Savidor/Central stations; I thank our employees for their hard work and congratulate the passengers".

(b). TEL AVIV LOOP LINE: CONSORTIUM SELECTED.

From 'R.G.I.' 12.09.2019: "The Electra Infrastructures consortium has been selected as preferred bidder to undertake civil engineering works on the planned 30km line between Rishon LeZion and Modi'in, Israel Railways announced on September 10.

The electrified east-west line will largely follow the median of Highway 431, forming the southern part of a proposed 100km rail loop around the Greater Tel Aviv Area; the Highway 531 line forming the northern section through Ra'anana was opened in July 2018.

Starting from Rishon-LeZion Moshe Dayan station on ISR's Western Negev Line, the so-called 431 line will run via Rishon-LeZion HaRishonim and Ramla South to Modi'in, with a junction at Anava connecting to the new A1 line to Jerusalem Navon. The alignment will have 6 kilometres of elevated structures, including a 3·5km viaduct which will be the longest railway bridge in Israel; this will take the line over Kiryat - Rishon-LeZion road interchange to reach the existing station at Rishon-LeZion HaRishonim. There will also be three short tunnels, of which the longest will be 450m. Two new stations are envisaged, at Rishon-LeZion Rhombus and Ramla South.

Total cost of the project is put at around US$900M, of which the Electra Infrastructures contact is valued at US$112M.

Expected to open in 2026, the line would initially be served by two trains/h in each direction, increasing to four once extra capacity has been provided at Modi'in and Jerusalem Navon stations. The line is expected to carry around 15,000 passengers/ day. Journey times from Rishon LeZion Moshe Dayan to Modi'in would be cut from 60 min to 30 min, while the time to Jerusalem Navon would fall from 80 min to 45 min.

(c). ALL'S FARE IN ELECTIONS.

From a press release of 15.09.2019 by Israel Railways Ltd.:

"The railways have completed their preparations to provide full services on Tuesday, 17.09.2019, the general election day which is also a holiday in Israel.

Unlike former election days (including the last one just half a year ago…) in which services were provided on a reduced scale, the decision taken this time both by the Transport Ministry and Israel Railways Ltd. was to provide full services, namely 580 trains; this is further to early staff work regarding passengers' destinations on such a day. The railways expect to carry 250,000 passengers during the day.

While travel will be free of charge, the railways will issue paper cards at the automatic ticket vending machines from 16.09.2019 at 20:00 until 17.09.2019 at 23:59; the multi-liner smart card will not be valid on the election day.

(d). NEW SECURITY CENTRE.

From a press release of 15.09.2019 by Israel Railways Ltd.:

"Today the railways opened its unique Security Operation Centre - Rail S.O.C. Cyber Monitoring, thus becoming the leading railway company in that area. This is the first such in the world.

The start of operations is thanks to a cooperation between the railways, the National Cyber Speed Network, and RAFAEL-Armament Development Authority (belonging to the Defence Ministry); the latter built and operates the centre including the QRadar monitoring system of I.B.M.

During the last decade the railways have doubled the number of passengers carried, thus becoming an essential and leading factor in Israeli transportation. Parallel to this, the railways became the locomotive of world railway technologies, by utilizing the intensive process of assimilating breakthrough systems.

For several years the railways operate long tunnels in which are integrated control and operation systems which are among the world's safest and most advanced. At the same time the railways are fitting the GSM-R signalling; Israel Railways Ltd. is among the first networks in the world to be so equipped.

The electrification project currently in progress includes installation of current supply and modern electrical infrastructures systems, as well as receiving the most modern electric locomotives, in addition to opening the Rail Security Operation Center-Rail S.O.C. cyber monitoring, putting Israel Railways Ltd. in the focus of the world railway industry, thus bringing a significant rise in cooperation with other railway networks in the world.

The technologies being assimilated currently run alongside the veteran systems which changed from analog to digital, defined the railways as a "State Critical Infrastructure", according to the National Cyber Fastness Network instruction.

The railways Cyber department with the new centre give the answer to both cyber threats from organized attackers like states and organizations, as well as from terror groups.

At the opening ceremony Israel Railways Ltd. General Manager Mr. Michael (Micha) Maiksner greeted the railways' cyber department workers led by the railways' Coordination and Strategy Department Dr. Alex Dan, and Mrs. Yael Mor-Cyber

Department Manager; he also thanked to Mr. Rafael Franco-Head of the National Cyber Fastness Network for the cooperation, as well as to RAFAEL-Armament Development Authority (belongs to the Defence Ministry).

Mr. Maiksner added: "The new centre, which is one of the world most advanced of its sort, is an important layer of building the variety of the railways' operational technologies infrastructures' complex; it will operate-like all other railways control and operation centres-24/7, while upgrading the cyber abilities which are intended to provide maximum protection for the various systems and traffic safety".

He added: "Until I started my present job I did not realize how complex railway operation is, operating a train carrying 1,000 passengers on board is as complex as flying a 747 aircraft carrying 400 people, the train being advantageous by conveying more than double the number of passengers at a fraction of the energy consumption, but not with less complex control systems and cyber threats".

Mr. Rafael Franco, Head of the National Cyber Speed Network said: "Israel Railways Ltd. have today completed an important layer in cyber protection; the ability for early detection and identifying combined with additional protection circles puts Israel Railways Ltd. in the forefront of protection and technology progress of protecting land transportation; our railways are world pioneers in cyber protection, and many countries and industries show interest in transportation cyber protection".

RAFAEL Deputy General Manager for Marketing in Israel Mr. Oshri Lugasi said: "The railways' cyber protection project is unique in its network concept, based on the best of market-leading technology, which shows the amount of knowledge which RAFAEL has accumulated. It is the third cyber project led by RAFAEL to protect national infrastructures; previous projects were: the Beer-Sheva National Cyber and the protection of the credit reserves of the Bank of Israel".

"In the project, the methodology of operation and response has been built by cooperation with the railways' cyber division; an S.O.C. task-related team which has been recruited and trained by RAFAEL will operate the S.O.C. under the management of the S.O.C. manager; the project has been carried out by cooperation with MATRIX Company Ltd. (a computer systems and integration company) as subcontractor."

(e). LOD DEPOT ELECTRIFICATION.

From a press release of 20.09.2019 by Israel Railways Ltd.:

"An additional milestone regarding the completion of the electrification between Tel-Aviv Hahagana and Jerusalem Navon: This morning the first train test run (Bombardier electric locomotive type TRAXX + double-deck cars) took place between Tel-Aviv HaHagana station and the first electric locomotive depot at the Lod rail complex.

The test run is additional to the network tests being made during recent weeks towards the full operation of the Tel-Aviv - Jerusalem line towards the end of 2019. The test included of electric current on both the link to the Lod depot and at Tel-Aviv HaHagana station."

(f). AUTUMN TIMETABLE AND HIGH HOLY DAYS SPECIAL TIMETABLES.

Israel Railways Ltd. have announced the following in their website:

Due to the shorter daylight hours on Fridays and longer night hours on Saturday nights (trains do not operate after a certain hour on Fridays and during Saturday daytimes), the following changes will take place between 20.09.2019 and 26.10.2019: last trains on Fridays will depart at 17:00 instead of 18:00; first trains on Saturday nights will depart at 19:30 instead of 20:00; this will further change on 27.10.2019 - the introduction of winter time.

Between the end of September 2019 and 22.10.2019 the timetable will be altered to take account of the following Jewish holidays:

On Sunday 29.09.2019, the eve of the new Jewish year, trains will operate like on Fridays; electrification works will be performed as on Fridays.

On Monday, 30.09.2019, the first day of the new Jewish year, trains will not operate; traffic will resume on Tuesday night 01.10.2019, as on regular Saturday night.

On Monday 08.10.2019, the eve of Yom Kippur, the holiest Jewish day, trains will operate according to a special time table until 13:00; on Tuesday, Yom Kippur – 09.10.2019 - trains will not operate; on Tuesday night the only trains to operate will be the 23:13 from Nahariya to Ben-Gurion Airport and the 23:51 from Beer-Sheva Central to Tel-Aviv Hahagana.

During the Sukkot and Simchat Torah holidays:

On Sunday, 13.10.2019, the eve of Sukkot holiday, trains will operate as on Fridays; electrification works will be performed as on Fridays.

During Monday 14.10.2019 trains will not operate; traffic will resume on Monday night as on a regular Saturday night.

Between Tuesday 15.10.2019 and Thursday 17.10.2019 trains will operate as on weekdays.

On Friday 18.10.2019 trains will operate as on Fridays; electrification works will be performed as on Fridays. On Saturday night 19.10.2019 train will operate as on regular Saturday nights.

On Sunday, 20.10.2019 - the eve of the Simchat Torah holiday - trains will operate as on Fridays; electrification works will be performed as on Fridays.

On Monday 21.10.2019 the Simchat Torah holiday, trains will not operate; traffic will resume on Monday night as on regular Saturday night.

Between Tuesday 15.10.2019 and Thursday 17.10.2019 and on Tuesday 22.10.2019 there will be strengthened service between Beit-Shemesh and Jerusalem Malkha stations (the old line to Jerusalem) with service frequency of 1 train/hour each direction (instead of the regular frequency of a train every 2 hours); trains will call also at the Jerusalem Biblical Zoo station."

- *A view of a part of the Cyber Security Centre. (Photo courtesy of Matan Berkovich of IR and Aharon Gazit*

(g). CATS ON A HOT TIN ROOF.

The so-called 'northern suburban' train between Haifa Hof-HaCarmel and Carmiel carries usually commuters; recently the train carried two additional hitchhikers - two sweet street-cat kittens. They probably boarded the train at Kiryat-Motzkin, climbed onto the roof and remained there until the train arrived at Carmiel station; Here they probably felt that it was their opportunity to be rescued, and started wailing.

This caught the attention of the railway inspector Mr. Eliran Twig, who called the station shift manager Mr. Benzi Bivlil. Mr. Bivlil brought with him special equipment and the two succeeded in taking the kittens to the station. The story did not end there as Mr. Twig added: "One of the lady cashiers immediately took one of the kittens, while a passenger who was at the station adopted the other one, so both have now a warm home and we are proud of saving the animals."

(h). SAVING A BIRD OF PREY.....

From a press release of 06.10.2019 by Israel Railways Ltd.:

"The railways' security teams are used to protecting passengers but on Thursday 03.10.2019 they had a special satisfied guest, a black kite raptor.

In the middle of a routine patrol headed by Mr. Fadel Aza along the alignment between Akko (Acre) and Ahihud (on the line to Carmiel) he noticed the bird unable to fly. The team came nearer to the bird, found that she was injured, gained the bird's trust and made a phone call to a veterinary who advised that urgent surgery was needed.

A volunteer (a women from Haifa) offered to keep a close watch on the bird; then Fadel and a cashier from the Carmiel railway station brought the bird to Haifa Hof-HaCarmel station; the bird was then taken to the animal hospital at the Safari at Ramat-Gan.

Mr. Fadel Aza said: "We are used to protecting and rescuing human beings, but I could not imagine myself ever having to save a raptor; we are pleased to help preserve Israel's natural life."

(i). ELECTRONIC TICKETING; APPS.

A further (for the Editor, rather alarming) move towards the expansion of Appology came:

"The Transport Ministry has announced on 04.10.2019 that from 01.01.2020 payment on public transport services - including rail - will be done by application (App); This will enable users of Android and IPhone to pay too, since payment is not performed by the NFC component but by QR scanning.

On 03.10.2019 the Public Transport Tenders Committee selected the following bodies to operate the applications: Discount Bank in partnership with Cellopark Co. II. and HopOn Co. II., Digital IsraCard Co. II in partnership with Moovitapp Global, Pango Co. II., Bit and Hapoalim Bank; the winners required the lowest commission from the state.

The ministry will continue to operate the multi-liner smart card for children, elderly people who don't know to use applications (this includes the Editor!) and the Jewish Ultra-Orthodox population who does not use smart phones for religious reasons. (!)

(j). CYCLE CHAOS.

From a press release of 17.10.2019 by the Transport & Roads' Safety Ministry and Israel Railways Ltd.:

"In recent years the railways have enjoyed a huge and blessed increase in passenger traffic, including the number of bicycles and electrical scooters carried on trains, as well as more people with limited abilities using rail.

During the last decade the number of passengers carried almost doubled from 35.9 million in 2010 to 67.7 million in 2018; in this number is also included an unprecedented increase in the number of people with limited abilities using rail, which may exceed 65,000 in 2019.

Those passengers who board the trains with their bicycles at rush hours use the carriage specially designed for those with limited abilities, thus causing them disruption on their way in and out of trains, but beyond that, they tie the bicycles to the railings, doors, etc. blocking the whole passages; also senior citizens as well as young parents with baby trolleys are disrupted.

Shortage in the number of railway lines as well as rolling stock do not enable operation of longer trains and increased frequency; the railways - though encouraging the use of bicycles as a complementing mode of transport - have to balance between the passengers' needs and particularly those with limited abilities; they have decided - after approval by the ministry - to update the bicycle policy which will be valid from 01.12.2019 with the following principles:

- With the exception of rush hours, all sorts of bicycles (excluding those with balloon wheels) will be permitted to be carried on trains between 09:00 and 15:00 as well as between 19:00 and 06:00, as well as on Fridays and Saturday nights at any hour.

- Foldable bicycles will be permitted during rush hours, provided that they are carried in a special bag. Electrical foldable scooters are permitted during the whole day."

On 07.11.2019 it was announced: "Due to many protests and complains to the Transport Ministry against the railway decision to permit taking electric bicycles on trains, only when folded and packed in a special package, as well as restricting it to special parts of the day, current Transport Minister Mr. Bezalel Smotrich, has decided to delay it to January 2020 or a little bit later, and to hold a session of hearing from both sides, after which a decision is to be taken."

(k). STUDENTS.

From a press release of 23.10.2019 by Israel Railways Ltd.:

"The railways are preparing to provide a quality service for students also in the coming academic year 2019/2020.

The railways' data show that during the previous academic year - between October 2018 and October 2019 - almost 3.42M students used rail through students' travel contracts; some 30,000 more than in the previous academic year - between October 2017 and October 2018 - when 3.4M used rail. According to the Transport Ministry's instructions, there are two contracts for students: a 12 journeys ticket providing 33% reduction in fare, and an eextended contract which provides 50% fare reduction both on trains and buses.

From analyzing the student traffic per station it is learned:

Tel-Aviv University station is the most used; 481,000 students used it during 2018/2019; 4,300 more than during 2017/2018 when 477,000 used it.

More than 65,000 used Haifa Merkazit Hamifratz station which is not far from the Technion (Technical Institute) compared with 59,000 in the previous year; up by 10%.

More than 70,000 used Herzliya station which is adjacent to the Interdisciplinary Center; 4% more than in the previous year.

56,000 used Rishon LeZion Moshe Dayan station adjacent to the Administration College; 3,000 more than in the previous year; up by 6%.

More than 30,000 used the four stations on the Valley Line serving the Valley College; 92% more over the previous year when 16,333 used it.

As for the A1 line, 45,000 used it during the first year of operation; this is expected to grow significantly when the A1 will be fully operated electrically towards the end of 2019, when there will no further need to change trains at Ben-Gurion Airport station."

(l). INFRASTRUCTURE WORKS AT HAIFA.

From a press release of 03.11.2019 by Israel Railways Ltd.:

"The railways continue to develop and upgrade the railways infrastructure all over the network.

As an integral part of these project a track section of 1 km length will be replaced and upgraded near Haifa Central the 8 railway station; This will be performed by teams of engineers, engineering equipment operators, infrastructures workers of track, communication, and signalling, and track machinery operators.

Works will be performed between Friday 08.11.2019 at 00:01 and 16:00 the same day, and on Saturday night 09.11.2019 at 17:30 and Sunday morning 10.11.2019 at 04:00.

As a result, trains between Nahariya, Tel-Aviv, Ben-Gurion Airport and Modi'in (including night trains) will start/terminate at Haifa Central the 8 railway station instead of Nahariya on these dates and hours.

Trains on the Valley Line between Beit-She'an, Haifa and Atlit, as well as on the Galilee Line between Haifa and Carmiel, will not operate.

The Transport Ministry will strengthen the regular bus services at the area, while the railways will provide alternative bus services between Haifa Central, Merkazit HaMifratz, Akko (Acre) and Nahariya railway stations.

Traffic will resume on Sunday morning, 10.11.2019 at 04:00."

(m). FULFILLING A DREAM.

From a press release of 04.11.2019 by Israel Railways Ltd.:

"IT IS NEVER TOO LATE:

The head of the train drivers Mr. Mirom Amrani, the Netanya station master Mr. Hayim Murad and train driver Mr. Ophir Malka are used to providing quality rail services to thousands of passengers every day, but such an exciting journey as they provided for Mr. Dan Lorbert they will remember for a long time.

Recently members of the Lorbert family contacted the railways and explained that Dan, a senior citizen living at B'nei-Dror agricultural cooperative settlement near Netanya, had a driver's licence to almost every land vehicle: private car, truck, bus, forklift, motorcycle, agricultural vehicles and tractors. But his big dream to travel in a railway driving cab had not yet been realized!

Mr. Amrani became excited about this special wish and immediately started coordinating the journey.

A few days ago Mr. Dan Lorbert with his wife arrived at Netanya railway station where they were welcomed by the station master Mr. Hayim Murad and train driver Mr. Ophir Malka; a few minutes later he and his wife were in the drivers' cab travelling from Netanya railway station to Binyamina railway station and back.

At the end of the exciting journey the members of the Lorbert family sent the railway teams a letter saying: "We'd like to thank you from the depth of heart for the assistance and support given us, the personal attention and the amount of sympathy and empathy we received."

(n). TRACK RELAYING ON JERUSALEM (OLD) LINE.

From a press release of 11.11.2019 by Israel Railways Ltd.:

"The railways continue developing and upgrading track infrastructure all over the network, and as an integral part of this, work on replacing a turnout, as well as dismantling 150m of old track and replacing it by new will take place near the railway station of Beit-Shemesh (on the old rebuilt line to Jerusalem) between Wednesday 20.11.2019 at 22:00 and about 16:00 on Friday 22.11.2019, as well as between Saturday night 23.11.2019 at about 17:30 and Sunday morning 24.11.2019 at 05:00. Works will be carried by teams of engineers, engineering equipment operators, track, communication and signalling workers and track machinery.

As a result the following traffic changes will take place between Beit-Shemesh and Jerusalem Malkha:

On Wednesday 20.11.2019 from 22:00 and until service end on that day trains from the north namely between Netanya, Herzliyya and Beit-Shemesh, will start/terminate at Lod.

On Thursday 21.11.2019 trains from the north namely between Netanya, Herzliyya and Beit-Shemesh will start/terminate at Ramla; trains between Beit-Shemesh and Jerusalem Malkha will not operate; the stations of Jerusalem Malkha, Jerusalem Biblical Zoo and Beit-Shemesh will be closed.

On Friday 22.11.2019, trains between Lod, Beit-Shemesh and Jerusalem will not operate; the stations of Jerusalem Malkha, Jerusalem Biblical Zoo and Beit-Shemesh, will be closed.

On Saturday night 23.11.2019 trains between Tel-Aviv Savidor/Central, Beit-Shemesh and Jerusalem will not operate; the stations of Jerusalem Malkha, Jerusalem Biblical Zoo and Beit-Shemesh will be closed.

• *Trackworks and turnout replacement at Beit Shemesh, 22.11.2019. (Photos Aharon Gazit)*

The Transport Ministry will strengthen bus services in the whole area, while the railways will operate alternative bus services between the stations of Ramla, Lod and Beit-Shemesh. Traffic will resume on Sunday morning 24.11.2019 at 05:00.

(o). CONGESTION WOES.

Only a month has passed since the Transport Ministry opened the "Lane Plus" initiative to encourage more commuters to use public transport instead of private cars; the ministry also opened a lane at southern Netanya towards Tel-Aviv for shared private cars with at least 2 passengers; this last step failed totally after a short while, with drivers complaining of saving just 8 minutes compared with Highway 2 out of normal 90 minutes for a distance of around 30 km!

Not only that, but the mayor of Netanya Mrs. Miryam Feierberg has forbidden drivers from outside Netanya to enter the shared private cars lane, claiming that city is already clogged with its own cars; the enforcing of such instruction is almost impossible.

Just for comparison: a journey between Netanya and Tel-Aviv stations - including calling at Netanya Sapir, Beit-Yehoshua and Herzliyya stations - takes about 20 to 25 minutes for those who can easily reach the station!

Meanwhile, there is a sharp increase in rail usage and a lot of complaints that the already- overloaded stations of Binyamina, Netanya and Tel-Aviv are almost collapsing; the railways suffer from track and rolling-stock shortage and commuters claim that during rush hours they travel standee like sardines; the head of the local authority of Binyamina Mr. Weissberg said that he will not allow Binyamina to become the regional parking area (many drivers park at private property due shortage of space).

The ministry has promised to invest more in parking facilities and add bus shuttle services to/from stations but everything takes time.

Attached herewith are 3 pictures showing congestion at Binyamina and Tel-Aviv Savidor/Central stations; source: the daily newspaper Israel Today and by their permission.

(p). HADERA EXPANSION.

On 17.11 came a further press release:

"Both the Transport Ministry and the railways are making efforts to increase public transport share at the North Sharon area, Hadera and other nearby populated areas.

These activities are lessons from the failure of the shared-car lane on coastline Highway 2 between Netanya and Tel-Aviv, recently reported.

This report refers to the station of Hadera West which is quite heavily used by residents from the surrounding area; they complained repeatedly that there is shortage of parking space and therefore a new parking with space for 400 cars will be built in addition to the already existing 640; an additional area with space for 85 cars will also be built, thus bringing the total available area to more than 1000 cars.

Since the new parking area is outside the station, an overhead pedestrian bridge will be built between the parking and the station to make it accessible.

Until the completion of the bridge the railways will operate a free shuttle bus service between the two, Sunday to Thursday between 05:30 and 00:00.

(q). MORE ROCKETS.

On 12.11.2019 Israel Railways Ltd. announced that due to the killing of a senior member of the Islamic Jihad organization in Gaza early this morning, and the response of launching dozens of rockets against civilian targets particularly in the south, trains on the Western Negev line between Ashkelon, Netivot, Shderot, Ofakim and Beer-Sheva would not operate; trains from/to the north start/terminate at Ashkelon; services on the Lod - Ramla – Kiryat-Gat - Lehavim/Rahat - Beer-Sheva line run as usual for the moment. The HFC (Home Front Command) has instructed civilians how to behave when an alarm is being heard. Punctuality is down to 63% due to the need to stop traffic in each case of alarm."

- *The situation room at the Lod control centre during the recent attacks. (Courtesy of Mr. Matan Berkovich, IR Press Office).*

Then: Israel Railways announced on 14.11.2019 that due to the cease-fire with the Gaza Strip, traffic between Ashkelon and Beer-Sheva resumed as following: the first train from Ashkelon to Beer-Sheva (No. 651) departed at 15:43; the first train from Beer-Sheva northwards (No. 676) departed at 15:47; the track had been thoroughly inspected prior to resuming traffic to be sure that no damage had been caused by rockets.

(r). AYALON SCHEMES

From a press release of 18.11.2019 by the Transport & Roads' Safety Ministry:

"Adding the 4th track, a complex project, will allow more trains through Tel Aviv, but without a similar solution in Haifa (where there is no space for four tracks) the benefit will be limited.

After prolonged discussion, extending over nearly two decades in fact, the Minister of Transport Mr. Bezalel Smotrich announced on 18.11.2019 that work will be under way soon on the fourth railway track along the Ayalon River. The project is being carried out through the National Roads Company of Israel, which will work alongside operational tracks of Israel Railways. Adding a fourth track is vital for raising the frequency of trains on Israel Railways' busiest section, passing through Tel Aviv, through which trains will shortly run on additional routes, primarily the new A1 line to Jerusalem. When the new track is completed, which is scheduled to happen in 2026, it will become possible to increase the frequency of trains in Tel Aviv from 14 to 26 an hour, and to reduce crowding at stations and on the trains themselves.

The need for an additional track along the Ayalon was raised at the beginning of the previous decade and because of the narrow space left between the congested Ayalon Highway and the drainage channel it was clear that a solution would necessitate improvement to the drainage of the Ayalon River (eventually a drainage tunnel), which once every few years overflows and floods the road and the railway tracks. In 2012 the work of planning and construction of the project was transferred from Ayalon Highways to National Roads Company of Israel, but execution was repeatedly postponed because of disputes over how it should be carried out, chiefly concerning the drainage problem and a still existing objection of the Tel-Aviv municipality. It was eventually decided to divert the Ayalon River to an artificial lake that would be dammed up in Ariel Sharon Park, to make the Ayalon channel narrower, and to construct foundation for the railway track on top of it. The cost of the project, which in 2012 was estimated at NIS 2.5 Billion, has doubled to $1.44 Billion (NIS 5 Billion) and the completion date has been put back to 2026.

More important in the announcement is the fact that, due to works to commence at the beginning of December 2019, one of the three current operational tracks will be closed for six weeks to enable completion of the electrification up to Herzliyya; this will definitely worsen the already congested trains and stations along the Ayalon, particularly but not only at rush hours.

As a response to the protests against closing one track, Minister of Transport Mr. Bezalel Smotrich explained that "If electrification works were to be be carried at nights only, work would last for 18 months; it is true that a closure for six weeks will cause cancellation of trains but during the six weeks work will be performed 24/6 instead of only three hours/night for 18 months".

Israel Railways Ltd. have recently announced that due to track upgrading and sections replacement works, as well as changing the signalling system into ETCS-LEVEL 2, the following sections were closed: between Ramla, Beit-Shemesh and Jerusalem - between 20.11.2019 and 23.11.2019; the Netanya - Herzliya and Ashkelon - Ashdod lines were closed on 23.11.2019.

But there are more line closures to come:

The coast line between Hadera West and Tel-Aviv will be closed in stages between 27.11.2019 and 01.12.2019 as follows:

On Wednesday, 27.11.2019 stating from 22:00:

From the north-trains between Nahariya and Hadera West, as well as from the south between Modi'in and Tel-Aviv-trains will operate on both directions.

The stations of Caesarea/Pardes Hanna, Netanya, Netanya Sapir and Beit-Yehoshua will be closed.

On Thursday, 28.11.2019:

Night trains between Nahariya and Ben-Gurion Airport will operate between Nahariya and Hadera West in both directions.

On the Nahariya - Modi'in line: trains from the north will operate between Nahariya and Hadera West in both directions; trains from the south will operate between Modi'in stations and Tel-Aviv Savidor/Central in both directions.

On the Nahariya - Beer-Sheva Central line: trains from the north will operate between Nahariya and Binyamina in both directions; trains from the south will operate between Beer-Sheva Central and Tel-Aviv Savidor/Central in both directions.

On the Carmiel - Beer-Sheva Central line: trains from the north will operate between Carmiel and Hadera West in both directions; trains from the south will operate between Beer-Sheva Central and Tel-Aviv Savidor/Central in both directions.

On the Binyamina - Rehovot - Ashkelon line: trains will operate between Rehovot, Ashkelon and Herzliya in both directions; on the Beit-Shemesh - Netanya line: trains will operate between Beit-Shemesh and Herzliya in both directions.

On Friday, 29.11.2019:

Night trains between Nahariya and Ben-Gurion Airport will operate between Nahariya and Hadera West in both directions.

On the Nahariya - Tel-Aviv Savidor/Central line, trains will operate between Nahariya and Hadera West in both directions.

On the Nahariya - Modi'in line: trains will operate between Nahariya and Hadera West in both directions.

On the Binyamina - Rehovot - Ashkelon line: trains will operate between Ashkelon and Lod (through Rehovot) in both directions.

On the Nahariya - Beer-Sheva Central line (through Kiryat-Gat): trains will operate between Beer-Sheva Central and Lod in both directions.

On the Ra'anana West - Rishon LeZion Moshe Dayan - Beer-Sheva Central (Western Negev) line: services will be split as follows: trains to/from the south will run between Ra'anana West and Tel-Aviv Savidor/Central; trains to/from the north will run between Tel-Aviv Hahagana and Beer-Sheva Central.

The stations of Lod Ganei-Aviv, Kfar-Habad, Tel-Aviv HaShalom, Modi'in Central and Modi'in Outskirts will be closed.

On Saturday night, 30.11.2019:

On the Nahariya - Modi'in line: trains from the north will operate between Nahariya and Hadera West in both directions; trains from the south will operate between Modi'in stations and Tel-Aviv Savidor/Central in both directions.

On the Nahariya - Beer-Sheva Central line: trains from the north will operate between Nahariya and Hadera West in both directions; trains from the south will operate between Beer-Sheva Central Central and Tel-Aviv Savidor/Central in both directions.

On the Binyamina - Rehovot - Ashkelon line: trains will operate between Rehovot, Ashkelon and Herzliya in both directions.

On the Carmiel - Tel-Aviv Savidor/Central line: trains from the north will operate between Carmiel and Hadera West in both directions.

On Sunday 01.12.2019 (between 00:01 and 04:59) night trains between Nahariya and Ben-Gurion Airport will operate between Nahariya and Hadera West in both directions; traffic will resume on Sunday morning at 05:00.

Alternative bus services will be provided between stations along the closed sections.

Then: From a press release of 02.12.2019 by Israel Railways Ltd.:

"This morning, Monday 02.12.2019 the railways started the work of accelerating the electrification in order to include - in the present stage - the stations of Tel-Aviv HaShalom and Tel-Aviv Savidor/Central stations, after the electrification of the Jerusalem Navon to Tel-Aviv HaHagana stations had been recently completed. Apart from the closed Western Negev line (Beer-Sheva - Rishon LeZion - Ra'anana) all lines are in regular operation and even strengthened and all the stations are open.

A summary for today's rush hour - until 10:00:

Out of 70 buses prepared for shuttles between stations on closed sections, only 47 were operated by 10:00 and served 1,500 passengers between the stations of Yavne West, Tel-Aviv and Bnei-Brak; the railways also operated additional trains on the Lod - Rehovot line.

It seems many buses remained "unemployed" because passengers used much more the regular public transport services."

Aharon adds: "The stations of Rehovot and Ashkelon were overcrowded; some rush-hour trains were at 120% capacity but this problem was quickly overcome by adding calls at more intermediate stations, as well as strengthening of teams and buses.

At Tel-Aviv HaHagana station, which is overcrowded all the time, such overcrowding phenomena appeared this morning but ended quickly with the arrival of connecting trains which brought passengers to stations at which they could change trains.

The railways say that no final conclusions can be taken from the morning of works and therefore every few hours situation assessments are made, corrections made if needed, but generally the event is going according to the plan. The railways mention the passengers' patience. It should be mentioned that despite many interruptions, punctuality is around 92%."

(s). SPECIAL BUSES FOR SOLDIERS.

From a press release of 27.11.2019 by Israel Railways Ltd.:

"The railways are improving the services provided to the IDF (Israeli Defense Army) soldiers by upgrading the special bus services from railway stations to training centre in the Negev (south of Dimona:

Starting from Sunday 01.12.2019 the special bus services will operate each Sunday from the following railway stations directly to the training camps gates: Tel-Aviv Savidor/Central, Herzliya, Beit-Yehoshua, Netanya, Hadera West, Binyamina, Haifa Hof-HaCarmel, Merkazit-HaMifratz, Rosh HaAyin and Kfar Sava.

The bus fleet will be increased from 32 to 55.

The railways have called the soldiers to use these improved services particularly due to the changes in train traffic which will take place from Monday, 02.12.2019 - the start of electrification works between Tel-Aviv HaHagana, Tel-Aviv Hashalom, and Tel-Aviv Savidor/Central stations.

The bus services will operate in the "Fill-up and go" system between 06:30 and 08:30 at 30 minutes intervals or when the bus is full, whichever is the earlier."

(t). THIRD QUARTER 2019 STATISTICS.

From a press release by Israel Railways Ltd.:

"Today, Wednesday 27.11.2019, the railways published their results for the 3rd quarter (Q3) of 2019:

The railways' revenues for Q3 were $186M (NIS 664M) compared with $170M (NIS 608M) over the same period of 2018; up by 9.4%.

The railways finished Q3 with an operational cash loss (EBITDA) of $0.56M (NIS 2M); the results for 2019 9 months achieved an operational cash profit (EBITDA) of $0.28M (NIS 1M).

The total loss for 2019 9 months was $4.2M (NIS 15M), compared with almost $81M (NIS 288M) over the same period of 2018.

The railways are in contact with the State to improve the development and operational contract, in order that it will reflect in the best way the railways' costs and the subsidies they have to receive, so that the business results will be seen more clearly and reliably.

Passenger Sector:

The daily average of passenger carried during Q3 was 268,000 compared with 245,000 on 2018 Q3; up by 9.4%.

The daily average on the crowded days (Sundays and Thursday) on Q3 was 280,000 compared with 256,000 on 2018 Q3; up by 9.4%.

During the 9 months of 2019 the railways carried 52.4M passengers compared with 49.2M during the 9 months of 2018; up by 6.3%.

During 2019 Q3 the railways carried 18.2M passengers compared with 15.7M during 2018 Q3; up by 16%.

Revenues from passenger traffic during 2019 3 were $159.4M (NIS 569M), compared with $144.5M (NIS 516M); up by 10.3%.

Punctuality:

Average punctuality during 2019 Q3 was 92% compared with 90.5% during 2018 Q3; up by 1.6%; This has been achieved mainly thanks to having trains on standby in case of problems or cancelled trains, as well as the introduction of the so called "Urban Cars" with seats along instead of across the car, so there is more space for standees; this has reduced delays in rush hours.

Cargo Sector:

During 2019 Q3 the railways carried 2.2M tons; slightly more than the 2.1M tons during 2018 Q3.

Revenues during 2019 Q3 were $23M (NIS 82M); slightly more than $22.4M (NIS 82M) during 2018 Q3.

The loss from cargo haulage was $5.3M (NIS 19M); slightly more than $5M (NIS 18M) during 2018 Q3.

The reason for the loss is fewer cargo trains due to track works which cause temporary line closures, as well as electrification works; now that the railways have started with works on the Eastern Line, this will carry when completed most of the north/south freight traffic and will increase not only freight volumes to be hauled, but operational flexibilities as well.

Infrastructure Projects:

During 2019 Q3 the railways have made a significant advance as regards massive infrastructure projects:

The A1 is fully electrified between Jerusalem Navon and Tel-Aviv HaHagana stations; regular test runs are carried out daily towards a service start at the end of 2019; works on the southern edge of the Eastern Line (near Lod) have started as have works on the '431' railway line between Modi'in and Rishon LeZion.

It can be seen in the link: https://maya.tase.co.il/company/1641. "

(u). MORE CARRIAGES ARRIVE.

From a press release of 24.11.2019 by Israel Railways Ltd.:

"This week the railways received 4 new Bombardier double-deck cars able to run both with a diesel locomotive and electric; these join the 28 new cars already received during recent months as part of the order for 48 new double-deck cars.

The new cars are unloaded at the port of Haifa and after undergoing a round of tests by the rolling stock engineering department employees are transferred to the railways' maintenance centre at Dimona where they are prepared for service; the cars arrive "naked" and at the site are being fitted with seats, tables, etc.; then they undergo comprehensive acceptance tests before entering service."

(v). NEW SIEMENS UNITS ON TEST IN GERMANY.

From a press release of 08.12.2019 by Israel Railways Ltd.:

"Hand in hand with the progress on the electrification works between Tel-Aviv HaHagana, Tel-Aviv HaShalom, Tel-Aviv Savidor/Central and even further north, a historical event regarding electrification took place recently with the first test run of the first Siemens double-deck (only intermediate cars) emus near the Siemens works at Krefeld, Germany.

The 330 units including driving trailers and intermediate cars (if the full tender including the option is realized; the current order is for 24 trains with the number of cars varied accorder to configuration) will increase the passenger fleet by 37%, and will provide up to 1,700 seats per train of 14 cars; minimum train configuration is 2 driving trailers + 2 intermediate cars; they will operate on the A1 and other lines to be electrified.

The new trains have an output of 6 MW (8,046 HP) and contain advanced technological systems which will provide upgraded service for passengers together with state-of-the-art safety, including: an automatic system which provides the number of passengers aboard train in real time; a smart information system for the passengers linked with the railways' central control and to GPS and showing the train's location on the line and names of stations en-route; and a smart diagnostics system which monitors the train maintenance situation thus enabling disclosing and correcting failures in real time."

The first trains are expected to arrive at Israel towards the end of 2020, and after several months of tests and checks, will enter service during 2021.

The new trains will complement the existing Bombardier double-deck push/pull trains and Bombardier TRAXX electric locomotives."

Livery is blue and white with red doors and grey bogies.

Jeremy Topaz adds thoughtfully: "I hope they used good quality paint which will not deteriorate in 5 years in storage: We had better order covers to protect them, until the electrified lines really are electrified.

Incidentally, I think the hydrogen-powered Coradia iLint would have been a much better and faster solution for getting rid of diesel, and we could easily produce hydrogen from solar energy. But perhaps it came too late to have been chosen. Now we will have to suffer."

(w). CONCRETE SLEEPERS IN PERMANENT-WAY RENEWAL.

(a). From a press release of 28.11.2019 by Israel Railways Ltd.:

"On Wednesday 27.11.2019 at 22:00 the railways started infrastructure works at the stations of Netanya and Beit-

- *Relaying work on the main line at Netanya. Photos courtesy of I.R. (and the aerial shots from Cloud Views) see next page*

Yehoshua, in which line sections including turnouts are being replaced as well as communication and signalling components. It is the first time that turnouts with wooden sleepers are being replaced with concrete sleepers. The railways and the Transport Ministry provided more than 300 special buses as alternative during the line closure. The Ministry phone service received 15,000 phone calls in addition to 4,000 phone calls at the railways' phone service; twice as many as on a normal day."

(b). From a press release of 15.12.2019 by Israel Railways Ltd.:

"As an integral part of the annual maintenance and upgrading of the tracks the railways' track department will perform replacement of sleepers of turnouts from wood to concrete, with the point machines at Beer-Sheva North/University station between midnight of Thursday 19.12.2019 at 00:01 and Friday 20.12.2019 at approximately 16:00 and between Saturday night 21.12.2019 at 17:30 and Sunday morning 22.12.2019 at 05:00.

As a result, the stations of Beer-Sheva Central and Dimona as well as the Beer-Sheva - Dimona line will be closed; all trains to/from Beer-Sheva will start/terminate at Beer-Sheva North/University station; the railways will provide free of charge special bus services between Beer-Sheva Central and Beer-Sheva North/University stations, as well as between Beer-Sheva North/University and Dimona stations (here only per demand), while the Ministry of Defence will provide special bus service for the IDF soldiers from their bases in the south directly to Beer-Sheva North/University station from/to which trains will operate regularly.

Traffic will resume Sunday morning, 22.12.2019 at 05:00."

(x). MORE NIGHT TRAINS THROUGH BEN-GURION.

Good news to the citizens south of the Greater Tel-Aviv Area:

"As a response to the requirements of many citizens of the south, starting on Saturday night 21.12.2019 an upgraded night service; trains will operate directly between Beer-Sheva and Ben-Gurion Airport through the West Negev line, calling at: Ofakim, Netivot, Sderot, Ashkelon, Ashdod Ad-Halom, Yavne East, Rehovot, Lod, Ben-Gurion Airport and terminating at Tel-Aviv HaHagana.

(Photos courtesy of Matan Berkovich & Efrat Parnas-Cohen, IR Spokesman's office.)

The new service will operate at one-hour intervals in each direction through the whole night.

Thanks to the upgraded service, travel time between Beer-Sheva and Ben-Gurion Airport will be cut by 40 minutes from the current 150 minutes caused by the need to change trains at Tel-Aviv Hahagana, to 100 minutes [sic!]; furthermore: for the first time the stations of Rehovot and Lod, characterized by a growing number of passengers will be linked to the upgraded service."

(y). FIRE AND EVACUATION EXERCISE:

From a press release of 11.12.2019 by Israel Railways Ltd.:

"The railways in cooperation with Israeli Police, Star of David First Aid Organization (Red Cross equivalent), fire brigades, rescue forces, and various local authorities, performed today an exercise of preparedness for a multi-casualties event near Afula, on the Valley Line.

The exercise simulated such an event caused by an agricultural vehicle violating regulations and running on the track, thus colliding with a train full of passengers, which - as a result - derails.

The railways used IC3 Flexiliner dmu's which had been withdrawn from service. In fact a brief official video shows two units standing separately on the track and a single car that had been overturned at the base of a low embankment.

The exercise has been led by hundreds of railways employees consisting of drivers, inspectors, stations teams, with participation of all the bodies mentioned, as well as the railways' General Manager Mr. Michael (Micha) Maiksner and other railways' seniors.

The railways' situation room at the railways' management building in the Lod station complex was also operated.

The exercise included also operating the service under emergency condition and

resuming service as soon as possible; this is particularly important on the Valley Line which is single-tracked; during the exercise, the station of Beit-She'an (end of the line) and the line section between Beit-She'an and Afula were closed."

(z). A JUNIOR TICKET INSPECTOR.

From a press release of 05.12.2019 by Israel Railways Ltd.:

"Yesterday passengers on the train from Nahariya to Modi'in rubbed their eyes in amazement when they found that the ticket controller who checked their tickets was in fact a 9-year-old boy named Max with a Portuguese accent.

The young "controller", an avid railway lover, was on his way from his home at Kiryat-Yam to the Ben-Gurion Airport railway station, to escort his mother to her flight to Brazil, from where the family immigrated to Israel 2 years ago.

When the real controller Mr. Alon Tzarfati came to perform a routine check at the carriage the boy stood up and announced to him solemnly that from now on he would assist him in his work, and added excitedly that his big dream is to become a railway ticket controller!

Mr. Tzarfati thought at the beginning that it was either a joke or a prank but after a short inquiry he found that Max was travelling with his mother and sister who allowed him to escort the real controller; after quickly gaining permission from the railways' central control, both the young and the real controller started their work and Mr. Alon Tzarfati was amazed at Max's huge knowledge of various railway systems and the work of crew teams with emphasis on the controller.

Max said: "I love railways more than anything in the world; when I go by rail, I always speak with railway employees, and today Mr. Alon Tzarfati has allowed my dream to become a controller; on the railways of Israel there are a lot of buttons and crew members, while the Brazilian railways are boring; I'm learning a lot about railways and teach my friends at school."

Mr. Tzarfati said: "I was excited at the self-confidence and passion of young Max when he checked tickets professionally; I believe that he will pursue his dream and will join our team when he grows up".

The railway authority were very excited at the story and invited Max to visit the railway museum at Haifa East where he will receive a young controller certificate!"

(A comment has been made, here anonymised, "Max is probably more reliable than most of the staff of IR today, judging by the mistakes they make. As soon as he is old enough to be manager of IR, things will improve!")

(a2). BASKETBALL SPORTS TEAM GOES BY RAIL.

From a press release of 03.12.2019 by Israel Railways Ltd.:

The passengers on a train departing today noon from Tel-Aviv Savidor/Central station were surprised to find out that the full Maccabi Tel-Aviv basketball team - the champions of the Israeli basketball - was travelling with them. They had decided not to endure the roads' bottle necks and to use instead rail service in order to get to their game against a local group called Nahariya Urban, which took place at Ein Sarah stadium.

The team purchased full price tickets and used reserved seats in a regular carriage with ordinary passengers.

A special train for basketball team fans departed from Nahariya at 22:15 in addition to regular trains.

(b2). DONNER UND BLITZEN!

From a press release of 12.12.2019 by Israel Railways Ltd.:

"The railways have completed their preparations towards the forecast stormy weather, while keeping on with electrification works at Tel-Aviv HaShalom and Tel-Aviv HaHagana stations as planned.

Among the preparatory activities done are: pruning of trees to prevent their collapse onto the track, checking the intactness of turnouts, cleaning of ditches and removal of dirt and mud near railway stations and sites, rebuilding of service roads along tracks, checking and preparing of drainage pumps at railway stations and sites, planting trees on slopes to avoid mud slides, preparing engineering mechanical equipment to winter conditions, etc.

The railways also increased the number of patrols of railway track teams just to be on the safe side, and the stations and trains teams are strengthened in order to assist passenger in stormy weather."

(c2). TURNTABLES.

From 'Yediot Aharonot', translated by Sybil Ehrlich: "Maybe it's because Hanukka is nearly here, and maybe it's the wish for nostalgia: Israel Railways is returning to the use of the giant installations for turning locomotives that have reached the end of the line – the turntable, that was used in Mandate times, is intended to improve the efficiency of freight trains.

By Udi Etzion

Sometimes when you want to invent something new it's necessary to open an old book: Israel Railways is resurrecting an ancient technological solution to turn locos that have reached the end of the line and need to continue in the opposite direction: the giant turntable.

Turntables were a common sight [sic!] on the railways in the Land of Israel in Ottoman and Mandate times, including those at the historic Jerusalem station, in Haifa and even in Tzemach. The steam loco was uncoupled from the train, went onto the turntable, and railway workers would push the giant circle until it had completed a 180-degree turn, so the loco was facing in the opposite direction, was reattached to the coaches and hauled them back to the starting point.

Over the years the turntables were abandoned. Passenger trains were equipped with a loco and a power car that enabled driving from either end. Freight train locos were uncoupled from the wagons and went onto an adjacent line, until they returned, ready and facing in the right direction.

But recently IR decided to make the operation of freight trains more efficient, and is rebuilding turntables that will turn the locos within a few minutes, so they can go off in the right direction within a short time. This is instead of a long shunting process that can take an hour, blocking the adjacent tracks that have been closed especially for this purpose, thereby reducing the capacity of freight trains.

The diameter of the new turntables is 24 metres, and they can turn a loco with an average weight of 80 to 100 tons and up to 21.9 metres in length. The cost of the initiative, including building the railway infrastructure, constructing two turntables and installing them, making them operational and maintaining them, is 11 million shekels. These turntables are powered by themselves and do not need human or animal power to move them. The freight division of IR moves around 10 million tons of freight every year, with each train taking off the roads the equivalent 60 to 70 full trailers, reducing traffic congestion and air pollution, and increasing safety for road users."

127:05.

TENDERS.

(i). Israel Railways Ltd. Tender No. 21931: Performing infrastructure works, bridges and supporting walls on line No. 431 section 4.2 between km.21.912 (Anava interchange with Highway 431) and km.23.850 (towards the link with A1): Latest date for submission of proposals: 31.10.2019.

(ii). Tender No. 21950: Manufacturing and supply of Dolomite-type Gravel for Track Ballast layer and for Pathways at railway sites:

The gravel is to be supplied per EN13450 and the following detailed standards:

EN932-3 Tests for general properties of aggregates - Part 3: Procedure and terminology for simplified petrographic description;

EN932-5 Tests for general properties of aggregates - Part 5: Common equipment and calibration

EN933-1 Tests for geometrical properties of aggregates - Part 1: Determination of particle size distribution - Sieving method;

EN933-3 Tests for geometrical properties of aggregates - Part 3: Determination of particle shape - Flakiness index;

EN933-4 Tests for geometrical properties of aggregates - Part 4: Determination of particle shape - Shape index;

EN1097-1 Tests for mechanical and physical properties of aggregates - Part 1: Determination of the resistance to wear (micro-Deval);

EN1097-2 Tests for mechanical and physical properties of aggregates - Part 2: Methods for the determination of resistance to fragmentation;

EN1097-6 Tests for mechanical and physical properties of aggregates - Part 6: Determination of particle density and water absorption;

EN1367-3 Tests for thermal and weathering properties of aggregates - Part 3: Boiling test for "Sonnenbrand basalt";

EN13450 Aggregates for railway ballast;

ASTM C29/29M Standard Test Method for Bulk Density ("Unit Weight") and Voids in Aggregate;

ASTM C127 Standard Test Method for Relative Density (Specific Gravity) and Absorption of Coarse Aggregate;

ASTM D7012 Standard Test Methods for Compressive Strength and Elastic Moduli of Intact Rock Core Specimens under Varying States of Stress and Temperatures;

ASTM D2166 Standard Test Method for Unconfined Compressive Strength of Cohesive Soil;

The contract is for 12 months with optional extensions of up to additional 72 months. Latest date for submission of proposals: 14.11.2019.

(iii). Tender No. 1195: Providing services for International Freight Forwarding and Customs Agency regarding import and export:

The contract is for 12 months with optional extensions of up to additional 48 months. Latest date for submission of proposals: 10.11.2019

(iv). Tender No. 11836: Providing services of damage assessment regarding railway equipment and structures, including communication, mechanical and engineering, and rolling stock:

The contract is for 24 months with optional extensions of up to additional 48 months. Latest date for submission of proposals: 11.11.2019.

(v). Tender No. 11847: Providing services of maintaining Fuel/Lubricant Separators, removal of Waste Material, garbage, and contaminated soil from depots, workshops etc., and burying it in an authorized landfill site:

The contract is for 24 months with optional extensions of up to additional 48 months. Latest date for submission of proposals: 11.11.2019.

(vi). Tender No. 31906: Annual frame agreement for supply of all Stationery needed for the railway offices: The contract is for 24 months with optional extensions of up to additional 48 months. Latest date for submission of proposals: 11.11.2019.

Three important tenders:

(vii). Tender No. 21934 ; Performing Infrastructure and Bridging works at C section of the Eastern Line between line No. 531 (to Kfar-Sava, Hod-HaSharon and Ra'anana) km. 86.163 and Rosh-HaAyin North km. 88.156 (station not included):

Track infrastructure works close to an active line and parallel to it; work will consist on 2 structures:

Structure No. 1 - works between km 86.136 and km 88.850 east of the existing line, and between km 86.163 and km 86.830 west of the existing line.

Structure No. 2 - works between km 86.925 and km 88.850 west of the existing line.

Works include: earthworks, track substructure, extending existing culverts and building a new culvert, supporting walls and concrete channels, drainage channels, embedded communication line including ditches, railway communication concrete channels, electrification infrastructure, SCADA channel, bases for overhead current masts, agricultural service road along the track, and infrastructures for irrigation systems. Time of execution: 21 months. Latest date for submission of proposals: 17.11.2019.

(viii). Tender No. 21956: Performing Infrastructure and Bridging works at C section of the Eastern Line between Rinatya km. 98.450 and Tirat-Yehuda km. 99.300 :

Works to be performed include: structure No.1 - Infrastructure for a double track; Structure No. 2 - railway 80m long double bridge over future road No. 461 including technical rooms structure; Structure No. 3 - a 10m long railway double bridge over an agricultural passage to Rinatya cemetery; earthworks and other preparatory works towards performing track sub-structure; supporting walls and concrete tunnels, acoustic walls and concrete channels, drainage channels, embedded communication line including ditches, railway communication concrete channels, electrification infrastructure, SCADA channel, bases for overhead current masts, agricultural service road along the track, also infrastructures for irrigation systems, landscape development and gardening. Time of execution: 21 months. Latest date for submission of proposals: 18.11.2019.

(ix). Tender No. 21957: Performing Infrastructure and Bridging works at C section of the Eastern Line between Tirat Yehuda – km.100.500 and km.101.000 and B'nei-

Atarot km. 102.450 : Works to be performed include: Structure No. 1- Infrastructure for a double track earthworks and other preparatory works towards performing track sub structure; supporting walls and concrete tunnels, acoustic walls and concrete channels, drainage channels, embedded communication line including ditches, railway communication concrete channels, electrification infrastructure, SCADA channel, bases for overhead current masts, agricultural service road along the track, and infrastructures for irrigation systems, landscape development and gardening. Time of execution: 13 months. Latest date for submission of proposals: 19.11.2019.

(Note: these three tenders mean that the Eastern Line is underway at full tempo!)

- *Various views of the current state of the old P.R. and I.R. main line, about to be transformed as a part of the new Eastern Line. Photos all taken 27.10.2019 by Aharon Gazit. Views show:*
- *a) 127:15 The board saying: The Eastern Line section "D" between Teufa (Aviation) station and Lod station; the building in the distance is part of IAI-Israeli Aerospace Industries near which the Teufa (Aviation) station is to be built.*
- *b) 127.16 shows the Eastern Line from the level crossing near Ben-Gurion Airport eastern entrance; view north towards Rosh HaAyin; the remains of the old Wilhelma (to become Teufa) station are hidden behind the distant trees on the left.*
- *c) 127.17 taken from the same level crossing; the view here is southwards towards Lod.*

(x). Israel Railways Ltd. Tender No. 21760: Providing Calibration and Measuring Services for design and infrastructure works performance: Selecting the winning bidders will be performed in 2 groups of up to 5 bidders A-B and up to 5 bidders C-D. The contract is for 12 months with optional extensions of up to additional 48 weeks. Latest date for submission of proposals: 07.11.2019.

(xi). Israel Railways Ltd. Tender No. 11927: Providing services for printed materials: The railways intend to select 2 winning bidders. The contract is for 12 months with optional extensions of up to additional 48 months. Latest date for submission of proposals: 18.11.2019.

(xii). Israel Railways Ltd. Tender No. 11948. Job: Occupational Doctor: A frame agreement for providing occupational medial services; to be the company's doctor and as a replacement doctor in case the regular doctor is absent. The contract is for 12 months with optional extensions of up to additional 48 months. Latest date for submission of proposals: 07.11.2019.

(xiii). Israel Railways Ltd. Tender No. 11830: Providing industrial engineering consulting services of professional support and follow-up regarding organization and process engineering: The contract is for 24 months with optional extending of up to

additional 36 months. Latest date for submission of proposals: 16.12.2019.

RFP 41905. Request for proposals for Provision of Consulting Services in Various Railway Fields for IR. These to include: Rolling Stock (Development and Maintenance), Infrastructure, Telecommunications, Railway Operations, Computerization, Safety, Security & Environment, Planning & Development.

B. TENDERS AWARDED.

(i). Kirow won the EURO 2.5M Tender No. 41908 for manufacture and supply of turnout-carrying tilting wagon.

(ii). The Israeli company KAL-RAM Ya'akobowich Ltd. won Tender No. 11919 for supply, installation, and maintenance services of rotating gates, emergency gates, and accessories at railway stations and sites.

(iii). The Ness A.T. Ltd. company won Tender No. 11917 for obtaining additional reduction of prices for products and services from Microsoft.

(iv). The Israeli accountants office Steinmetz, Aminakh, and Co. won Tender No. 11946 for providing services for controlling paychecks, wages terms and social rights of the railways' employees.

(v). The Israeli company Girsh & Co. Il. Won Tender No. 31905 for supply and equipping the railways' mobile HQ vehicle.

(vi). The following service providers won Tender No. 11823 for removal of the railways' wastes and garbage: "Chen Hamakom Ltd. won "service basket" No. 1; Y.R.A.V. SHERUTEI NOY 1985 LTD. won "service basket" No.2; SHAY-SHARON waste removal and environmental services Co. Ltd. won "service basket" No. 3.

(vii). Israel Railways Ltd. have announced that the Israeli infrastructure subcontractor Elyakim Ben-Ari won Tender No. 21471 for performing track infrastructure and bridges works on 3 km of line, between km 15+175 and 19+700 (measured from Rishon LeZion HaRishonim) on the '431' line between Rishon LeZion HaRishonim and Anava interchange on the A1.

(viii). Israel Railways Ltd. announced on 17.11.2019 the names of the following tender winners:

The Israeli company KAL-RAM YACOBOWITZ LTD. won Tender No. 11919 for the supply, installation, and maintenance of rotating gates.

(ix). The Israeli company Sig Industries Ltd. won Tender No. 11760 for the supply, building, installation, operation, and maintenance of train washing machines.

(x). On 07.12 announced: The Israeli company AMAN - ORGANIZATION AND MANAGEMENT SCIENCES CONSULTANTS LTD. won Tender No. 81174 for providing services of feeding data for bonus calculations.

(xi). The Israeli company S.P.I. Sanpark Parking Solution 2014 Ltd. won Tender No. 81182 for supply, installation, operation and maintenance of robotic parking for bicycles.

(xii). The Israeli company Ex-pose.co.il-Hidden Customers and Research Ltd. won Tender No. 81127 for control of frontal control and other control services of hidden customers.

(xiii). The Israeli companies: M.B.A. Hazorea Calibration and Measuring Services Ltd., and Israeli Standards Institute won Tender No. 11785 for providing calibration and measuring services.

(xiv). The Israeli companies: The Green Lane Ltd. for the south and Meitar Gardening Ltd. for the north won Tender No. 11778 for supply of gardens maintenance at railway sites.

(xv). The Israeli company AMISHAV SERVICES LTD. won Tender No. 11846 for providing guarding and security services at railway sites.

(xvi). Kirow won the €3,214,190 Tender No. 41808 for design, manufacture and supply of turnout carrier tilting wagons.

(xvii) Bremskerl won the €552,020 Tender No. 41807 for manufacture and supply of interchangeable brake pads for disc brakes.

127:06.

LIGHT RAIL.

A. TEL AVIV.

(i). NTA Tender No. 179/2019: Supply of Pavement elements made of natural stone for Sidewalks and Surface Tracks: The contract is The contract is for 60 months with optional extensions of up to additional 84 months. Latest date for submission of proposals: 31.10.2019.

(ii). NTA Tender No. 095/2019: Providing services of statutory and programs promotion:

The services required are: consulting for statutory planning including professional opinion, performing statutory background checks, promoting statutory plans including concentrated response for objections, presenting NTA in various planning committees, performing coordination both with NTA relevant bodies as well as external bodies like infrastructure companies and local authorities, coordination regarding surrounding plans, preparing background materials and presentations, and any other task required.

NTA intends to select up to three services suppliers. The contract is for 24 months with optional extensions of up to additional 36 months. Latest date for submission of proposals: 14.11.2019.

(iii). A new General Manager for NTA:

5 months after the resignation of NTA former General Manager Mr. Yehuda Bar-On, the NTA directorate may soon recommend the appointment of Mr. Hayim Glick as the new General Manager.

Mr. Hayim Glick, 64, was until several months ago the General Manager of the Rishon LeZion municipality and before that was the General Manager of several important bodies. The appointment has been approved by the State Controller Mr. Matityahu Engelsman. His main task will be to stabilize the NTA senior level backbone, many of these senior managers left recently the company.

(iv). NTA tender No. 421/2019: Providing Insurance Consulting Services:

The contract is for 12 months with optional extensions of up to additional 36 weeks. Latest date for submission of proposals: 07.11.2019.

- *Tel Aviv Red Line tracklaying, view eastward to city centre at Jabotinsky Road in Petach Tikvah, 08.12.2019. (Photos: Aharon Gazit)*

Not the best news: On 11.12.2019 it was reported:

The Ministry of Economy headed by Minister Eli Cohen and the Ministry's Manager of the Industrial Cooperation Authority Mrs. Ziva Eiger have informed the new NTA General Manager Mr. Hayim Glueck that, due to the fact that NTA did not arrange the 25% buyback from the local industry, the $4.32 Billion (NIS 15 Bn tenders for the Green and Purple lines will be put on hold until this is arranged; According to the Ministry, this can be arranged by NTA with 24 hours. This development can endanger the Red Line too which is at a progressive stage.

There was no response as yet from NTA; we will watch and report.

B. JERUSALEM.

(i). POLITICS, POLITICS.....

On 16.11.2019 the following information was received by e-mail:

"The trade unions of CAF, the tram builder based in Zaragoza Spain, have asked their management to cancel the order for 114 new trams worth €1.8 billion intended for Jerusalem. They have stated that they do not want the trams they are building to violate human rights.

If CAF cancelled it could cost them millions of euros in compensation."

One does not know where to start responding to this, except to say that CRCC will be rubbing their hands....

(ii). FIRST FATAL ACCIDENT.

The fatality-free history of the LRV came to a sad end when a 19-year old girl suffered an epileptic fit and fell between two coupled trams at Jerusalem Navon Station/Bus Station stop at 00.20 on 04.12.2019. It is believed that she had suddenly lost consciousness.

It took rescue workers including Magen David Adom and Zaka several hours to eventually remove her body, with the aid of LRV jacks.

(Photo next page.....)

- *The Red Line depot at Petach Tikva under construction and the first train sets. (Photo Gilad Furst)*

- *Rescue teams at the site of the accident.*

127:07.

OTHER MIDDLE EAST RAILWAYS.

A. TURKEY.

(i). NEW SCHEDULES.

From 'Today's Railways Europe' No. 285 p.46: "Turkish Railways has once again amended its high-speed schedules, this time from 16 July. The service level remains the same although many trains are significantly retimed. Halkali still retains two daily through services to and from Ankara, but the previous 11.55 departure from Halkali has been replaced by an earlier one at 08.30 which provides an excellent connection with the overnight service from Sofia. In the opposite direction the 06.00 departure no longer extends into European Turkey, but a new 15.00 departure runs through the Marmaray Tunnel, arriving in Halkali at 20.12 thus providing a good connection with the 21.40 overnight service to Sofia. Timings of the connecting bus services to and from Bursa, Alanya and Antalya have also been revised.

Another significant and welcome change is the return of the overnight train between Istanbul and Ankara. The service, which conveys sleeping cars and seats, will actually start/end its journey at Halkali."

(ii). TURKEY TO DEVELOP NATIONAL RAIL RESEARCH INSTITUTE.

From 'R.G.I.' 26.09.2019: "The Ministry for Transport & Infrastructure is to establish an Institute of Rail Transport Technology, which will be operated jointly by infrastructure manager TCDD and the Tübitak scientific research council, which is part of the ministry.

In the short term, the institute will be located at Gebze near Istanbul, the Asian terminus of the Marmaray suburban rail corridor. It will share premises already operated by Tübitak and have a staff of around 100. Current plans envisage the institute eventually moving to a site in Ankara being developed by TCDD, when the staff would be increased to 500.

The research programme will be run by Tübitak, which will employ the staff. A management board will be formed of representatives of both Tübitak and TCDD. The centre will undertake both academic research and commercial work.

Speaking at the launch of the research programme on September 21, Minister for Transport Cahit Turhan said that over the past 16 years the government had 'placed great importance on the development of the Turkish rail sector and a domestic railway industry'. The latest national development plan foresees investment of €70bn in the rail sector over the next 15 years both in infrastructure spending and in domestic supply chain development."

(iii). TURKEY-IRAN NIGHT TRAIN.

In 'Lok Magazin' 10/29 p.35. "On 7th. August the rail link between Ankara and Teheran was resumed once more. Initially a train pair should cover the line between the Turkish and Iranian capitals once per week, but if demand rises more are planned. The travel time is 56 hours and includes the ferry passage across Lake Van. Iran and Turkey have signed a new agreement concerning freight traffic on this trans-border route."

(iv). FREIGHT THROUGH THE MARMARAY TUNNEL

From 'R.G.I. 7.11.2019: "A freight service passed through the Marmaray tunnel under the Bosporus between Asia and Europe in Istanbul at 03.30 on the morning of November 7, carrying 42 TEU of

electronic goods in transit from China to the Czech Republic.

The service organised by China Railway Express had taken 12 days to travel from Xi'an, through Kazakhstan, across the Caspian Sea to Azerbaijan and then to Turkey via the Baku – Tbilisi – Kars line which was inaugurated in 2017. The route continues to the Bulgarian border at Kapikule, and on to Praha. The Turkish partner for the service is Pasifik Eurasia Lojistik.

Speaking at a ceremony to mark the arrival of the service in Ankara on November 6, Turkish transport minister Cahit Turhan praised China's Belt & Road Initiative, which he said had confirmed Turkey as the central link in the 'middle corridor' of the 'iron silk road' between Beijing and Europe. This offers transit times from China of 12 days to Turkey, and 18 days to western Europe.

The Marmaray tunnel had opened for local passenger trains in October 2013. The full 76km suburban corridor across Istanbul was launched on March 12 this year, offering the possibility of running inter-city services between the two continents. Turkish officials have always insisted that the tunnel would be used by night time freight trains, despite reports that the overnight period would be required for line and tunnel maintenance work."

(v). SAKARYA TRAM.

From 'R.G.I.', 18.10.2019: : "Sakarya municipality in Turkey (on the Black Sea coast) plans to build a 2 km heritage-style tram line."

(vi). ANTALYA TRAM: THIRD LINE OPENS.

In 'Today's Railways Europe' 286 p.15: "On 11 August a third tram line opened in Antalya. The 12km. Line T3 runs from Atatürk Lisesi to Varsak Mezarligi, with 19 stations. A three-station extension from Atatürk Lisesi to Otogar is still under construction. At Otogar an underground interchange will be provided with the existing east-west Antray T1 tram line.

The T3 project has cost TRY 700 million (€108.7M). Line T3 will later be extended southwards from Otogar to Müze, currently the western terminus of the heritage tram line which will be upgraded to modern standards and double tracked. When all this is finished, Line T3 will run to Zerdalilik in the city centre, creating a 23km route serving 39 stops.

The Antalya fleet consists of 14 CAF 'Urbos' 5-section 100% low-floor trams and 18 'Eurotem' trams produced by Tüvasas and Hyundai Rotem. The CAF Urbos trams were supplied for the opening of the Antray T1 line in 2009."

(vii). SAMSUN TRAM EXTENSION.

Source as above: "The single tram line in Samsun was extended by 6km north-west from OMÜ Rektörlük / Bati Garaji to Yurtlar on 5 July. Seven stops were built on the extension. The line is now 36km long with 42 stops. Services are operated by 16 AnsaldoBreda 'Sirio' tram. These are 32m long and were delivered for the opening of the tramway in October 2010. In early 2014 they were joined by five CNR Tangshan 42m trams. Finally, in November 2016 Samsun received eight 31.8m long Durmazlar trams branded 'Durmaray Panorama'."

(viii). TURKISH PRIVATE OPERATOR BUYS MORE DIESELS.

In 'Today's Railways Europe' 286 p.9: "Wabtec (formerly GE Transportation) has delivered five 'Powerhaul' diesel locos to Turkish open access freight operator Körfez Ulastirma, the rail freight subsidiary of Turkish petrochemical group Tüpras. The locos, which were assembled by Wabtec's Turkish partner Tülomsas in Eskisehir, are numbered DE 36501-505. They entered service this summer and also carry the numbers KU DE 0001-05. Körfez Ulastirma started operations in December 2017 and has a fleet of 439 wagons and had been leasing five similar DE 36000 locos from TCDD which has 20 of this class.

In August Stadler announced that Körfez Ulasturma would buy seven 'EuroDual' Co-Co electro-diesel locos. The locos will be built in Valencia and delivered in 2021. Stadler will maintain them in Turkey. Körfez Ulastirma will use the locos to operate 2000-tonne oil trains. Each loco is a 6150kW electric, operating from 25kV AC, and a 2800kW diesel equipped with a Caterpillar engine. Stadler says it has now sold 74 of its new 'EuroDual' six-axle locos."

(ix). MODERNISATION OF HALKALI – KAPIKULE.

In 'Today's Railways Europe' 287, p.53. "Modernisation work on the 233km Halkali – Kapikule line began on 25 September in a ceremony at Karaagac station, which was closed in 1971 when a new alignment in the Edirne area was opened. The project consists of three sections: Halkali – Ispartakule, Ispartakule - Cerkezköy and Cerkezköy – Kapikule and will involve doubling of the complete line and realignment of several sections. ETCS Level 1 will also be installed on the line which will be rebuilt for 200km/h. Work will include construction of six viaducts, nine tunnels (including seven cut-and-cover) and 24 bridges. Seven stations will be also completely modernised.

The main contractor of the modernisation works on the Cerkezköy – Kapikule (155km) is a consortium of Kolin Insaat and Salini; the value of the project is €524 million of which €275 million in EU co-financing. Doubling will be completed in 2023."

(x). BOSANSKAYA SUPPLIES TRAMS TO IASI.

From 'Metro Report Intl.' 13.11.2019: "Bozankaya has been selected to supply 16 trams to operate on the metre-gauge network in Ia?i, Romania, the Turkish supplier announced on November 4. The 34-month contract worth €30m envisages the first tram would be delivered in mid-2021. The five-section low-floor vehicles will be 30 m long with capacity for 270 passengers and a maximum speed of 70 km/h.

(Earlier this year Bozankaya was awarded a contract to supply up to 40 trams to Timi?oara, (announced on July 9. The firm order for 16 trams is worth €33m excluding VAT, which would rise to €80m if all options were to be exercised) and it was sole bidder to supply 100 low-floor battery trolleybuses to Bucure?ti.)"

(xi). NEW TURKISH RAIL PLAN FOR 2020.

Quite exciting news from 'R.G.I.' 12.11.2019:

"Tenders for the design of new lines as well as the rehabilitation, electrification and resignalling of existing routes, proposals for rail-served logistics centres and the further development of the domestic supply chain are included in a 2020 strategic programme published by the president's office on November 4.

Planned construction and rehabilitation projects include:

Completing electrification of 1 492 km of existing line and resignalling of 804 km of route;

Beginning modernisation of the Kars – Divri?i – Çetinkaya – Malatya –Gaziantep route;

Starting construction of a planned Aliaga – Çandarli – Bergama line;

Signalling works on the Konya – Karaman line;

Modernisation of the Adana – Mersin route, including four-tracking and construction of a branch to Çukurova airport;

Completion of rail-served logistics centres at Mersin (Yenice), Konya (Kayacik) and Kars;

Tendering and starting work on a Osmaneli – Yenisehir – Bursa freight line.

Design work is to be completed and tenders called for:

Modernisation of the Selçuk – Ortaklar and Ortaklar – Aydin – Denizli lines to carry freight traffic;

The new main line to link Istanbul's two airports via the third Bosporus bridge;

Design work will be completed for:

Upgrading the line linking Izmir's Alsancak port with Kemalpa?a and Torbali;

A new Gaziantep – Sanliurfa – Mardin line;

Modernising the Eski?ehir – Kutahya – Afyon – Burdur – Isparta line and constructing an extension to the Mediterranean port of Antalya;

A Kirikkale – Çorum – Samsun line;

A Bandirma – Bursa line.

Work will be started to design a link between a planned new line to Bergama and the existing line at Soma, and for a second track between Malatya, Narli and Akçagöze. Other plans include the opening of a national rail research and testing facility at Eski?ehir University. Testing and certification of control systems, bogies, and underfloor equipment for the national EMU development project is to be completed, with testing and certification of a prototype unit planned ahead of the starting of series production. Development of a national shunting locomotive will continue."

(xii). KONYA METRO - CHINESE -TURKISH CONSORTIUM.

From 'Metro Report Intl.' 14.11.2019: "A consortium of China National Machinery, Ta?yap? and AYGM has been awarded a €1·2bn contract to build the first metro line in Konya.

Due to be completed by the end of 2023, the 21·1 km route would serve 22 stations between Necmettin Erbakan University in the west and Meram Belediyesi via the new high speed railway station and Fetih Caddesi. The end-to-end journey time would be 35 min.

A second line would be created by converting the existing north-south tram Route 1 to metro standards, including moving the Selçuk University – Alaaddin route underground.

The project is being funded by the Ministry of Transport, Maritime Affairs & Communications. Plans for a metro were originally published in 2015, and a feasibility study started in November 2016. Konya Metropolitan Municipality finalised plans in 2017."

(xiii). DURMAZLAR TRAMS FOR BUCHAREST?

In 'Today's Railways Europe' 288 p.16: "Turkish companies could continue their success in supplying trams to the expanding Romanian market - Bucuresti city council has announced that Durmazlar has been chosen as preferred bidder to supply 100 low-floor trams valued at €178.8 million, each with capacity of 220 passenger, with 56 seated. The units would have modern facilities such as air conditioning, audio and visual displays, wi-fi and acccess for reduced mobility. Durmazlar has sold trams in Turkey and to the city of Olsztyn in Poland. However, the second bidder - Astra Vagoane Calatori/CRRC Sifang consortium is challenging the decision which could be delayed, probably until December."

(xiv) NEW VELARO SETS FOR TURKEY:

From 'R.G.I.' 22.11.2019: "Siemens has unveiled the first of 12 Velaro high speed trainsets ordered by Turkish national operator TCDD Ta??mac?l?k at the supplier's Düsseldorf plant on November 13. Due to arrive in Ankara by the end of November, the train is expected to enter passenger service in February following testing.

Once deliveries from the April 2018 contract are completed, TCDD will have 19 Velaros in its fleet. Ridership is expected to increase from the current 22,000 passengers a day to 30,000 next year and 40,000 in 2021, according to TCDD General Manager Kamuran Yaz?c?.

The extra trainsets are to be used on the high speed lines currently under construction from Ankara to Sivas and Izmir."

B. IRAN.

(i). TEHRAN METRO.

From 'R.G.I.' 18.10.2019: "Tehran Metro Line 6 has been extended by 1·3 km from Shohada Square to Emam Hossein."

(ii). DANISH STOCK. (Old news)

In 1982 the Danish State Railways DSB ordered two prototype APO-Lyntog sets, a heavy five-car set with a driving trailer at each end which could be propelled onto and hauled from train ferries between the various parts of Denmark. From 1982 these were put into use between Kobenhaven and Aarhus and in 1991 also renovated and used for bathing trains between Kobenhavn and Kalundborg but in 1995 both were withdrawn and sold to Iran. (Taken from an article on Danish IC3's in 'Lok Magazin' by Garrelt Riepelmeier, 12/2019 p.76).

(iii). MIANEH – BOSTANABAD.

"Revenue services have started operating on the first section of RAI's cut-off which is intended to shorten the Tehran – Tabriz route serving the northwest of the country.

The 132 km southern section of the new line, between Mianeh and Bostanabad, was formally inaugurated by President Hassan Rouhani during a visit to the East Azerbaijan province on November 27 Under construction since 2000, at an estimated cost of 5 Trillion Rials, the line has been built by the State Company for Construction & Development of Transport Infrastructure. It diverges from the existing 736km Tehran – Tabriz route at Mianeh, 436km from the capital, and runs through Turkman Chay and Tekmeh Dash. The remaining 71km from Bostanabad to Tabriz via Basmenj is expected to open by March 2020.

Full map of Iranian railways in the Railway Gazette Knowledge Hub.

According to RAI Chief Executive Saeed Rasouli, the railway initially expects to operate three trains a week each way between Bostanabad and the capital.

Completion of the cut-off will shorten the Tehran – Tabriz route by around 100km compared to existing line through Maragheh. RAI expects to reduce the current 12h journey time between the two cities around by 5h 30min. The new route is forecast to carry 2 million passengers and 7 million tonnes of freight over the next two decades."

C. EGYPT.

(i). METRO MAINTENANCE. Chen Melling has sent a reference to a Socofer DR200 Track Motor Car equipped with a crane and a flat car wagon, delivered recently to the Cairo Metro for maintenance purposes.

(ii) WABTEC LOCOS FOR EGYPT.

From 'R.G.I.' 06.12.2019: "Wabtec has delivered 10 Evolution Series diesel locomotives to Egyptian National Railways and the Ministry of Transportation.

In June 2017 the Ministry of Transportation and Egyptian National Railways signed a US$575M letter of intent for the supply of 100 mixed-traffic locomotives from GE, which subsequently merged with Wabtec. The ES30ACi Light Evolution Series dual-cab locos have 12-cylinder, 3 200 hp engines.

Wabtec is providing 15 years of support and spare parts for the state railway's existing and future GE locomotive fleets, and will modernise some of the older vehicles. Training of more than 275 staff is also included in the agreement, and a team of Wabtec engineers has been installed in ENR's workshops."

D. MOROCCO.

Morocco is not a country we normally cover but an item in 'The Times' for 16.11. 2018 (! - a year ago) recently sent to us notes that the new 120km high-speed rail line along the coast from Tangier to Casablanca, opened on 15.11.2018 some three years behind schedule, built at a cost of 1.9 Bn. Pounds, was financed by France, Saudi Arabia, Kuwait and the U.A.E. 12 double-deck TGV sets have been ordered from Alstom and when the line is completed – 220km – the 'Al Boraq' trains will cut journey times from five hours to two.

An item in 'R.G.I.' 21.11.2019 adds: "Speaking at a press conference on November 20, Moroccan National Railways Director General Mohamed Rabie Khlie told media representatives that the high speed 'Al Boraq' service launched by King Mohamed VI and French President Emmanuel Macron on November 15 2018 had carried 2·5 million passengers in the nine months from January to October. The number of trips is expected to reach 3 million in the first full calendar year in December, equivalent to about 8,250 passengers a day.

'Al Boraq' services operate up to 28 return workings a day over the 363km between Tanger, Kénitra and Casablanca, reaching a maximum speed of 320km/h. The fleet of 12 TGV 2N2 double-deck trainsets supplied by Alstom had operated around 7,000 trips, achieving punctuality of about 97%. Khlie had indicated earlier that traffic on the Tanger – Casablanca corridor had increased by around 35%, journey time having been cut from 4 h 45 min to 2 h 10 min. Passenger satisfaction on Al Boraq trains was recorded at 92%, thanks in part to a wide range of fares, comfortable interiors with guaranteed seats, plus high standards of service on board and at stations. ONCF said that the performance of Al Boraq services was 'very satisfactory', achieving an operating margin 'ranking among high international benchmarks, ensuring that all operating costs were covered'. The high speed service had also proved to be a catalyst generating socio-economic activity, 'symbolising a new era of mobility'."

E. QATAR.

METRO GOLD LINE. From 'Metro Report Intl.' 25.11.2019: "The Doha Metro Gold Line opened to passengers on November 21, a little over six months after the Red Line became the first operational metro line in the city.

The 14 km Gold Line serves 11 stations between Ras Bu Abboud in the east and Al Aziziyah in the west, including Msheireb, where interchange is provided with the Red Line. Services are operated by Qatar Rail and run from 06.00 and 23.00 (14.00 to 23.00 on Fridays) at 5 min headways.

Design and construction was undertaken by a joint venture led by Aktor and including Larsen &

Toubro, Yap? Merkezi, STF and Al Jaber Engineering. Mitsubishi Corp and KinkiSharyo have supplied a fleet of three-car trainsets that are stabled in an underground depot."

And the GREEN LINE: 11.12.2019: "QATAR: The first phase of the driverless metro network in Doha has been completed, with the opening of the third line and two extensions of the first route on December 10.

The 22 km Green Line runs from Al Riffa in the west to Al Mansoura in the city centre, serving 11 stations. The line is mostly underground, with 5·4 km at the western end on an elevated alignment.

Two extensions of the Red Line opened on the same day. A one-station branch runs from Oqba Ibn Nafie to Hamad International Airport Terminal 1, and a northern extension takes the line from Al Qassar to Lusail. This includes a station at Legtaifiya, due to open next year, that will provide interchange with the Lusail tram network.

The first section of the Red Line opened on May 8. The north-south route is now 40 km long, with 23·4 km underground.

The Red and Green lines connect at Msheireb, where interchange is also provided with the Gold Line, which opened last month. That 14 km east-west route serves 11 stations."

F. AFGHANISTAN.

In 'Op de Rails' 2019/4 p.167 (thanks to Marc Stegeman, translation from Dutch by the Editor):

"In the 1920's the Afghan King Amanullah purchased three steam locos from Henschel in Kassel and let them work a 7-kilometre 762mm-gauge line from the capital Kabul to Darulaman. The line gave up the ghost some time in the 1940's but the locomotives may still be admired in the National Museum of Afghanistan. Apart from this 'Kabul Tramway' Afghanistan remained one of the few large countries (1.2 times the size of France) that never saw a railway line laid. But now things have changed.

The first rails laid on Afghan territory were built by the Soviets in the 1960's, from what is now the Turkmenistan border post of Gushgy (Kushka) for a few kilometres over the border to the Afghan Towraghondi. At the beginning of the 1980's the Soviets laid a second line during the Afghanistan War, this time from what is now the Uzbek Ternez over the 'Friendship Bridge' to Hayratan some seven kilometres further. Each of these lines naturally had the Russian 1524mm gauge.

There things stayed for thirty years. In August 2011 the line to Hayratan was extended by 75km to the air base at the large Northern Afghan town of Mazar-i-Sharif. The line was operated by the Uzbekistan National Railways UTY, only for freight traffic. In November 2016 a second rail link was opened to Turkmenistan. This line branches off the line that runs parallel to the northern Afghan border and the Amurdaya river near Atamyrat-Kerkl. It reaches the border at Ymamnazar and currently ends at the Afghan freight terminal Aqina, only three kilometres from the border. The first aim of this line, called the 'Lapis Lazuli' is the somehat larger settlement of Andikhoy 36km further, and then to link through Northern Afghanistan with the line in Mazar-i-Shaif and thus with the railway network of Tadjikistan. Lapis Lazuli is the azure blue colour which has been won in Afghanistan since ancient times.

On 21st. February an important new step was taken, this time on Iranian initiative. Iran has built a line from Khaf (near Torbat-e-Heydariyeh on the line Mashhad – Bafq – Yazd) via Sangan to the Afghan border at Shamtiq. From here the standard-gauge line continues for 62km to the Afghan city of Ghryan. On 21st. February a beginning was also made on what is, for now, the final stage - a line to the larger Western-Afghan city of Herat. This will also be the first railway in Afghanistan to carry passenger traffic as well.

All these new lines have as their aim to give Afghanistan and the former Soviet republics in Central Asia access to the sea and to encourage international trade."

G. SAUDI ARABIA.

HARAMAIN TRAINS TO JEDDAH AIRPORT.

From 'R.G.I.' 11.12.2019 "High speed services to and from Jeddah airport were launched on December 11. The six-track station serving Terminal 1 at King Abdulaziz International Airport is linked to the 450km Haramain High Speed Railway between Makkah and Madinah by a 6·6km branch. This includes a 4km tunnel and is laid with slab track; flying junctions in both directions allow direct services to and from both Makkah and Madinah.

Occupying 12,000 sq.m., the station at KAIA has two lounges and capacity to handle over 3,200 passengers an hour. The adjacent airport terminal was formally opened on September 24 and is able to handle 70 aircraft simultaneously. Haramain High Speed Railway is currently running five trains a day in each direction on Wednesdays to Sundays from KAIA and Madinah stations with all trains calling at King Abdullah Economic City.

The line has been equipped with Spanish technology by the Al Shoula Consortium embracing twelve Spanish and two Saudi Arabian companies. The consortium said that 'parallel to the restart of commercial activity from KAIA station, the ERTMS Level 2 signalling and safety system will be incorporated into the operation in the next few days, allowing trains to reach the maximum commercial speed of 300 km/h'.

Haramain services were interrupted on September 29 after a fire at Jeddah station caused serious damage, and a temporary 1·5km bypass has been built to allow end-to-end running to be restored.

'We are grateful for the effort and willingness of the companies that are part of the Consortium to restore commercial services after the fire at Jeddah station,' said consortium Chairman Jorge Segrelles. 'From the beginning, the desire of the Consortium's shareholder companies was to support the client in the search for solutions that would allow us to return to normal as quickly as possible. This was our commitment and the evidence of this has been their contribution to building the 1·5km detour at Jeddah station, an essential component to resume the activity and again provide the service demanded by our customers, among whom there are thousands of pilgrims who visit the cities of Makkah and Madinah every day.'"

[Note: Since the King formally inaugurated the service at Jeddah on 25th. September, it is interesting that this was the first reference to a major fire requiring construction of a new by-pass line, occurring only four days later! Ed. See 'Harakevet' 126:F:(vi). Also in R.G.I. on 25th. September had appeared:

"SAUDI ARABIA: Saudi Arabia became the latest country to launch high speed services on September 25, when the Haramain High Speed Rail line linking Makkah, Jeddah and Madinah was formally inaugurated by King Salman bin Abdulaziz Al Saud. The ceremony in Jeddah was also attended by the three regional governors and Transport Minister Dr Nabil bin Mohammed Al-Amoudi.

The formal opening of the line had been timed to coincide with the country's 88th National Day on September 23. Speaking at the inauguration, the King, who is Custodian of the Two Holy Mosques, said 'we have put our trust in Allah, and we ask Allah to grant success.' Following the ceremony, he boarded one of the Talgo-built trainsets for a trip to Madinah.

The 453 km line with five stations has been developed in line with the country's 2030 national plan. Designed for a maximum speed of 320 km/h, it is intended to carry up to 60 million passengers/year to and from the holy cities. 'The journey between Makkah and Madinah has become closer and easier than ever before', said Al-Amoudi.

Civil works have been undertaken by Chinese and Saudi Arabian contractors, with railway systems supplied by the Spanish-led Al-Shoula consortium under a €6·7bn concession. This included the supply of 36 Talgo 350 trainsets as well as track and electrification; operations are being managed by RENFE and ADIF for the first 12 years.

Revenue services are due to begin on October 1, following the publication of fares on September 18. Operations are expected to start with a few trains each day, limited to 200 km/h, but would gradually ramp up in both speed and frequency, with a full service of 300 km/h trains anticipated by September 2019."

H. SYRIA.

NEW RUSSIAN RAILWAY ACROSS SYRIA TO IRAQ?

From 'Times of Israel' 17.12.2019, from TOI staff and 'Agencies': "Russia is considering a slew of major commercial projects in Syria, a senior Russian official said Tuesday. Some of them could potentially increase Iran's influence in the country. Deputy Prime Minister Yuri Borisov said after meeting with Syrian President Bashar Assad in Damascus that Russia will spend $500 million to modernize Syria's commercial port of Tartus.

Borisov said in remarks carried by Russian news agencies that the four-year *(Continued on page 24)*

127:08.

NOTES AND COMMENTS.

(i). JAFFA PORT WORKS.

Sybil came across a range of images of Jaffa Port, one of which (from 1923) shows plans for a new breakwater and one of which shows this under construction in 1928, employing what looks like standard gauge track, a steam crane and some wagons. (Not necessarily a locomotive, this would have not have been necessary if the crane was self-propelling and could also be coupled to a wagon or two.)

The link:

https://howlingpixel.com/i-he/%D7%A0%D7%9E%D7%9C_%D7%99%D7%A4%D7%95

will take anyone interested to the rest.

Chen Melling found two images from the Matson Collection in which we see seven four-wheeled low-sided wagons in use on the standard gauge and a temporary pier thrown out into the waves with a 60cm. gauge motor loco (NOT one of the WDLR type armoured Simplexes) and some tubs, for bringing material out to be dumped into the water to build up the structure. Remarkably somehow they have put a steam crane (standard gauge?) onto the far end.

Chen Melling was able to write in 'Industrial Railway Record' No. 231, Sept. 2017 an article which drew together and corrected various previous articles and correspondence by Paul Cotterell and others on both the Haifa Harbour works and Jaffa harbour works. From this:

"In file 118/45/1 is correspondence relating to the disposal of plant from the Jaffa Port Improvement. A listed dated March 1936 includes the following locomotives and cranes:

- Two Hunslet 15in inside-cylinder standard-gauge six-wheel locomotives

- *Works at Jaffa Port, from the Matson Collection, courtesy of Chen Melling at Israel Railway Museum.*

- *Jaffa port standard gauge tracks*

- One Simplex 60cm gauge petrol locomotive
- One Cowans & Sheldon 12 ton travelling crane
- One Stothert & Pitt 8 ton travelling crane
- Two Thomas Smith (Rodley) 5 ton travelling cranes
- One Butters Bros. 3 ton hand derrick crane.

The three smaller cranes were presumably of the same types as those listed elsewhere at Athlit Quarry and perhaps came from there. The same can be said of the standard gauge locomotives. Chris Capewell informs that the 8 ton crane was employed on wharf wall blocksetting and was one of two in use originally, whereas the 12 ton crane of 1931 vintage, which was a kind of travelling derrick, was for lee breakwater blocksetting. Also in the list were 2,000 standard gauge sleepers and some 250 tons of 75lb rails and fittings, including six 1:8 frogs. (for points)

Ensuing PR correspondence reveals that the two 60cm gauge locomotives had seen 18 months of service and might be of use to PR, along with some other items of plant... It was suggested that one of the small locomotives could be purchased in place of the new locomotive requested by the Lydda District Engineer for work in Sinai. By April 1936 the items had been inspected by the District Engineer and he had found that only the petrol-engined locomotives (the Simplex) was worth buying for use on the deviation works in the Sinai.

The matter was raised again by PR Chief Engineer (file 118/83/37-38, titled 'Materials required for Special Works 1937-38') wherein there is a letter dated 3rd. November 1937 in which Rendel, Palmer & Tritton give PR details of the Decauville equipment and track material for sale from the Harbour Development Works Department. This included a 30hp model DX-1 0-4-0 Kerrr, Stuart equipped with a 2-speed gearbox and weighing 5 tons 15cwt, originally costing £P730. The locomotive had however suffered from a cracked cylinder head casting but it had been repaired by this time. There was also a Simplex, described as a 'Motor Rail & Tramcar Co., 0-4-0, wt. 2½ ton, 20hp, 2-speed gear' and originally costing £P360. Both were offered at a quarter of their original purchase price, although it is mentioned that the Simplex would only be available at the end of November.

PR Chief Engineer again asked the Lydda District Engineer whether any of the locomotives, in particular the Simplex, might be suitable for him in lieu of the new one he required for the Kantara - Rafa Railway Renewal project in the Sinai, but the District Engineer replied that "Practically all of the material disposed by the Harbour Works Department is worn out and has been run to death." He further suggested that the engine "... would go out of order as soon as it is put to work" and that it would require to be entirely rebuilt. Accordingly the Chief Engineer informed the PR General Manager that purchasing a new locomotive from the UK was the best option...."

To work with earlier material from Paul - this was a subject which fascinated him over a lengthy period:

'IRR' 148. p.302. (An article discussing the wartime extension from Jaffa station that became known as 'Little Terezina' and also the lines used at the later Tel Aviv Port):

(Continued from page 22) modernization program envisages an overhaul of the old port in Tartus and the construction of a new one. He added that there is also a plan to build a railway across Syria and Iraq that will link Syria's Mediterranean coast with the Persian Gulf.....

Both the railway to the Persian Gulf and the overhaul of the port of Tartus have the potential to make it easier for Iran to supply terror groups on Israel's northern border with advanced arms that could be used against it in future confrontations. Russia has a Soviet-era naval base in Tartus, the only such facility outside the former Soviet Union."

"Although Jaffa Harbour was not to be extensively developed, a small port with a breakwater was built. Work on this began in June 1934, reportedly under the supervision of the consulting engineers Rendel, Palmer & Tritton who had recently been responsible for the building of Haifa Harbour. An isolated railway, evidently of standard gauge, was laid southwards from Jaffa harbour along the coastline for a distance of more than five kilometres. This line carried the sand and gravel needed to build concrete blocks for the breakwater and quays.

An indistinct photograph..... shows several travelling steam cranes, probably ex-Haifa harbour works, and what might be a Sentinel steam locomotive. PR had been 'persuaded' into buying a Sentinel 4-wheel shunter (7233/1928) PR No. 33, for which there was no real need and it did very little work on PR. An official outline diagram ... has a hand-written note 'This loco to be hired from PR at a rate to be determined later. CSC 21/11/38' and this may lend credence to my suggestion that Sentinel 7233 had previously been employed at Jaffa harbour. The standard gauge line would have become redundant no later than March 1937 when construction of the port was completed.

A light railway was laid within the port area and this continued in use after completion of the construction work. 'Modern Transport' magazine for 11th. January 1936 made note of the port improvements. The light railway was described as being of 2ft.0in. gauge and terminating within reach of a new 7 ton crane on the south quay. It is possible that track from the World War I harbour extension line was utilised for this light railway, in which case the gauge would have been 60cm.

....'The Naval Intelligence Division Handbook' published in December 1943 -.. has an outline description of the facilities available and, most importantly a map showing the layout. There was a basin for lighters, larger vessels having to anchor in the open roadstead about a mile offshore, sometimes for several days during winter storms. Covered storage of 241,000 sq.ft. was provided ashore, with an additional area of 75,000 sq.ft. of open storage. Five derrick cranes from 3-7 tons capacity operated on the quay, but general cargo was discharged into lighters by ships' tackle and man-handled ashore at the quayside. 'Goods are distributed from the south quay to the uncovered storage area by decauville railway' noted the Handbook, 'but there is no standard gauge connection.'"

In 'IRR' No. 154, Sept. 1998, p.41: "The recent discovery of a Hebrew-language booklet entitled 'Jaffa Harbour' allows amendments to be made to my article in 'Record' 148. This small publication gives statistics of imports and exports through Jaffa Harbour between the years 1952-1961, so it is obvious that the port was in commercial use for longer than I had surmised. Included... is a panoramic view of the harbour in 1934, with reclamation work for the small port already well advanced. The isolated standard gauge line can be seen leaving the coastal road from the south and crossing the newly reclaimed area. Also on site were two or three 60cm/2ft. gauge lines; one with a train of side-tipping wagons headed by a diesel locomotive.....From a distance this looks like a Kerr Stuart type DX-1 4wheel locomotive, and it will be recalled from 'Record' 130 that two of these machines (nos. 4429 and 4460) of 1929) are believed to have worked previously at Haifa during building of the large port there. It seems that at least one of them was also employed at Jaffa. This is a logical assumption considering the involvement of Rendel, Palmer & Tritton in the building of both ports and the probable use of former Haifa Harbour Works Dept. travelling steam cranes at Jaffa Port..... "

In 'IRR' 173, June 2003, p.351: "The two Kerr Stuart Class DX-1 diesels, makers numbers 4429 and 4460 built in 1929, have been mentioned in connection with the Haifa Works Department and also with Jaffa Port. A little more information obtained from a file at the Israel Railway Museum Archives can now be added to their short biographies.

On 19th. April 1944 the PR District Engineer, Lydda wrote a memorandum to the Chief Engineer stating that "The Cheif Mechanical Engineer informs me that Public Works Dept. have two 'Diesel' locos in store and state them to be of Decauville gauge and previously used in Jaffa Port.'..... I think it certain that these two locos can only be the KS 4429 and 4460, which had evidently been stored by the PWD following completion of the Jaffa Port work in 1937. PR now became interested in them and enquiries were made about their gauge, both 60cm and 2ft being quoted... A decision was quickly taken and on 28th. April 1944 the PR Chief Engineer wrote to the CME asking him to "Please send the diesel loco (60cm gauge) which is in working order to District Engineer, Lydda and when the second is usable I would like that also sent to him." This cannot be taken as absolute proof that these locos became PR property,... but it certainly sounds as though they did...."

In 'IRR' No. 186, Sept. 2006, p.411: "On p.88 of 'Record' 179 I suggested that the 60cm gauge 'Simplex' 20hp petrol locomotives, Motor Rail 5083, 5084 and 5089 of 1930, went directly from the Haifa Harbour Works Department to Solel Boneh, but it now appears that only two may have done so. A photograph in a recently-published Hebrew language book shows what is doubtless one of them with a train of three side tip wagons in the new Jaffa Port. Evidently work had not long begun on this project, dating the view to 1934-35 and the 'Simplex' is actually running above the Mediterranean Sea on a temporary pier, or possibly an embryo wharf, at the end of which is a steam crane for dumping spoil into the shallow waters. I do not know what happened to this locomotive after completion of Jaffa Port in 1937.

Another contemporary photograph in the same book gives a good overview of the Jaffa Port works; An ex-Haifa Harbour Works Hunslet inside-cylinder 0-6-0ST is seen on the isolated standard-gauge line laid southwards along the coast for five kilometres or more, which was used for transporting sand and stone. Partly visible alongside is a 2ft/60cm gauge Kerr Stuart DX-1 diesel, either 4429 or 4460 of 1929, both of which were also HHWD."

Interestingly a Namal Mifratz is being built north of Haifa at present in what looks in some respects to be a similar manner – just on a larger scale and not using 60cm gauge railways!

(ii). THE PALESTINE ELECTRIC CORPORATION HUNSLET WDLR 4-6-0T's

Mike Swift is dealing with the archive of the late Geoffrey Horsman of Leeds, a noted expert on the history of the Hunslet Engine Works. He has kindly made available a four-page handwitten letter/report which has come from a list of Hunslet engineers' reports and which, as he says, at last solves the mystery of the identity of the 60cm. gauge former War Department Light Railways 4-6-0T locos supplied to the Yarmuk power station works at Naharayim. The three locos purchased directly from France were : PEC H5: HE 1233; H6: HE 1227 and H7: HE 1265.

"Palestine Electric Corporation Ltd.

Locos at Jordan Works.

The Engineer on the site (Mr. J. Wilenchuk M.E.) is now quite satisfied with the conditions and working of Locos. Nos. 1228, 1255 + 1278 and also with the condition of No. 1252.

Locos Nos. 1252, 1227, 1233 and 1265 were not put to work before I left as they were awaiting a visit from the Palestine Government Inspectors, they have been tested Cyls. 240lbs + Steam 160lbs per sq. inch in the presence of Mr. Wilenchuk and myself. Two certificates were then made out stating that the boilers were then in good condition, one copy being for the P.E.C. and one for H.E. Co. It was specially mentioned by myself that the H.E. Co. was not responsible in any way as to the condition of the locos from France.

Mr. W. would like us to send him an Indicator Diagram on the percentage of steam filling, cut off, exhaust etc.

The Coals and Oils fuels consumptions has not yet been measured, when this has been done a copy of it has been promised us.

I have asked for the 7 locos to be brought close together if possible and Photographed, Mr. W. agreed that it would be a very interesting Photo and if it was :/

be done he will be pleased to send us a copy.

The P.E.C. Nos. are as follows:

H1 for Maker's No. 1255

H2 " " " 1278

H3 " " " 1228

H4 " " " 1252

H5 " " " 1233

H6 " " " 1227

H7 " " " 1265.

If any Tyres are needed, the Intermediate ones should be supplied 3¾" wide.

J. Barratt 30/3/28.

P.S. As far as I could make out on the consignment note from France the price was GBP 450 for the locos, 35 for Oil Fuels Apparatus and 15 for Packing making a total of GBP 1,500."

Attached is a copy of the neatly handwritten Certificate mentioned above, on the trilingual printed letterhead of the Palestine Electric Corporation Limited / Chevrat heHChashmal LeEretz-Yisrael, 'Jordan Power House'/ Tachanat haKoach Yarden: In Mr. Barratt's handwriting:

"Four Locomotive Boilers hyydraulically tested as follows and were in good condition.

P.E.C. H.4. Maker's No. 1252 to 240 lbs per sq. inch on 5th. March 1928

" H.5. " " 1233 " 240 " " " " " 13th. " 1928

" H.6. " " 1227 " 240 " " " " " 14th. " 1928

" H.7. " " 1265 " 240 " " " " " 14th. " 1928

In the presence of: Barratt of the Hunslet Engine Co. Ltd. 14/3/28

J. Wilenchuk M.E. of Palestine Electric Coy. Ltd. 14/3. 28.

One copy of this is in the possession of the Palestine Electric Corporation.

Signed: J. Wilenchuik M.E.

Barratt."

.....

Also added is a sheet in Barratt's writing:

"W.D. Locos.

Regulator Pilot Valves?

Regulator levers, Longer and set towards R.H.

Reversing Levers, longer so that it is above side tank.

Engine Frames: More clearance for Bogie Springs

Derailment Beams, more clearance for Screw jacks.

Bogie Axlebox Covers, holes for Oiling.

Bogie Stops. Oak bolts or setscrews.

Trailing Brake Hangers Bolts? occasionally fouls Coup. Rods.

Oil Burning Apparatus-

Emptying Cocks on Fuels Tank.

Gauge on Try Cocks on Fuels Tank

When supplying steam to another engine a Stop Valve is required on present Steam Jet Pipe.

When accepting Steam from another Engine a connection is required on present Steam Jet Pipe to allow Jet to be used."

On this someone has written: "Mr. Dean - Have a talk with Mr. Barratt regarding these matters."

So here we have a fascinating insight into these two engineers - one imagines them in oil-stained overalls - 'Mr. Barratt' who does not allow his Christian name to be employed, and another engineer of clear Eastern European name, yet with mutual respect for their competencies, toiling in some humid hut in Naharayim to check the second-hand equipment that had been acquired by the P.E.C. and drafting the necessary paperwork for their respective employers. The locos that had actually been used in France had clearly received some modifications 'in the field'.

It is worth noting hgere that in November 2019 the 'Peace Island' was handed back by Israel to Jordan at the latter's request or demand.

(iii). NEGEV LINE FILM.

The link: https://www.youtube.com/watch?

v=zEdiBKBY57U&feature=youtu.be&fbclid=IwAR1zTGrEGDEB170NHvuzSoD3BN2HUcsP6L8cZulBNrsR2K0S4wsJSkhLYbY

takes one to a short film (three and a half minutes) computer-animated of plans for the new line to Eilat. Well worth watching.

(iv). MORE COMPENSATION.

From 'Today's Railways' 285 p.47.

"NS has reached agreement with representatives of Jewish, Roma and Sinti victims and their heirs who were transported by train from Westerbork in the Netherlands to the German concentration camps during World War II. 500 victims who are still alive will be paid compensation of €15,000 per person. Heirs will be paid between €5000 and €7000 per person. This is not meant as a means to make good the damages, as the role of NS during the war was never fully clarified - it has not been clarified whether NS staff assisted the Germans voluntarily to transport people to the camps. Instead the compensation is symbolic. French (SNCF) and German (DB) national railways, as well as the German manufacturers Krupp and AEG, have already paid similar compensation. (RL)."

(v). OLD TV FILM.

The Südwestfunk (SWR) German television station has a series 'Eisenbahn Romantik'. The link: https://www.ardmediathek.de/swr/player/Y3JpZDovL3N3ci5kZS8xODM1MTk0NA/

leads to a 27-minute film shot in 2000, with trains filled from Haifa to Tel Aviv, Jerusalem (by trolley!), Beersheva (as it was!) and Dimona. There are interviews with Paul Cotterell z'l' at the Museum and with a veteran at Kibbutz Gesher, as well as a younger Harel Even. Aharon Gazit appears in the trolley and as an adviser. Interesting to see how much has changed in 20 years!

(vi). EGYPTIAN DISTURBANCES.

....The 'Daily Telegraph' of 22nd. March 1919 (thanks to Julian Rainbow for the cutting) offers some insights into life in Egypt at the time. These include:

"Attack on Armoured Car. March 15. (Delayed): Cairo has been quiet the last two days, with the exception of an incident in the Beyideh Zenab quarter yesterday, where an armoured car was fired on and two soldiers in the car wounded. The men in the car replied, killing thirteen of the demonstrators and wounding twenty-seven." (One wonders whether live ammunition was perhaps being used for this 'appropriate response'?)

"The tramway service has been partially resumed. Inflammatory documents are being circulated. The total number of casualties is uncertain as reports from the provinces are not yet to hand." Reuter."

"Reports have been received of demonstrations in various localities in the provinces, some peaceful and others where the military had to intervene. Attacks on railway and telegraphic communications have occurred in some provincial districts, notably at Birket-el-Sabh, Wasta and Galioub. A crowd numbering about 3,000 rushed into the station at Galioub, smashed the station buildings and cut the telegraph wires and the railway line. The tramway station was bravely held by five British officers and four Indian soldiers who were passengers on the tram. An aeroplane appeared and swept down and dispersed the demonstrators, who had suffered many casualties from the officers' revolvers.

The attack on Wasta was made by a crowd of natives and bedouins, who scattered the police and seized their arms. They proceeded to the railway and began to remove the rails between Wasta and Recca for a distance of ten kilometres. They also cut the telegraph wires and killed an English railway employee.

An express train to Cairo was stopped at Recca, where the demonstrators rushed the carriages and sacked the post-van. They also pillaged Recca Station, afterwards returning to the villages. There were no casualties among the staff and passengers of the train. Troops have now reached Wasta and arrested many of the demonstrators."

(vii). HYBRID TRAM POWER.

Mark Stegeman has sent an excerpt from 'De Leidse Paardetram' ('The Leiden Horse Tram') by Mr. J. de Graaf, pub. Brill 1979, pp.17f. This has some interesting insights into an element of tramway horsepower that I suspect few Harakevet readers will have considered: (Translation from Dutch by the Editor).

"Daily capacity for a horse pulling a vehicle was 1,625,000kgm for 60km over 10 hours. An omnibus horse managed per day on average 1,368,000kg/m and a tram horse according to calculations 1,182 kgm. It was therefore necessary to carry out further investigation. The Committee of the Compagnie Général des Omnibus in Paris wanted to

know more. M. Lavalard, who had already been studying this matter since 1878 and had already carried out various tests, was commissioned to do more. He fitted self-registering dynamometers on the vehicles to get the results. These meters gave him the power / time ratio; by drawing on the diagram he could add time / distance. The results were clear. The maximum speed for a tram horse was 180m/min and for an omnibus horse 150m/min. Average result from stop to stop was 82kgm/s for a tram and 95kgm/s for an omnibus. On starting, hauling through curves and climbing slopes the diagrams showed heavy peaks. These were the cause of the too-low measurements for the tram horse. Lavalard's report was published in the Bulletin of the Société des Ingenueurs civil (July 1884).

Care of the Horses. A large proportion of the company's capital was invested in the living creatures and so good care of these horses was vital for the company's existence. Smaller operators employed local veterinarians, but the major tramway companies employed their own horse doctors, who not only treated the animals but did a great deal of work to ensure the healthy conditions in the stables and and also advised on purchase and sale of horses, although this work was then dealt with by horse agents. This was often a thankless task, for the price of a good animal was often higher than that which an agent was permitted to spend.

The demands placed upon a tramway horse were: Usually the horses to be bought were between 5 and 8 or 9 years; only in exceptional cases did one purchase horses between 10 and 12 years, albeit it sometimes happened that a horse took its first steps along the rails at an age when most others would already have been set to lighter work. A horse for tram work must not be too large but nevertheless strong and calm, not easy to frighten. Aesthetic issues were not as important as a good general condition and pace. Since these horses usually had to walk on streets, they needed good hooves, and any with flat hooves would be rejected. The legs and muscles would be carefully inspected.

Mules seemed also very well suited to tramway work. They were used by most of the larger companies and did well there. The market for mules was small, so that it was never easy to buy a large number. The mule, a cross between a male donkey and a horse mare. Looked like a horse and was in a state to walk 45 to 50km a day hauling 150kg. The mules had a soft, secure trot, they had the patience of a donkey and the strength and courage of a horse. Also mule donkeys, a cross of a stallion horse and a donkey mare, were used for trams. The author of these lines saw such animals in action in Port Said in 1926...."

Such latter creatures were also called Hinneys – from a stallion and a 'jenny-donkey'.

(viii). IN MEMORIAM: BOB DARVILL.

From his son Simon we heard that his father Bob had passed away suddenly Friday 6th. Dec. aged 74. Bob had, among other things, helped Paul Cotterell on researches into locomotives at the cement works at Beit Shemesh.

(ix): RAILTOURS OF ISRAEL AND JORDAN.

In March 2019 PTG Tours is planning two related railway tours - one in Israel, one in Jordan!!

14 to 21 March

Israel

Join us on PTGs first visit to Israel, and a railtour which will visit most of the freight lines in the country over three days, appropriately using a selection of freight locomotives to supplement one of the few freight locomotives still fitted with door opening controls which must be part of our special train.

Israel has a modern and efficient railway network which is still expanding with new lines being built and electrification works in progress. Most trains are diesel hauled and the intensive service on most lines mean it is difficult to accommodate special trains. As a result we will concentrate on the freight lines as it is quite straightforward to buy passes for parts of the network and travel the passenger lines independently. The reason for the tour being Monday – Wednesday is that no trains run from Friday afternoons until Saturday evenings which is the Jewish Sabbath.

For details, prices, etc. see:

https://www.ptg.co.uk/rail-holiday-tour-israel

and

https://www.ptg.co.uk/rail_holiday_jordan_petra

22 March to 1 April, 2020

Jordan - UPDATED 15/11/2019

An exploration of the railways and ancient wonders of the kingdom of Jordan, including of course, Petra.

Highlights

- Citadel and Roman Theatre of Amman
- Tour of loco depot and workshops
- Steam hauled charter train
- World renowned Roman ruins at Jerash
- The "Red Rose City" of Petra
- Steam-hauled tourist train with "Lawrence of Arabia attack"

Tour Manager: Iain Scotchman. Any questions please email Iain at iain@ptg.co.uk

127:09

IRAN. AN UPDATE.

In 'Fern Express' III/2019, Nr. 143, pp.20-

From the Editorial: "Updates on... Iran bring this interesting country closer to us; However one also feels one should add: "Visit the country, while it is still there..." The foreign political pressure is immense and is also steadily rising, but the country is sensational in its beauty and its people make each journey there an unforgettable experience."

NORTH IRAN: AN UPDATE FROM 2017.

Electric to the Azerbaijan Border.

The line Tabriz - Jolfa is the oldest main line of Iran. The station of Jolfa has existed now for 102 years. Only one single daily train pair is scheduled to traverse the line - formed of two carriages and a generator coach. There are two timetables for this train pair, which alternate daily! To make the matter even more complicated, the timetables also change according to a two-weekly rhythm, says one railwayman. Between nil and five freight trains run per day - unfortunately 'nil' occurs fairly frequently but when a train does run then, as a reult of the alignment and the train weights, it is common that two locos are used. For this traffic a total of eight electric locos is maintained. Since they have 3,600kW (4,800hp) the three-coach passenger trains must count as among the highest power-weight ratio in the world! The line and the layouts look to be in good condition.

In Jolfa there is a border crossing into Azerbaijan, although in 2017 no trains were traversing it due to building works. The last freight train crossed the border in October 2016 and since then there has been no cause for running another. The traffic is pretty sparse in any case; when services run at all then they comprise a single, short, broad-gauge daily passenger train. In Jolfa were observed three green broad-gauge passenger carriages fitted with screw couplings, and also two Diesel locos of the Class 40, at least one of which in the broad-gauge version. One electric loco (Rc4) was standing in the shed as reserve. Jolfa has a small, old-fashioned gauge transfer layout and several spare wheelsets for exchange purposes. The station is, however, apart from the single train to Tabriz, utterly deserted. The sudden appearance of a group, bearing photographic permits - something which had never been seen before! - threw the five station policemen into a state of great excitement. Once this matter had been clarified the passenger train, which was standing in a position not too good for photography, was moved especially some 20 metres for the group so that no lamp post stood in the way of the loco!

The Link to Turkey.

The line runs from Tabriz via Soufian towards Turkey. There is also one passenger train pair but only to the station of Salamas which is situated some kilometres outside the town. A GT26, a generator van and two passenger coaches work every second day. When the timetable indicates that trains from Jolfa and from Salamas travel at the same time from the junction, this is an illusion - because the days on which these trains run are always different.

On the line to Turkey there is only freight traffic beyond Salamas. According to different versions there are between two and fifteen trains per day and per line, though most of them run by night. From Soufian they are often worked with an electric loco - either to Tabriz, where they continue with a Diesel engine, or to Jolfa into the industrial area there. 25km from Khoy is the impressive Ghotur Bridge. Further westwards towards the border station of Razi the alignment is quite spectacular, but due to the increased presence of the border troops any idea of hanging around here without a photographic permit is not recommended. The Ghotur Bridge is guarded by military posts at each end and a sign on the road to it warns against photography - albeit only in Farsi.

Although some trains head off towards Jolfa, the number of freight trains from the direction of Turkey that reach Mianeh is often described as just one pair per day. Nevertheless a new alignment Mianeh - Tabriz has been recently completed and should enter service for mid-2018, although the existing line (which remains in use) is only used by a very small number of trains.

The international passenger train into Turkey works again after a long gap. In 2015 apparent Kurdish separatists had reportedly blown up a section of line in Turkey which was why, even when the line had been repaired, it had been considered too dangerous to resume passenger traffic.

CENTRAL IRAN.

Visit to Bafq Depot.

In Bafq there is not only a large mine but also a major locomotive depot. There are some 100 locos allocated, mainly Alstom AD43C machines, the GE-Montreal engines of classes U30C and 30X-7i and naturally the well-known GM-EMD GT26CW. In the depot there stands in an area which is in any case closed to the public a large sign prohibiting photography, in English, Farsi and as a Pictogramm. Although we were present with a large delegation of representatives of the railways and the State Railways Publicity Department had sent three photographers with us, the Police were nevertheless called and once more they wished to study all the paperwork most carefully. They then escorted us until we had completed the visit.

In the depot a Chinese DF8BI was also shunting, although this does not belong to the State Railways. In addition the Romanian machines have been in store at Bafq for the past fifteen years. These have Alco motors, which we are told are the best thing about these locos. An engineer from the depot was commanded to accompany us and he showed us all areas and spoke English. The Depot gives the impression of being very well cared for. Per month up to two heavy intermediate or full overhauls are carried out and when necessary motors, generators and bogies can be exchanged. 600 men are occupied in the depot.

In answer to the question as to which machines the workshops staff liked the best, the response was clear - the old American crates! Nothing can compare with the indestructible technology of these GM machines.

Along the Line.

In Bafq three lines meet - from Teheran, from Bandar Abbas and from Mashhad. To this is added the line to the large open-cast working. Traffic on the line Yazd - Teheran and Yazd - Isfahan is the busiest because there is a large steelworks near Isfahan that uses the products of the mine at Bafq. Along the line to Bandar Abbas many container trains can be seen, whilst ore, coal, steel and oil traffic seems to dominate the line to Yazd.

Between Bafq and Yazd the works for double-tracking the line are well in progress. The attractive Kronen Bridge before Mahrdad (built 1978) has already had a new concrete bridge added parallel on its south side. Works have already begun also between Yazd and Qom but it will still be quite a while before one can take the second track into use. The single-track line is mostly aligned for 160km/h operation, but one barely notices this speed, because the stony desert through which one travels is so flat and monotonous.

The railway construction projects that had been delayed by the economic sanctions are now beginning to show fruit. In May 2017 the line to Hamedan was inaugurated; construction had begun in 2004, then came a lengthy interruption due to the sanctions and in the meantime the 160km/h line is ready for operation.

In 2019 the line in Miyaneh to Bostanabad and later also on to Tabriz should be opened at last; However the old line via Maragha is hardly used, so it seems the new link can really only be used for accelerating the very sparse passenger services. The route from Tabriz to Teheran will however be appreciably shortened.

Two further lines should have joined the network by the end of 2017: From Arak to the border to Iraq near Khoshrowi and the line Mahabad - Oruiyeh in the North-West of Iran.

Train-Chasing in Iranian.

There are very few through train connections in the country, most of the through services being run via Mashhad and of course via Teheran. If one wishes to travel from the East to the South, apart from one through service (the 'Mashhad-Train') there is no other way but by changing. But the trains to and from Teheran do not use the same line around Ghom and so a bus transfer is required from the station of Mohammadiyeh, well outside the city, to Ghom itself. In Ardekan not far from Yazd we boarded the Siemens 'Paradise' Multiple Unit and wanted to get out at Mohammadiyeh. From here a locally-chartered bus was to take us to Ghom and our night train to the south. But the bus we used in and around Yazd had a job to do in Teheran and the way to Teheran goes via Ghom, so this was the bus that should pick us up. Our unit travelled at 160km/h at times and had only a very small delay on arrival. But - when we got to Mohammadiyeh our bus was nowhere to be seen.

It turned out that a new Control Point had been established but the bus company had not been informed. On the roads of Iran there is an extensive network of Control Points, where each bus must halt and report from where it has come, where it is going and who is on board. At the same time the amount of time taken for driving between the two points is supervised.

Before each journey a permit has to be obtained for each Control Point. However, if one does not know that there is a new one, then of course one does not apply for a permit for this one! Our bus had to take therefore a wide detour in order to get to the station without using a road with a Control Point. In consequence the time was short if we were to make our night train - because, not having passed through the relevant Control Point, our driver was now afraid to drive us direct to the station.

So he drove us instead to the next bus station, where we quickly chartered a local bus that should bring us to the station! The railways were informed that we were on our way but with very little time. Initially the response was: No problem, the train is also running late, but then it rolled punctually into Ghom after all!

In the meantime the Railways had sent someone to the bus station in Ghom. While we were busily unloading the message came suddenly: We won't manage it, the traffic in the city is too heavy in order for us to get to the station in time. But the railwayman also said that the train could wait for 20 minutes in Arak. So - we needed now a bus to Arak. And right away! It would also have to have the valid papers for the two Control Points on the way there. The urban bus we had seemed in any case not suitable for chasing the train a longer distance.

It took a while for the bus that we had telephoned for turned up - but it was fully occupied! The passengers were then reloaded into the urban bus we had chartered and we got the racing machine, we loaded everything into the bus and started the chase of 140km. Stupidly, the bus had been fitted with a GPS speed supervision device and so on the motorway we had to stop for a while at a lengthy 60km/h section wbile the rest of the traffic went past us. We reached the station of Arak 15 minutes after the scheduled departure of the train.

The train was standing in the station and waiting for us. The train's restaurant had already closed, but the meal we had ordered in advance was cooked for us and served to us in the compartments, before we passed the rest of the journey in sleep....

The Transiranian Railway.

Traffic is rumbling heavily along the southern section of the Transiranian Railway, albeit the works on exchanging the rails is continuing, so that on the second day of our visit nothing moved during the midday period.

Some sections are still fitted with the original steel sleepers from the 1930's, others have had these replaced by concrete sleepers. Due to the many curves the line speed is mostly restricted to 60km/h - even so the trains are booked out, because the road link makes an enormous detour.

On the northern ramp of the Transiranian Railway traffic was very thin; during our visit not a single through freight train passed. Freight trains comprised only local services that started or ended at Gamsar, Firuzkouh, Pol-e-Sefid and Sari. We could only find one local freight train or train pair per section of line in daylight. On the other hand long rakes of empty oil tank wagons stood in several stations.

There are at least great plans for the line. It is desired to be able to bring broad-gauge wagons through to Teheran and at the same time electrification is envisaged. However, if the broad-gauge scheme is to be realised then the tracks will have to be lowered in all the tunnels. There are 69 tunnels on the line between Sari and Garmsar, it would therefore be a very extensive operation. The contract for the electrification has already been signed with Russia, one is told. However, there is no sign to be seen on the ground of any such work on the railway.

Depot Teheran.

The large depot at Teheran has a workshops area which one could surely describe as a full Repair Works. Some 300 employees work here each year on inspections of some 80 to 100 machines, mostly of classes G22W and GT26CW. The last G12's are also inspected and maintained here. It is only for the truly heavy overhauls involving welding work on the frames and major bodywork repairs that the engines are sent to Karadsch.

Here also the GT26CW are highly valued by the operators and the workshops men, for their robust construction and the mixed-fuel motor cope best with the various circumstances surrounding railway operations in Iran. In the deserts of Iran it is not so important to save every possible drop of oil or Diesel; more important is that the machinery simply functions reliably. On our journey we encountered only one Diesel loco that had to be sent back to a workshop due to a defect and breakdown.

A REPORT FROM 2018, "In the Cave of the Lion'.

It must be said that the cave looks tidy and spacious. Although, the way some people constantly seek for reasons for another war, this could change.

When as a Berliner one travels through Isfahan or Qaeumshahr, and also along side streets, then one can only hope that the Persians never come to Berlin, for they would be shocked at the amount of dirt, filth and rubbish on our streets. Of course there are dirty corners in Iran and the State Railways are sometimes a little shabby, as it was on the Deutsche Reichsbahn in the 1980's, but the cities are much cleaner than - to take but one example - the German capital.

The Railway in Iran runs, it grows and it spreads. The new line to Azerbaijan is now at last in operation, after the construction had been severely slowed by the sanctions. Work is under way on doubling the track on several sections.

Urban Transport.

The expansion of the Underground railway network is also making progress. In Teheran most of the trains are crammed full at peak periods in spite of the very frequent services. On the roads one sees little sign that the pressure has been eased much by the 'S-Bahn' and 'U-Bahn', but without these it is clear that the traffic on the roads would suffer total collapse. In consequence the further expansion of the system makes sense. The Underground is relatively cheap to use and is affordable for everyone and the quality of what is offered is on a par with that in Western Europe.

The link to the airport with the U8 has been completed and even if only provisional and single-track, one can avoid the rush hour jams and get quickly by underground almost everywhere. It was found by experiment that the U1 runs direct to the airport.

The Metro in Isfahan is just as reliable, although unfortunately the passenger numbers are still rather modest; several stations are still under construction although they are already open for us. The expansion of the network is also making progress, everything is very modern and made with the finest of materials, albeit the State Railways also don't seem to be so economical with the marble. A single ticket costs 7,000 Rial, about 12 Euro Cents. The monthly ticket is of course even more economical.

In Mashhad none of the Duewag cars are in use any more, but modern vehicles which in the meantime are available in sufficient numbers. At present only Line 1 is working, but a section of the Line 2 is due to be opened very soon.

On all three Underground systems visited the customer information systems were excellent, sometimes bilingual, comprehensive and understandable. The authorities who run these U-Bahns are not very friendly to photography and no permits are issued, but on the spot things are often possible anyway. In Mashhad it was absolutely no problem, everyone including the supervisor were very friendly, whereas in Isfahan a rude guard approached immediately... but did disappear once the train came. In Teheran the contact worked as follows: On the opposite platform (with the tracks in between) stood a guard, who, when he saw the camera, said something like "But you don't want to photograph anything here!" "But I do!" "Ah, so" - and then he wandered further along the platform to look out for naughty boys who might want to throw some litter on the floor. (But they don't! This is not the S-Bahn of Berlin, where anyone who wants to can smoke on the platform unpunished and then throw the stub onto the tracks...)

In Qom (Ghom) construction has been under way for some time on a monorail which should run through the city on stilts. Once a large proportion of the route had been completed, the project was suddenly stopped. Half of the budgeted expenditure has been spent already, the ugly concrete skeleton reaches into the sky, but the way it seems, nothing much will change soon. Qom is, if one may be allowed to say this, one of the less-attractive cities of Iran, but it does have the wonderful Shrine of Fatemeh Masoumeh, daughter of the seventh Imam, and is therefore a tourist and pilgrimage centre.

Transiranian Railway.

The timetable for the local freight train from Gamsar has unfortunately been changed to the night hours. This means there is even less traffic during the day, when the through freights don't run. There were however some on the first day of our visit, so that several good pictures could be taken. Most of the trains change locos at Pol Sefid. On the second day there were problems with a freight train whose papers were apparently not in order. Its departure from Firuzkouh was announced several times and then cancelled again. Instead on our second day we saw one of the Tourist trains which head from Teheran to explore the North Ramp. One of these trains, from Teheran to Savad Kouh, has in the meantime been listed in the timetable. This train, a railcar which runs every Friday, halts at the high points of the route and passengers may take photos - something which the State Railways normally finds difficult to accept. In Yazd a railwayman immediately called the Railway Police who then came running, carefully inspected our several-pages-long photographic permit, and then followed us along, even in the ballast behind the platform.

This time there was no interruption to the traffic on the Southern Ramp due to building work. In addition the local freight from Dorud to Chamsangar has been extended once again to Andimeshk, which on the one hand allows more photographic possibilities, on the other means that the ancient Diesel locos used thus far must be replaced by more modern locos. In April this train ran with a train heating boiler van. Several passenger trains ran significantly ahead of schedule - until of course our own night train to Teheran, which actually had an hour's delay!

The plan for a new line to be built further west of the southern section of the Transiranian Railway has been put on ice. As a result this section seems destined to remain one of the single-track sections with the most extensive traffic in the Iranian network.

RAI MOTIVE POWER.

Diesel Locos.

We published an extensive table of the diesel loco stock in (issue 131) and this is still basically current. Additional information to two of the classes:

The BR AD43C has been in production since 2000. Deliveries began in 2002. Alstom gave the loco the product code Prima DE 43 C AC. The first 20 units were built by Alstom at their works in Belfort, France, the rest by Wagon Pars in Iran. Following the production of the first series with

Ruston engines the rest of the engines were made by DESA in Iran within the framework of a technology-transfer contract. The locos are Co-Co with two end driving cabs and fitted with an RK 215 engine with a rail-head power rating of 2,880kW (3,860hp). Three versions were produced, a passenger version with 150km/h capability and 20.5t axleload as well as two freight versions with 110km/h top speed and either 20.5t or 23t axleload.

The IranRunner (IR22, Nos. 1501-1650) also known as EuroRunner 24 PC is a diesel-electric passenger loco with just one end cab, built by the Mapna Locomotive Engineering and Manufacturing Company and Siemens. In 2006 Siemens, Mapna and the Islamic Republic of Iran Railways signed a contract for the delivery of 150 four-axle Bo'Bo' 2.4 MW (3,200 hp) locomotives for passenger services. 30 of the locos were to be built in Germany (Siemens, München) and the remaining 120 in Iran within the framework of a technology-transfer contract; the contract was worth 450M US Dollars. The first locos were delivered by Siemens in 2010 and it is planned to build a further 38 (by Mapna).

Diesel Multiple Units.

The first railbus services began in Iran in 1940 and in 1974 (other sources say 1976) four French Turbotrains were acquired from ANF France with Turbomeca turbines; these introduced 160km/h services between Teheran and Mashhad: Twelve (other sources say nine) 2-car diesel multiple units of British Rail class 141 were purchased in 1998, the Paradise dmu's from Siemens in 2005 and Rotem-4 railbuses from Hyundai-Rotem.

Turbotrains.

In 2008 the French Turbotrains were converted to diesel multiple-units through the replacement of the turbines by diesel motors. In 2015 they were seen being used as hauled stock behind locos of IR22. In May 2016 two of the Turbotrains were stored at Teheran.

British Railways Class 141.

Built by British Leyland in 1984, these were bought second-hand by the Iranian State Railways in 1997 and used until 2005. Top speed is 121km/h. They were modified and given new set numbers.

As Built	Following Rebuild	Vehicle numbers:
141 001	141 102	55502/55522
141 004	141 105	55505/55525
141 006	141 107	55507/55527
141 008	141 109	55509/55529
141 010	141 111	55511/55531
141 013	141 114	55514/55534
141 014	141 115	55515/55535
141 015	141 116	55516/55536
141 016	141 117	55517/55537
141 017	141 118	55518/55538
141 018	141 119	55519/55539
141 019	141 120	55520/55540

Siemens Paradise DH4-1.

Diesel-hydraulic multiple unit with MAN motor and Voith transmission, built by Siemens in Austria. There followed a technology transfer and the production of further units in Iran. 20 sets were built 2004-2005, top speed 160km/h, four Diesel motors of 315kW each; Other sources speak of MAN D 2842 LE602 motors with 588kW power, transmission with 460kW. Apparently further units were built in Iran in 2007.

Electric Locos in Iran.

The RAI RC-4 is a class of Bo'Bo' electric locos are very similar to the Swedish SJ class Rc4. Eight units built by ASEA 1979/80 were provided for the 146km long line Tabriz - Jolfa. 25kV, 50Hz AC, power motors: DC 4,800 hp (3,600 kW), 100km/h top speed.

On the Metro in Teheran locos built in China of classes TM11, TM2 and TM3 are employed. These are modified examples of Class SS8 built by the Zhuzhou Electric Locomotive Works. A total of 56 units were delivered. Top speed 140km/h, 3,200kW.

Iran has a mega-project planned to electrify its long-distance lines. The AD43C Diesels can be rebuilt as electric locos.

Latest News: Rail Link Teheran - Ankara Restored.

On 07.08.2019 in the presence of the CEO of Islamic Republic of Iran Railways (RAI) Saeed Rasouli and the Turkish ambassador the Teheran - Ankara train was started. The train should run each Wednesday at 21.50 from Teheran, arriving in Ankara on Saturdays at 07.45. Tickets cost ca. €162, the journey lasts 60 hours. Train frequency may rise from once-weekly depending on demand.

Prior to this, on 24th. June passenger traffic was resumed between Teheran and Van. The train uses Iranian carriages and runs from Teheran via Zanjan, Tabriz and Salmas to the border station of Razi, where customs and passport formalities take place. Following a further 2km of line the border post of Kapiköy in Turkey is then reached, where Turkish officials then repeat the customs and passport inspections. Following a journey of a further 114km the station of Van is reached, from where the ferry harbour is reached. After the

Typesetting and printing in the UK by CPS Airedale & Thistle Print Ltd, Leeds.

127:10 **A HISTORY OF THE IC3 UNITS. (By Garrelt Riepelmeier, in 'Lok Magazin' 12/2019 p.73ff.)**

Since the IC3's, which created such a revolution on IR when they were first introduced, are now being phased out and used for fire exercises, this article on their genesis seems timely.

"Danish transport and railway systems have always had to cope with the geography of this state, formed amongst other things of several islands; it would alway be necessary to cross water straits. At many important spots this involved ferries, which always affected the rail traffic and involved a lot of infrastructure and complex shunting work. Major progress was made with the opening of the Lillebaeltsbroen (1,178m) over the Small Belt between Fredericia and Middelfart (Fyn island) in May 1935, and in summer 1937 the 201m Masnedsundbroen from Vordingborg on Sjaelland to the small island of Masnedo and the 3,199m Storstromsbroen from this to Orehoved on Falster to create a system that was better interconnected. In 1974 a network of diesel-hauled Inter-City trains replaced the 'Lyntog' diesel units but this, too, still had many bottlenecks which affected the timetable, especially the Storebaelt Trajekt between Korsor and Nyborg.

The 'Lyntog', based upon the German VT11.5 dmu's, were getting elderly and in 1981 DSB ordered two prototype 'APO-Lyntog' 5-car sets that could be easily shunted onto and from ferries. They entered service in 1982 and were refurbished 1991; However they were withdrawn in 1995 and sold to Iran. Already in 1983 an analysis of traffic had decided that powered multiple units with light bodies would be better, forming trains that could be combined or divided en route to serve different regions with direct trains. This would mean a revolution in the timetable concept and it was also decided that even this was just an interim solution before, in another twenty years or so, the system could be almost fully electrified. In October 1984 DSB sent a range of specifications to Carel Fouché Industries in France, Duewag in Uerdingen, Messerschmidt-Bolkow-Blohm and Ascan Scandia A/S. On 9. December 1985 a contract was signed with a consortium of Duewag for the frames and technical side, and Scandia for carriage body and equipment; the first vehicle should be delivered 1988.

Two Motor Cars, One Trailer.

The DSB gave the new unit the class designation ('Litra') MF and each 'togsaet' (train unit) comprised a permanently-coupled unit with two motorised end coaches MFA and MFB and an unpowered centre trailer FF. Characteristic was a whole range of innovative techniques. The chief designer was the engineer Neils Tougaard Nielsen, together with DSB design chief Jens Nielsen - these two count as the main 'fathers' of the IC3.

Like its predecessor, the 'Litra MA', the MF was built from aluminium (delivered from Alusuisse) and due to its short carriage lengths (20.54m for the MF cars and 17.74m for the FF) together with the ribbed sides both below and above the window band gives the impression of a U-Bahn train. Total length is 52.82m which allows two coupled units to run onto a train ferry over the Storebaelt. The weight totalled only 97 tons and they could run 180km/h thanks to a very effective transmission which gave good acceleration as well as a lower fuel consumption than the suburban MR/MRD units (one of which was adapted to serve as a test vehicle for the choice of mechanical transmission).

The most obvious visual characteristic of these trains is the pressurised rubber membrane at the ends, which gave the units the nickname "Rubbernose". They framed the front with its window and lamps; directly behind the driving console is situated which, together with the door, could be folded back and covered with a curtain to allow unhindered passage through the train. In addition this rubber membrane, pressurised to 80 Millibar, ensured a totally watertight seal between units.

No Streamlining.

That a train designed for 180km/h should be provided with such a flat front seems very strange; however, in the practice it is learned that during acceleration a turbulence was caused by air compressed forwards in the form of an invisible plough, which created reduced visibility during rain.

In the entrances double swing doors from Tebel were used. From here access was made to a central aisle in the air-conditioned interiors which offered a level of comfort hitherto unknown. This was made possible through the light oval form of the bodies, 3.1m broad, which used every bit of space in the loading profile. In the initial version there was also a play area for children, a flexible area for prams, wheelchairs and bicycles, a Pantry, three large toilets (one fitted with a nappy-changing table) and a snacks automat as well as LED reservation indicators and information. The only thing missing was a train restaurant. Half of the centre car's seats were in airline style as a Quiet Area and in each end coach there was a Service compartment and the 1st. class presented as a saloon with some of the seats not fixed. There were totals of 16 seats in 1st. class and 132 (later 122) in 2nd class plus six folding seats. Although an initial set was presented on 5th. February 1988 it could not yet move under its own power due to problems with the control systems that should allow several sets to be worked in multiple from one cab.

Too ambitious?

These development delays led to Scandia facing financial difficulties and it was only when new investors joined - from autumn 1988 the firm was called ABB Scandia - that development resumed. A new computer programme was developed rather than continuing attempts to use the 'Stella' system of the Danish firm Lyngsoe. Finally on 19 June 1989 set 03 left the factory and was accepted by DSB on 17th. Nov. 1989. After eight sets had been delivered and crews trained, the new system was introduced from 13th. January 1990. The price per set was given as 17 Million Krone. In the meantime the DSB had increased its orders to 85 units and finally by 1998 92 sets, now called 'Flexliners' had been ordered.

The manufacturers continued development work on this platform and one result was the IR4 four-car electric set ('Litra ER') of which 44 were built. They were designed to be able to work together, with one driver working both diesel and electric sets coupled together.

Scharfenberg couplers from Dellner were fitted. The DSB demanded easy maintenance procedures and so most technical components were fitted underfloor in easily-accessible extractable modules behind the underfloor skirting.

No Great Export Success.

The new supertrain gained a great deal of international attention but sales abroad remained modest. Following winter tests with sets 21 and 53 in Kiruna the Swedish Blekinge Länstrafik acquired seven MF sets which were now classed Y2, and further small orders meant that by 1996 a total of 20 sets had been sold to Sweden.

Between 1992 and 1997 forty-one IC3 sets were sold to Israel Railways, which had some slight alterations to cope with the different climate.

In 2003 DSB bought four of the sets from the Blekinge Länstrafik AB where they had become surplus due to electrification, and these became DSB Nos. MF5093 to 5096. A further ten sets went from Sweden to Israel but for the rest all that was exported were 240 Flexiliner cab fronts for the SNCB 'AM96' electric units, and a further 46 cab fronts to CAF in Spain for the class '594' sets being built there.

By 1996 the railway section of the ABB and Daimler consortium, by now called Adtrans, found it impossible to revitalise the Flexiliner concept since the DSB had now put its faith in a new generation of emus which became the ill-fated Ansaldo-Breda IC4 sets. In 2001 the Randers factory was taken over by Bombardier and the Flexiliner concept was removed from the sales catalogue. What remained for the staff here was rebuilding and refurbishment work; the Deutz BF8L513CP (V8-cylinder, 294kW) motors were replaced by Deutz TCD2015 (V6-cylinder, 330kW) and the old automatic transmission (a standardised Ecomat SHP600 from the bus and lorry industry, from ZF Friedrichshafen) was replaced by Typ AS Tronic Rail (Variant 12 AS 2303 R, also from ZF Friedrichshafen). Internal alterations included the replacement of the children's sections by four regular seats in the MFB car, the fixing of the loose 1st. class chairs, replacement of the first two chairs by folding seats for the increasing demand for prams and cycles, and replacement of one of the toilets.

Ironically the IC4 were hardly a success and current plans are for the IC3 sets to remain in use - the stock of 96 sets would be reduced to 62 by 2027, to 48 in the following year and eventually 14 by 2029 - one problem being the need to install ETCS."

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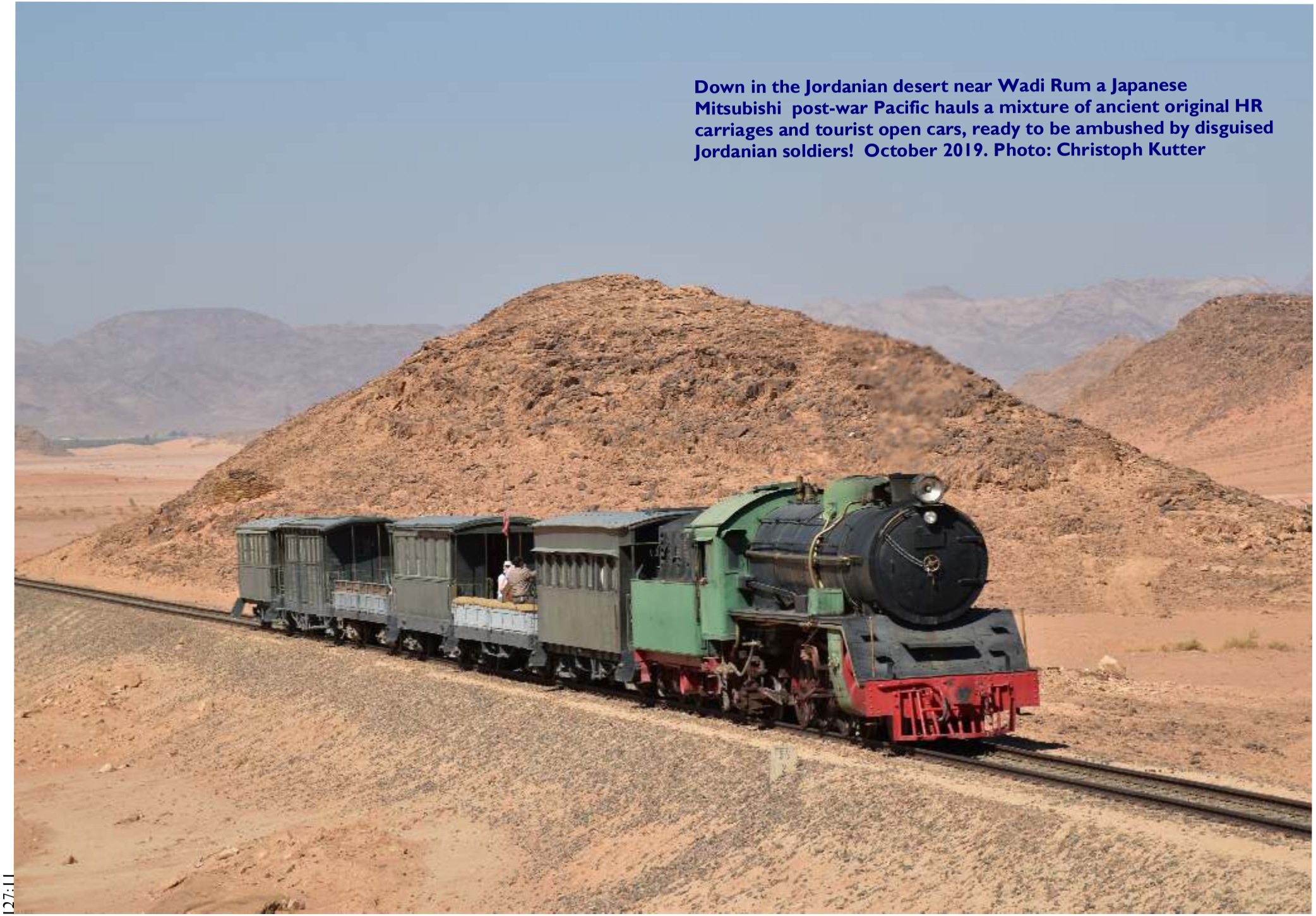

Down in the Jordanian desert near Wadi Rum a Japanese Mitsubishi post-war Pacific hauls a mixture of ancient original HR carriages and tourist open cars, ready to be ambushed by disguised Jordanian soldiers! October 2019. Photo: Christoph Kutter