

HARAKEVET -----

הרכבת

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A Quarterly Journal on the Railways of the Middle East.

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All Change! Symbolic for the changes affecting "Harakevet" - this is a rare shot of Jerusalem Station being rebuilt from 1.05m to 1.435m gauge in 1918; British solidiers carry out the work, having driven out the Turkish forces who had themselves changed the line from its original 1.00m gauge a few years earlier.

(This photo comes from the late lamented National Museum of Army Transport, Beverley).

37:2. Editorial. The big personal news will be noted from the masthead on the cover; the Editor has a new position, as the Rabbi for the island of Aruba in the Caribbean. For three years at least he will be much further from all the libraries and archives he has used until now, but nearer his computer and files ! This address should apply for at least the next three years. My thanks to all those who have sent messages of support and encouragement over the past couple of interesting, challenging and quite exhausting years.

At the start of a new Series, it may be appropriate to remind old readers and explain to new ones how (and why) "Harakevet" is published. Despite various pleas over the years, we never receive official Press Releases from Israel Railways or anywhere else. All material is obtained either by personal digging in newspapers and archives, or from contributions by the band of loyal readers and correspondents. Thus, items in the Israel Press are sent in in accumulated wads every now and then by Steve, Sybil, Evyatar etc. (sometimes just before we go to press, sometimes just after, in which case the "news" can get a little stale before the next issue, but is kept in anyway as a matter of record.) Steve and Evyatar send in their personal observations on the Israeli rolling-stock scene, but these are not "official." From Samuel Rachdi's excellent "Fahrplancenter News" we receive quarterly reports on far-flung and isolated systems. Paul, as both an involved observer of the current scene and a keen historian, sends a great deal on ancient and modern aspects of PR, IR and anything else on rails he discovers. The Hedjaz line has been frequently visited, and Andy has got to Lebanon and Kuwait, but on the whole coverage of other lines is relatively sparse. Various other correspondents, too many to mention individually, send in copies of old articles they have come across, personal accounts of journeys, odd photos and so forth. Some items are typed up onto the disc as they come, others can be copied as they are, some go into the folders marked "for use", suddenly a few months have flown by, and there has usually been a last-minute panic to get the issue put together and driven round to Steve the printer before one of the Editor's next trips abroad. How it will all work in Aruba remains to be seen - this is the last number being prepared under this system.

All is welcome, and all is kept in the voluminous box files that form the "Harakevet" archive, even if not all can be used now or in the near future. The philosophy is that, precisely because official sources are often so secretive or so full of gaps, it is important that someone, somewhere, hoards what material there is and makes it available to others who are interested, in as cheap and simple a way as possible. Hence this magazine, which is always a bit of a compromise in terms of balance and quality, but which hopes (eventually !) to have placed "in the public domain" and deposited in archives and libraries around the world almost all that there is to know on the varied railways that serve and have served this region, for the sake of future researchers. Eventually the archives too will, it is hoped, find a secure home.

The "region" is defined very vaguely as east of the Suez Canal and west of Afghanistan, but where topics cross borders - such as the military railways of World War 2, which extended across the North African Coast, and the units which built and served them, or where locos which once served here are now in Turkey or elsewhere, it is felt appropriate to include them.

So - any contributions are welcomed. There are articles scattered over all sorts of magazines in a variety of languages, references in obscure biographies, memoirs of former

military personnel, entries in old industrial catalogues, old postcards and modern prints..... whatever you find that you think might be relevant, we will be happy to receive (in photocopied form if this is easier). Items are credited where possible, though no payment can be made.

Some readers have suggested making the whole thing more "professional" and "commercial"; for now, it remains a part-time hobby, "nibbled at" when opportunity arises, and run to (just-about) cover its main costs.

In the meantime, and with my thanks to all those readers and subscribers who have sent me their wishes for some more stable and secure employment, as noted above the Editorial office will be moving to Oranjestad, the capital of Aruba, a tiny semi-independent island in the group known as the Dutch Antilles ! (Yes, there were some fascinating narrow-gauge railways on the island, and No, there aren't any railways there now.) With issue 37 out on time in June, before everything is packed into a container for shipment, there is a strong likelihood that by the time everything has been unpacked and sorted out, issue 38 may be delayed a month or so, and postage will be a little more complex, but the magazine will live on !

Enjoy !

The Editor.

37:3. New IR Stock. On Tuesday 18/3/97 two new sets of the third batch of IC3 "Kronoim", Nos. 7218 & 7219, arrived at Haifa Port complete (i.e. no work was required at Ramta - this appears to be the new procedure.) On 21/3/97 the units (set 7219 leading) is seen at 09.47 on its first test run from the Haifa sheds to Tel Aviv and back. (Photo: Steve Tish).



37:4. NEWS FROM THE LINE.

a). Beersheba Service. Inactive since 1979, from Sunday Feb. 16th. the Beersheba passenger service was reinstated, after a fashion ! Two return trips a week, Sundays dep. T.A. Central 09.00, dep. Beersheba 12.27; Thursdays dep. T.A. Central 13.52, dep. Beersheba 17.05. The Press Release acknowledges the student trains of April-May 1996, despite the fact the Israel Railways at the time swore it was not the start of anything..... Journey time is approx. 1 hr. 40 mins, with intermediate stops in Lod and Qiryat Gat. It appears likely that students and soldiers will form the main traffic, though population (and road congestion) is increasing in this southern city. A press release of 24/12/96 announced that 40M NIS was to be spent on two new stations in Beer Sheva, one at the Soroka Hospital/Ben Gurion University, the other opposite the new Egged central bus station.

b). System for Sale. According to the "*Jerusalem Post*" of 10/2/97 the Treasury and the National Infrastructure Ministry have drawn up a plan whereby the Ports and Railways Authority will first have its Maritime and Railway functions separated; the railway will itself then be split into separate Infrastructure and Operation companies, as a part of the process of breaking up this State-run company. [*This will be based on the British system, which has led to fragmentation of the system and is as yet un-proven. Ed.*]

"The Infrastructure company is likely to stay in government hands, according to an aide of National Infrastructure Minister Ariel Sharon. 'It will either become a state company or a government subsidiary'. The government would consider either a public flotation of 30-40% of the firm on the Tel Aviv Stock Exchange, or a private sale". All passenger and freight trains would be run by a private company, and at a later stage individual tenders could be offered for each train service.

"It is expected the enabling bill will be presented to the Knesset within the next few months, with the legislation process taking some two to three months."

A major 2½ page article appeared in "*Ma'ariv*"'s "*Oskim*" Business Supplement of 8/11/96 on these plans and the funding problems they pose.

c). Development Plans. From the same article as above (by David Harris): Ran Kroll, the Treasury Budget Director, and Giora Rom, the Director-General of the National Infrastructure Ministry, have held meetings to discuss future development proposals on the railway network; a NIS 300M budget was agreed for 1997. Much of this budget is already allocated to projects agreed by the National Infrastructure Ministry last year - including work on the Rishon LeZion - Tel Aviv line, doubling of track from Tel Aviv to Lod and Ramle, and on the coastal route between Binyamina and Haifa.

Other developments Sharon would like to see (some of these have been reported previously) include an upgraded Tel Aviv - Jerusalem service, either with a new line running alongside Highway 1 or the now more-favoured improvement of the existing route, reducing the journey time to less than an hour. [*See below.*] The extension of the newly-operational [*!! it has been there for over forty years ! Ed.*] Tel Aviv - Beersheba line as far south as Eilat; the possible construction of two new lines between Israel and Jordan - between Haifa and Mafrag, and from Eilat to Aqaba, with Israel and Jordan in dual control; also a northward extension towards Sodom, opening up both freight exports and imports, together with encouraging tourists to the Arava and Dead Sea areas; two

lines between Gaza and the West bank; and operating a service between the Erez crossing point to Gaza and the port of Ashdod. Sharon has also indicated that he is in favour of a line from Gaza to Kalkilya being extended into Jordan; plus the long-term options of extending the coastal route north of Nahariya and constructing a line to Tiberias.

Such a "wish list" would see a dense mesh of lines over the area, to the joy of all rail campaigners, even a long-delayed fulfilment of Herzl's vision in "*Altneuland*". Kroll is quoted as saying that "the structural changes will not affect the development of Israel's railways."

Intriguingly, and typically, the Transport Ministry (responsible for urban rail development) has been cut out from most discussions and arrangements for these developments, which are being led by Ariel Sharon's own power-driven Infrastructure Ministry. Yitzhak Levy is quoted as plaintively saying "It seems odd to me. This was all decided before I became Transport Minister. It does seem strange, but then again there are many strange things in Israel." This is possibly the most factually correct statement of all those listed above.

d). The Jerusalem Line. A Song of Descents. As hinted above, the chances of a brand new high-speed line to Jerusalem have once again dwindled. As well as the 10/2 article, David Harris in the "*Post*" for 30/1/97 reports on a meeting between Dr. Moshe Hirsch of the Transport Ministry and the Jerusalem Development Authority. At this point (though see above !) the Transport Ministry mistakenly thought it was charged with Transport planning for the country.... but considered that the new line alongside Highway 1 with an entrance to the city from the west and an underground terminal under the new Bus Station was an expensive dream which could not be sustained, and was considered likely to opt for an upgrading of the existing route. A source was quoted "This is a dream; it'll be too expensive and impractical. We've got to keep this as cheap as possible, especially given that Egged is likely to drastically reduce [*sic. - sorry about the split infinitive. Ed.*] its fares on the Tel Aviv-Jerusalem bus route because of the opening of public transport to competition." "A third option, to build a line parallel to the new Highway 45 which would leave Jerusalem northwards, passing Givat Ze'ev and Hashmonaim, this stretch being largely across the Green Line, seems to have been largely discarded in government circles."

Even if you will it, it seems, it may still remain a dream. Was Herzl wrong ? "*Ha'aretz*" in an article quoted a transit time by a proposed new route as only 28 minutes....

e). Jerusalem Light Transit. (Also from the "*Post*"): The Jerusalem Municipality is again about to announce a master plan to reduce traffic congestion in the city, including a light railway system to be operational by 2001, coupled with at least four huge parking lots to enable the creation of a modern "Park and Ride" system. Initially the lines would be built along roads and underground between four main stations - in Bayit VeGan, at the entrance to the city, near the Jerusalem International Convention Centre and the new central bus station; alongside Jaffa Gate and the central light railway station at the Jerusalem Mall, which will be linked to the Tel Aviv-Jerusalem railway line that passes nearby.

If the scheme is approved, an international tender will be advertised, with construction anticipated to start some time in 1998. However, we will believe this, as with so many promised arrivals in Jerusalem, only when it has actually occurred.....

n). High Speed to Lod. Steve Tish has sent a cutting regarding the "Rakevet HaParvarim" from Tel Aviv to Lod - probably from late 1996 - which enthuses about the way in which 462,000 passengers travelled between Lod and Tel Aviv by rail in August 1996, a 43% increase on previous equivalent numbers, and how the new trains will traverse this section at 400 kph !!! (Presumably at this speed the Ben-Gurion control tower will supervise the line, rather than the existing signal boxes...)

Sybil Ehrlich noted in early June that the doubling works between Lod and Tel Aviv are making good progress; new track on concrete sleepers has been laid approximately one-third of the way to Kfar Habad, rails are roughly stacked on a further section, and with one short swampy exception the remainder of the new trackbed and basic gravel underbed appears complete.

g). More Statistics. More sober reporting comes from "*Israel Business Today*" for 31/10/96, whereby total 1996 passenger figures for IR would exceed 50 million; The September 1996 figure of 419,000 represented a rise of 32% over the same month in '95; suburban services especially had seen growth, an 11% rise in Netanya-Tel Aviv traffic being eclipsed by 75% rise in Herzliyyah-Tel Aviv; the opening of the new Hashalom station added 56% to the Rehovot-T.A. passenger volume; between March-September 1996 a total of 481,000 commuters used this line.

h). Yitzhak Sadeh Station. "*Globes*" of 12/12/96 announced that this new station on the Ayalon line would cost 25M. NIS.

i). Double Delays. "*Globes*" on 5/12/96 announced delays to the doubling of the tracks between Qiryat Motzkin and Nahariyya. 100M NIS had been allocated to this work in 1997, instead of the 400M NIS sought for the project. (*See (n) below.*)

However, as from Thursday 10th. April double track was brought into use between Hof Carmel and Hoterim.

j). Derailment. "*Yediot Aharonot*" of 16/2/97, p.18 has a photo of eight derailed bogie hoppers (No. 316 nearest the camera) from a loaded train heading for Ashdod, derailed, possibly due to a broken rail, near Kibbutz Nitzanim. The derailment took place "about a week ago".

k). Strike ! "*Yediot Aharonot*" of 16/2/97 reported a strike of railway workers, due to last until 6pm., in protest against the plans to separate the Ports and Railways Authority and prepare it for privatisation. (*See above.*)

l). Collisions. On 4/3/97 G12 No. 107 was working in Lod yard when it hit some wagons carrying wooden sleepers. The driver was injured, though not seriously, and was sent

home from hospital after two hours and advised to rest for one day. The loco was taken to Qishon, where repairs were almost completed by 16/3/97.

On 12/3/97 G12 No.111 was working with some bogie wagons near Ashdod when she hit a sand truck on a level crossing - the warning lights apparently not functioning. The lorry was severely damaged and its driver seriously injured. Loco 111 was also severely damaged, and awaits a decision as to its repair or withdrawal.

m). Retirements: "Harakevet" acknowledges the retirements of Ilan Falkov, the former P.R.O. and later Manager of the Railway Museum at Haifa East, and Yosef Kasuto, the Diesel Manager at Haifa Depot. Ilan especially has a deep and wide knowledge of railway matters in Israel, has authored a book in Hebrew on the subject, and has succeeded in "squirrelling out" odd bits of rolling stock recently.... We wish them both well.

n). Nahariyya Line. The new (rebuilt) stations were to be inaugurated at Qiryat Motzkin and Qiryat Haim on Wednesday 28th. May, in the presence of Haifa Mayor Amram Mitzna, Qiryat Motzkin Mayor Haim Tzuri, Ports & Railways Authority Chairman Azriel Feuchtwanger PRA Director-General Shores Lerer, and Israel Railways Director-General Amos Uzani. The new stations have cost of NIS 12 Million, and are designed to serve the Haifa suburban traffic as well as the Nahariyya service. The new timetable to be introduced in June should see a doubling of Haifa suburban trains. Each station has two platforms, linked by pedestrian tunnel, with a covered waiting area, and with free parking areas adjacent. Passenger traffic on the Haifa-Nahariyya line has increased by 17% over the same period last year.

o). Special. A special train ran between Tel Aviv and Jerusalem again on June 4th. ("Jerusalem Day"). For Jewish Agency staff and their families, it was billed as a "Centenary Train", and two of the coaches bore painted Zionist slogans. An actor portraying Theodor Herzl met it at Jerusalem station, in a horse-drawn carriage !

p). Bay City Rollers. Haifa Bat Galim station will soon have a new bay platform, on the west (station building) side, accessed from the north. Points were laid in on 8/3/97, and the platform was nearing completion at that date. It will form the terminus of the new shuttle service from Qiryat Motzkin from June, with the introduction of the new timetable then. Should a new large complex at Hof HaCarmel be built in the future, the shuttle will be extended southwards to there.

(Photo: Steve Tish:)



37:5. ROLLING STOCK NOTES.

a). The new IR diesel locos. From the French magazine "*Connaissssance du Rail*", No. 183, Sept. 1996, p. 42: (My translation): "The Ports & Railways Authority has ordered 18 diesel locos from GEC-Alsthom, of 3,200 hp., as part of its traction renewals programme. The contract is worth 32M ECU's (200M FF), and is for the supply of 6 locos intended for passenger traffic and 12 for freight; each loco will have a cab at each end, air-conditioned and equipped with modern performance-control equipment. The locos will be built at the works in Valence (Spain) (Valencia ?), and delivered from March 1998."

b). Passenger Stock Fates: Evyatar Reiter checked at Qishon Works on 18/3/97, and his report supplements information in 36:5:(g):

- (i): Awaiting scrapping at Qishon were 51, 52, 54, 57 & 58;
also 681, 682, 683, 685, 686 & 687.
- (ii): 604 & 605 have been scrapped after the fire at Haifa East.
- (iii): 615 is still "mothballed", awaiting a decision.
- (iv): 614 was possibly to be refurbished - later information shows it to have been scrapped.

As at 10/2/97 the only ex-BR Mk. II's in service were 684 & 688, which only work on Sundays and are otherwise kept in reserve); all the rest were at Qishon awaiting scrap.

In fact, Evyatar has sent a **full listing on the current IR rolling stock**, which amounts to:

O&K, Berlin: 53, 55, 56. **Total: 3.**

Carel Fouché, France: 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84.

Total: 14.

Carel Fouché, Languedoc, France: (ex-SNCF): 91, 92, 93, 94, 95, 96, 97, 98. **Total: 8.**

Esslingen, former railcar trailers: 111, 112, 113, 114, 115, 116, 117. **Total: 7.**

GEC Alsthom, Spain: 302, 303, 311, 312, 313, 314, 318, 319, 320, 321. **Total: 10.**

Boris Kidric, Yugoslavia: 601, 602, 603, 606, 607, 608, 609, 610, 611, 612, 613, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643. **Total: 39.**

BR Mark IIc: 684, 688. **Total: 2.**

Making a **grand total of 83 hauled coaches.** (*Compare with Cotterell, p.138*).

Of these, Nos. 53, 55, 302, 303, 610 & 631 are "Half-Power Coaches", and
Nos. 56, 616, 623, 632, 633, 637, 640 & 641 are "Power Coaches".

IC3 3-car dmu units: 7001, 7002, 7003, 7004, 7005, 7006, 7007, 7008, 7009, 7010, 7011, 7012, 7013, 7014, 7015, 7016, 7017, 7018, 7019.

At present, nos. 7001 & 7003 are in the USA on a demonstration tour.

c). Alsthom Push-Pull coaches: From Steve Tish : Push/Pull coaches on trial and at Lod are 301, 327, 315, 316, 317, 322, 323, 324, 325, 326. In service as at 6/4/97 were 303, 311, 312, 313, 318, 319, 320, 321. Delivery of the balance should commence around

July 1997, but this date could be put back. Nos. 302 & 314 are at Tel Aviv South for staff training.

d). Liveries. (i): Locos. Also in IC3 livery, and omitted from the list in 36:5:(e): 112, 113, 121 & 125. 107 was repainted at Qishon mid-April 1996 and adapted to work with push/pull coaches; however, its IC3 livery is not the same as all previous G12 repaints; it is more in the style of the G-26 repaints (so far this means 607 & 610), in that the red area is on the short part of the hood.

(ii) Coaches. 613, 636, 625, 629 were all returned from refurbishment at Ha'argaz, the last on 3/4/97: 624 was sent there 6/2/97. 624 & 631 were at Ha'argaz undergoing work as at 11/4/97 - only 609, 612 & 620 remain to be dealt with according to the contract.

Excluding the three due to be dealt with, and the two in works, it appears that only nos. 610 and 630 remain in the former livery, and these will be refurbished and repainted in IC3 livery at Qishon, together with some other coaches including generator Coach 53. No. 55 is in very bad external shape and will eventually be withdrawn, not being due for refurbishment.

e). Stored. G12 Bo-Bo 116 has been standing outside the Haifa diesel depot since around January, minus engine; the engine seized due to low oil pressure on a trip to Jerusalem, and since then it awaits a repair.

D. Loco Statistics. Thanks to Evyatar for a full round-up of all locos currently in service in Israel. They comprise: (As at 15/4/97):

<u>SAFB Bo-Bo:</u> 101, 103.	Total: 2.
<u>G12 Bo-Bo:</u> 104, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 120, 121, 122, 124, 125, 126, 127, 128, 129.	Total 21.
<u>T44 Bo-Bo:</u> T44.	Total: 1.
<u>G16 Co-Co:</u> 161, 162, 163.	Total: 3.
<u>G8 Bo-Bo:</u> 251.	Total: 1.
<u>G26 Co-Co:</u> 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615.	Total: 15.
<u>G26 Turbo Co-Co:</u> 701.	Total: 1.
<u>Esslingen 0-6-0:</u> 221, 227.	Total: 2.

Grand I. R. Total: 46.

In addition, Nos. 102 and 225 await decision as to their futures.

Industrial Locos: G18 Bo-Bo "001" at Rotem Alfert Negev.
ALCO SW-1000 Bo-Bo "007" at Rotem Alfert Ashdod Port.
GE 44-ton B-B "006" at Oron, Negev.
Deutz 0-4-0D at Kiryat Haplada, Akko.
Three "Vollert" Robot locos, owned Rotem, Negev - one at Har Tzin, two at Tzefa.

Total: 7.

In addition - one 60 cm. gauge 4wD Ruston & Hornsby LBT 432660 of 1959, at Kibbutz Ein Shemer.

37:6 NOTES & COMMENTS.

a). On 36:4:(h): Further notes from Sybil Ehrlich: The **Special "Women's Train"** (for women only !) was organised also by Na'amat, the "Pioneer Women's Organisation"; it ran on Tuesday Jan. 14th., to publicise the lack of public transport in the country; departure from Haifa Central was at 11.00., calling at all stations en route for ceremonies, arriving Tel Aviv Central at 13.00. There was no special return train. [*Ed. notes:* A one-way excursion must be an unusual event ? (Apart from those circular tours where each leg is made in one direction only). Even the Lourdes pilgrimage trains bring the healed passengers back, and they are not expected to walk home !]

b). On 36:4:(g): The Knesset Economic Committee Tour. Intrepid reporter Sybil Ehrlich missed the Women's Train (despite being the only Harakevet reporter qualified to join it) in order to join this tour. She comments: "We started at Tel Aviv Hashalom station at 08.00, with an explanation (for those who had never seen a station before ?), then a ride on the regular 08.32 IC3 to Rehovot. The front carriage was reserved for us, with refreshments. Then a bus laid on to Beersheba and the Negev, stopping at Oron, where we had a look at the phosphate works, and then to Har Tzin. (I was happy to get a chance to visit here - the entire area is closed off, as it belongs to the phosphate mining company.) We then drove down the Arava road along what we were solemnly assured would be the route of the line to Eilat. At various points we got out to stretch our legs and admire the view. Overnight was in the youth hostel in Eilat (single rooms !), then in the morning a tour of Eilat Port, including a tugboat cruise, and then a flight back to Ben-Gurion."

c). Sheva Berachot. "*Ma'ariv*" of 31/1/97 gave notice of "the wedding of the year" among the ultra-Orthodox community, which took place in Brooklyn during February. The wedding united two rabbinic family dynasties, as is the custom with the Haredim. There were 40,000 guests, 45 different fish dishes, 110 meat dishes and 150 types of salad, all served by 400 hired waiters. Total cost: \$3 million US. "In the small hours", reported *Ma'ariv*, "a miniature railway will carry round the hall 70 types of cakes, cookies and candies, and several hundred kilograms of fruit."

Your Editor was not invited, but is gratified to learn that at least one distant colleague will have spent his wedding night watching Lionel trains trundling around the tables.

d). On 36:5 (h): the Maribor "Boris Kidric" Carriage Works.

Your intrepid editor managed to visit Maribor in Feb. '97; the extensive works are spread over a wide area at the south-west side of town, on the south side of the line to Ruse and adjacent to a major locomotive workshops. About twenty minutes' walk from the main station, and just opposite The Maribor Studenci station. Work involves overhauls on Slovenian Railways (SZ) hauled stock, Fiat and MBB/Maribor joint German/Yugoslav diesel railcars and Polish-built e.m.u.'s. (Known as "Gomulkas", after the former Polish Foreign Minister !). Mr. Hransik the Director was unavailable on the day I visited, but a

very helpful secretary, Mrs. Krepfl, described to me a little of the situation. We were able to converse in German. She commenced work there in 1971, and recalls the construction of the last batch of IR coaches in 1972. However, some years ago during rebuilding works on the main office building an electrical fault led to a major fire which destroyed a large proportion of the firm's records. This meant desperate attempts had to be made to find out what records some of the customers still possessed. The main former Yugoslav railway archive is in Beograd (now Serbia), and inaccessible to the Maribor works which is in Slovenia.

However, she recalls that in the 1950's and '60's there were good links between the IR and the then-JZ "Direktion" in Beograd. (How ? Was there a former Yugoslav in the higher reaches of IR ? One should bear in mind that Israel has a population formed of immigrants from all over the world..... and Yugoslavia was at the time a "non-aligned" country; that means it would be willing to earn dollars for the Eastern Bloc, and would be prepared to provide very good value for the dollars spent ! So IR never placed any orders with British loco or rolling-stock works, until the purchase of some second-hand Mark 2's.)

She also recalled that the Syrians issued almost annual tenders during the period for coaches, and the Maribor works tried unsuccessfully every time to bid for this work. (This all went to East Germany). [See 35:6:(b):(ii), and below.] Was this the result of any boycott on firms that dealt with Israel ?

All exports of these coaches and the spare parts that were also sent for many years were handled by the export firm "Metall Kaljubjana"; when there was a Yugoslav boycott against Israel it became very complicated and difficult to despatch spare parts there.

So - we await possible further information with interest. The country's sidings are stuffed with quite modern freight stock, stored and unused, much awaiting scrap; the works are stuffed with coaches and railcars undergoing substantial overhaul; a lot of sleeping cars are lying around, redundant (there is a lot less long-distance through overnight traffic across Yugoslavia than there used to be !), and your Editor was amazed to find, rusting among trees and thorns outside the works compound, an 0-8-0T and an Italian 625-class 2-6-0.....

e). On 36:9 (C) Egypt. (ii): The Cairo Underground Metro Line 1: Alan Clothier suggests "Matasia" should read "Mataria" - "one of the locations where Joseph and Mary are reputed to have rested with Jesus while in Egypt ! - this heavily-used commuter line is usually referred to nowadays as the El-Marg line. The remains of a Roman villa were found at Mataria when excavations for the bridge to replace the level crossing NE of the station were dug in 1981 or thereabouts."

On (vi): Midan Station in Cairo: "Andy is partly correct in saying that Midan station was the original terminus for the Helwan line - it was built 1872 to serve the then eastern suburb of Cairo, being located at the northern end of a branch from El-Muwesla ('The Junction') on the line from Cairo Main via Abbassia to Tura and on to Helwan (the Tura to Bab el-Luq section was not built until 1890). Midan was certainly in use 1977-84 and a sporadic day-time passenger service operated to Tura and (I think) to Helwan Goods, for workers and Army personnel."

f). On 35:5:(g) and 36:7:(c). Withdrawals. According to Evyatar Reiter the withdrawal of GM G12 Bo-Bo 106 was definitely on 6th. March 1974, not 1973. This has been checked at the National Library. G12 119 was indeed withdrawn as from 19/9/73, but the accident which led to this withdrawal took place in December 1972.

g). Correction: On 36:1 & 36:5:(d): The 13.40 from Nahariyya to Tel Aviv is Train 57 and not Train 55.

h). On 36:5:(i): "Kronoim". This is an amalgam from two Hebrew words: "*Karon*" meaning 'coach' or 'wagon', and "*Manoa*" meaning engine, or (same root) "*Noa*" meaning 'to move'. According to the Even-Shoshan Dictionary this word is of Greek origin and appears also in the Talmud. Thus "*Kronoa*" (singular) / *Kronoim* (plural), meaning engined or powered coach(es) - a logical and satisfying combination of words. *Karon* is one of those words that doesn't change its gender on multiplication, even though it is one of those masculine words - like *Halon* (window) or *Pitron* (solution) that have the apparently feminine -OT ending. *Harakevet* is probably not the place for a Hebrew grammar lesson, so no attempt will be made here to explain the inconsistencies of masculine/feminine word endings nor the disappearance of certain vowels in English transliteration. There are other composite words such as this in modern Hebrew - e.g. "*Semanor*" for a signal - "*Saman*" = 'marker', and "*Or*" = 'light'. "*Rakevel*" is 'Funicular', from "*Rakevet*" ('Train') and "*Kevel*" : 'cable'. (Thanks to Paul Cotterell, Benjamin Ricardo and Sybil Ehrlich for this. Ed.)

i). On 36:5 (d/vi): Push/Pull Sets. The main grumble from drivers concerning the new push-pull sets is to do with the generators providing power for train lighting etc. There are two such generators, located in separate compartments immediately behind the cab of the driving trailer. One generator is operated one day with the second generator being used the next day. This arrangement evens wear on the generators and provides a back-up should one break down. There are no complaints when the generator in the compartment which is furthest from the driving cab is in operation. When the generator right behind the driver is in use, then the unfortunate driver has to endure a continuous monotone whine all through the journey which is very tiring. One would have thought it not beyond the wit of man to have provided, or to now provide, a simple and suitable noise retarder. After all, if Americans can now routinely build 3,000 hp. locos with "whisper cabs".....

j). Pullmans in Egypt. Those readers who followed the saga and are interested are referred to "*Locomotives International*" No. 37, March/April 1997, pp. 22-25, where George Behrend has published an illustrated and comprehensive article on this subject.

k). On 36:13. "Mazout". From Paul Catchpole, Editor of "*Locomotives International*" and author of a new book on the locomotives of Czechoslovakia, comes a note that some of the Deutsche Reichsbahn Class 52 2-10-0 "Kriegsloks" (War Locos) were modified to CSD Class 555.3; since they burned thick black oil, they were nicknamed "Mazutky" - after "Mazout".

37:8. OTHER MIDDLE EAST RAILWAYS.

a). **Iran.** A miscellaneous set of observations old and new:

(i): **Line Opening.** From "C.R.J." No. 109 (Spring 1997) p. 584: The opening of the Sarakhs line to Turkmenistan on 13th. May 1996 [see 34:6:(b)] took place in the presence of Iranian President Ali-Akhbar Hashemi Rafsanjani and Turkmenistan president Saparmourad Niasov; the line took three years to build, and the bridge at the border crosses the Tajan River.

In "La Vie du Rail" No. 2560 (4th. Sept. 1996) p. 22-27 is an illustrated article over the opening of this "Silk Route" link between Iran and Turkmenistan; the Iranian special train comprised a loco hauling a demotorised rake of French TurboTrain stock, now rebuilt into a luxury train set; the Turkmenistan train comprised blue double-Co-Co No. 16980484 on Soviet-style large square-profile ribbed-sided coaches.

(ii): **New Locos.** "Railway Gazette International" (quoted in C.R.J., op. cit., p.578) states that the Iranian Islamic Republic Railways have ordered 12 electric SS8 passenger locos from China, for 1997 delivery, [See 35:6:(f):(vii)] and that the Teheran Urban and Suburban Railway Co. (i.e. the new Tehran metro) has formally signed a contract to buy 217 e.m.u. cars from Changchun works in China for delivery by September 1998.

(iii): **Carriages.** Not "news", but recently noted in "Eisenbahn Kurier" for 3/96, p.42, in an article about Bautzen carriage works in the former DDR: a reference to a "a large contract for Passenger Coaches (including restaurant Cars) for the Iranian State Railways". Does anyone have further details ?

(iv): **Danish Diesel Multiple Units:** In "Eisenbahn-Revue International", 3-4/1996, (a Swiss magazine) p.111, is a note on Danish Railcars for Iran. My translation: "The two "APO-Lyn" railcar sets ordered by the Danish State Railways in the 1980's have now found a new home in Iran. Originally they were intended to replace the "Lyntog" [i.e. "Lighting Trains". Ed.] streamlined diesel railcars which were themselves modelled on the German VT11.5/VT601 sets. The 5-car sets however proved to be too inflexible for the Danish "Lyntog" network, so that a series production order never came about. In Iran the two sets will be used mainly on the 1,200 km. long line from Tehran to Mashad. Before this they will be thoroughly overhauled and modernised in Aarhus works, and made fit for their new environment."

(v): **Wagons.** And yet more. This is also not "news", but as information on Iran etc. is so hard to come by, anything which comes to light (even in second-hand shops !) will be noted in "Harakevet" "for the record".

In "Eisenbahn", an Austrian magazine, for January 1976 is a note (p. 11) regarding "SGP Goods Wagons for Persia". "In November 1975 the first ten of 500 four-axled covered goods wagons for grain transport ordered from the Graz works of SGP [Simmering Graz Pauker. Ed.] were completed and despatched to Persia. Following the wishes of the Iranian State Railways the delivery schedule has been speeded up; SGP should be completing 50 wagons per month, and the 500 ordered vehicles should be all ready by August 1976. The vehicles are 16.77m. long, with 94 cu. m. loading area and 56t. capacity, designed for a maximum speed of 100 km./h. As a special requirement for the transport of grain, they have loading hatches in the roofs."

A later issue (Feb. 1976, p.23) discussed that the wagons should, under normal UIC guidelines, be coded "Gags" - "G" for "Gedeckt", i.e. covered Goods Van, "a" for bogie, "g" for "Getreide" (Grain) produce, "s" for "Schnell", able to travel at 100 km./h. But for some reason the Iranian Railways had requested that the second "g" be omitted, and they were coded "Gas".

In "Eisenbahn" March 1976 p.71 is a picture of one of these SGP wagons on display at the Vienna Spring Fair. They are mounted on UIC Y25Cs welded bogies, have two sliding doors per side, and are 16.77m long over buffers.

(vi). **Nohab.** In "Eisenbahn" for July 1965, p. 143, is an article on the Nohab locomotive works on Trollhättan, Sweden; it is illustrated with a photo of a 2-8-2 2-cyl. superheated loco for Iran, one of - according to the text - 30 locos and 300 wagons built for Iran in the 1930's. At the same time the firm supplied Turkey with 100 2-cylinder locos, 1,500 wagons, four snowploughs and 900km. of rails - the rails being sub-contracted to two Danish firms owing to the urgency of the order.

(vii). **New/Old Tramway.** According to the Swiss "Eisenbahn Amateur" 10/96, p. 625, the German company "Rheinconsult", a daughter-company of the Rheinbahn, is planning and constructing a surface "Stadtbahn" at Mashhad - a city of 2.2M inhabitants. Stock used will be second-hand from the Rheinbahn, (based in Düsseldorf?) and the first vehicles have been already adapted and delivered.

(viii). **A Tale of Suspense.** Also from "Eisenbahn Amateur" 2/96, p. 75, is a report that a 100 km. long cable way is being planned from Tehran to the Caspian Sea, with cabins capable of carrying an 8t. load. The scheme is aimed at transporting excursionists.

b). **Jordan. (i): Hedjaz Locos, Live and Stuffed:** Also *C.R.J.* 109, p. 582f: "In Nov. 1996 the loco situation at Amman was that Jung 2-8-2 No. 51 and HSP 2-8-2 No. 71 are in working order, and the 2-6-2T No. 61 is in fact No. 63, as the real No. 61 is now on display at Al Arbeit University, Ma'fra, north of Amman; Other locos now plinthed and on display are Nippon 4-6-2 No. 84 at Jordan University, Amman, behind the Faculty of Medicine, just below the Faculty of Engineering & Technology, and HSP 2-8-2 No. 73 at Ma'an station." (See below.)

(ii): **Charter Operations - an Inside View.** Michael R. Holt spent a brief time in Amman in late January / early February 1997, and reports :

"Ostensibly we were invited to assist in the restoration and maintenance of the steam locomotives, but in the short time available, in practice little could be achieved beyond some cosmetic work in anticipation of a tourist charter steam working that was to take place on 2nd. February over the 37 km. from Amman to El Jiza, just beyond the Queen Alia Airport. The fact that the end of the Moslem fast of Ramadan was also approaching did not help activity either !

The chosen locomotive for the run was No. 71, a 2-8-2 built by the Belgian firm of Forges Usines et Fonderies of Haine St. Pierre, (2144/1956), and preparations got under way the day before when the loco was extracted from the two-road shed by one of the 1976 G. E. diesels (No. 40213) and turned on the hand-operated turntable to ensure that the diesel oil and compressed air connections were adjacent to the relevant supplies

for steamraising purposes. The water tank was filled and other odd jobs including replacing a defective gauge glass blowdown valve were undertaken.

The following day the fire was lit at about 7.30am., but progress was slow as, being the "off" season, it had been some weeks since the loco had last steamed; meanwhile one of the diesels marshalled the coaches for our train and prepared to depart for Syria with half a dozen freight vans and to collect the weekly "International Train" due to arrive back in Amman that evening. The Mikado was turned again to face south and positioned by the fuel oil tanker where steam was used to warm the oil so that it could be pumped into the tender, again a slow process as the weather was quite cold - the consistency of this stuff is akin to thick treacle. Meanwhile the train was being furnished with Bedouin carpets and enough liquor and food to excite comment - the tour party was only eight strong ! - not to mention a five-piece band !

We eventually coupled up to our train and departed a mere 30 minutes behind time. The climb to the south from Amman is formidable - a ruling gradient of around 1 in 50 with curves down to 100 metres radius, and initially No. 71 made steady if not spectacular progress. However, eventually the light load of three coaches, totalling less than the weight of the locomotive itself, proved too much and it was necessary to stop for a "blow up" just beyond the spectacular Amman viaduct and tunnel. The tubes / stays / foundation ring were leaking in spectacular fashion, which did not help the problem, and the legendary thick black smoke was present in abundance suggesting that combustion was somewhat less than perfect. The wear in the motion had to be seen (and heard) to be believed. The local residents were doubtless relieved when after some 20 minutes we moved off again, and we made the summit at Kassir with no further difficulty greater than a disagreement with a large oil tanker in the main road crossing, possession of which was resolved only by a near fight between the respective drivers ! The remainder of the run was uneventful apart from the customary Bedouin "attack" for the benefit of the charter party; a participant was carried off to their camp alongside the track and doubtless only released on purchase of copious quantities of souvenirs. At Jiza the party left us; we ran round and returned tender first to Amman, again requiring a stop on the equally steep climb between Libban and Kassir for No. 71 to regain its breath. The one part of the locomotive that was in fine fettle was the chime whistle (albeit carried at a peculiar angle) - a deeper tone than we are used to in Britain - and an abiding memory will be the echo off the valley sides as we ground around the sharp curves down the hill in the failing light.

The following day we took the International Train back to Syria with G. E. diesel No. 40212, a routine journey punctuated by forcing a passage through the Market at Zerka. My colleague (Bob Jackson) having an Israeli stamp in his passport, it was deemed imprudent to proceed beyond Mafrak, so the return working was awaited, enlivened by a little gentle platelayer's trolley racing along the station loops ! The previous day's vans formed the train; it is encouraging to see some freight working hanging on.

Of the surviving steam locomotives, only three are currently in working order: No. 71 (just), No. 51 (Jung 2-8-2 12081/1955), and No. 61 (HSP 2-6-2T 2147/1956.) Why No. 71 was used in preference to No. 51 on the charter was something of a mystery as the latter is apparently in rather better condition, No. 61 does not normally leave the confines of Amman, and is in infrequent use. Around the shed are five locomotives out of use: No. 23 (Robert Stephenson & Hawthorn 2-8-2 7433/52); No. 82 (Nippon Sharyo 4-6-2

1610/59); No. 81 (Nippon Sharyo 4-6-2 1609/59); No. 53 (Jung 2-8-2 12083/55), and tucked away in a shed round the back, another of the HSP 2-8-2's, either 72 or 73 (2145 or 2146/56). No. 23, popular with British enthusiasts and Hedjaz staff alike, is sidelined with loose driving wheel tyres, but is otherwise workable; certainly crude efforts to secure the tyres by welding are visible. On a disconnected siding about a kilometre north of Amman station are the other two R.S. & H. 2-8-2's, Nos. 21 and 22 (7431 & 7432/52), although one is paired with a tender showing No. 23 in faded numerals, and also another 2-6-2T, possibly No. 62 (HSP 2148/56). These three locomotives are very much in "Barry" condition, heavily cannibalised. nearby, on a bogie flat was a full wheelset from one of the Japanese Pacifics, either 83 or 84 (Nippon Sh. 1611 or 1612/59). Finally, another of these good-looking locomotives is to be found at Ma'an, headquarters of the Aqaba Railway Corporation: No. 85 (Nippon Sh. 1613/59) is intended to form the nucleus of a display relating to the history of the Hedjaz Railway in the old station area. They are of interest in that they were built in 1953 for Thailand, but not delivered, being supplied as American aid to Jordan in 1959 and re-plated that year.

Identification of some of the Hedjaz locomotives is difficult : No. 82 stands by the Amman turntable large as life, whilst a Japanese cab also numbered 82 is grounded and in use as a shed to house the fuel oil pumping gear !

We came away with the impression that the future of the Hedjaz Railway in Jordan is reasonably secure, but the steam operation hangs by a thread; the only steam driver, Fathallah Al-Qaisi is, shall we say, not as young as he used to be, and there seems little expertise or enthusiasm for passing on his skills. The shed at Amman is only equipped for modest mechanical work, although there is a wheeldrop and wheel lathe, but heavy boiler work would need to be contracted out. The Hedjaz works at Cadem, Damascus, is believed to remain fully capable of steam overhauls, but regrettably the political climate between Syria and Jordan makes this rather unlikely at present.

We are much indebted to the Jordanian Authorities for facilitating our visit and providing us with every courtesy; for our part we have attempted to convince all concerned of what a treasure the Railway is and a potential asset to the expanding tourist scene. Some comparatively modest investment would safeguard the operation for years to come; conservation rather than preservation should be the objective. Meanwhile, participation in the various charters will help to keep the Hedjaz Railway in steam."

c). Saudi Arabia. German Locos. In an "*Eisenbahn Journal*" special book on the German DB Class V200 Diesel Hydraulic B-B's ("*Die Baureihe V200*", Special 5/93, ISBN 3-922404-46-4) are a couple of pages (pp.72-3) devoted to the service of some of these locos in Arabia: The Editor's translation:

"In May 1977 the construction firm Heitkamp gained the contract to rebuild and renew 105 km. of the 565 km. line from the Persian Gulf to Riyadh. The contract had to be completed within one year. They bought [DB] 220-021 (which they renumbered No. 1) and 220-054 (No. 2), and both were despatched by sea in August 1977. It soon became clear that two were not enough, so in January 1978 Heitkamp acquired 220-024 (No. 3); 220-046 (No. 4); and 220-069 (No. 5), and these arrived in Saudi Arabia at the beginning of April after a four-week sea journey.

Sandstorms made life difficult for these machines. In spite of filters and centrifuges against dirt that had been built in, there were many engine failures; in the month of April 1978 alone all five were affected. So Heitkamp acquired two more - 220-006 and 220-035, but left the locos in Germany, bringing only the engines (by lorry) to the construction site.

In spite of further major problems, including the total loss of No. 2, the works could be completed in 1979 as per contract. The locos were then sold to the Greek building firm Archirodon, based in Panama. 220-006, which had stayed in AW Nürnberg [*the loco works. Ed.*] received another engine, and was later sold to Italy." According to Horst Klein, who is writing a book about former DB locos sold overseas, the locos sold to Greece were not in fact delivered there.

There are two accompanying colour photos; one shows No. 1 being loaded onto a ship at Bremer Überseehafen at the end of August 1977; the second shows "Heitkamp 2" on a train of 19 ballast hoppers somewhere in Saudi Arabia in 1978. The livery is shown to be not dissimilar from the early DB one, with red lower sides and light grey (lighter than the original) on the upper sides. Around the centre of each side is a white oblong "lozenge" with the word "HEITKAMP" in red, and the number above it; on the front is a triangle with the letter "H" and a large searchlight.

d). Syria.

In 35:6:(b):(ii) details were given of three Special Saloon coaches delivered to the CFS by the Bautzen Works in the then-DDR. I have recently come across an article in "*Eisenbahn Illustrierte*" No. 11 for Nov. 1993, pp. 18-21, by Götz Gleitsmann, in which the "Y/B" coaches of the Deutsche Reichsbahn are discussed. These were among the standard long-distance passenger coaches of that system, and built between 1966 and 1970 in different layouts for different purposes and for different railway systems of the former "eastern Bloc".

From the table given it appears that the CFS of Syria took delivery of three versions, although numbers are not given:

The 9-compartment First (A), with 54 seats;

The (AB) Composite, 2-compt. First + 8 compt. 2nd., giving 12 + 64 seats
respectively, built ONLY for the CFS;

The 10-compt. 2nd. (B), seating 80.

Incidentally, further articles in the series "Waggon Archiv" regarding coaches built to DR designs have been located in "*Eisenbahn Illustrierte*" for Jan. 1992 (pp. 26-29), Dec. 1993 (pp. 19-22) & Jan. 1994 (18-21). This is almost certainly not complete, being based on a survey in a second-hand shop in Vienna! Further information on CFS rolling stock would be appreciated.

e). Lebanon. Preservation ? A scheme is gathering force in France to rebuild a short railway at Pierrefonds Castle near Compiègne, Département of Oise, and purchase some of the derelict locos and rolling stock currently lying at Beirut. If anyone can offer any help, please contact:

Christian Labetoulle at 10, Allée des Eboutures, 60580 Coye La Foret, France.

37:9. REBUILDING THE HEDJAZ RAILWAY.

From Brian Baxter at the R.E.M.E. Museum at Arborfield near Reading has come an old copy of "*The Geographical Magazine*" for October 1966 (price 3s 6d !); on pp. 422-433 is an article by William Carter (described as "a photographer and writer") entitled "The Pilgrim Railway", and providing some good contemporary photos (though difficult to reproduce here) and a description of the rebuilding project of the 1960's described by Mr. E. Ingerslev in 28:24, with notes in 32:7 (c).

"In 1908, the completion of the Hejaz Railway was a constructional miracle. In 1918, its ruin was a military triumph. By 1966 - or 1970 - or later - the successful reconstitution of the Hejaz Railway may represent something of an economic and political wonder. And the whole concept rests on a religious base.

Like a stitch in the side of Arabia, the old line runs south from Damascus to Medina. Its basic purpose has been, and will be, to transport pilgrims to the holy cities of the Muslim world. But it was (before T. E. Lawrence and others ruptured it) a military and political stitch as well as a religious one: and now, in time, the railway may add a new thread to the socio-economic fabric which is painfully sewing isolated Saudi Arabia to the outside world.

For twelve centuries, of course, Arabia's one great opening to the outside has been the pilgrimage, and its residents have never hesitated to reap as great a profit as possible from it. The rigours and dangers of the trip - bringing hordes of the faithful by almost every conceivable means of transport from as far away as Indonesia - are legion. Until very recently, each year saw thousands die on the way, from exhaustion, disease, thirst, hunger and murder. But Muslims consider death on the *hajj* desirable, because it is believed to bring almost certain entry to paradise. Poor families' fortunes are squandered gladly so that one member can make the trip; and there has never been any lack of cynical exploiters - and outright robbers - along the way to make sure that those who do return home do so with empty pockets.

By the late 19th, century, there were two main rallying points for the severe journey across the trackless northern desert to Medina and Mecca. From Damascus and from Cairo, great camel caravans would depart, with military escorts to guide the pilgrims, protect them against the marauding raiders, show them precious watering places - and sell them the water.

The first known suggestion for a pilgrims' railway was put forward in 1864, but nothing came of the idea. However, in an effort to counter the power that accrued to Britain after the opening of the Suez Canal in 1869, the Germans hatched an ambitious scheme for the 'Germanization' of the Middle East. This plan brought them into closer association with the Turks, whose Ottoman Empire had ruled Arabia, Syria, and Mesopotamia for centuries. Eventually a whole Middle-Eastern rail network was planned. The Sultan of Constantinople saw a chance of revitalizing his withered power: a pilgrims' railway under Turkish control could tighten his hold on the sacred cities, and thereby strengthen his influence throughout the Islamic world. The Germans, for their part, foresaw a railway that would stretch not merely to Medina and Mecca, but all the way to Aden.

Work got under way at the turn of the century. A Turkish engineer, surveying the ground in 1900, wisely decided to follow the centuries-old camel caravan route which not only was a sensible way through the mountains but assured regular water-holes, a factor even more important now that the steam-engine, a thirstier consumer than man or camel, was coming. The old route was also far enough inland to be out of range of the British fleet.

It was an area of blistering heat, freezing winds, devilishly wind-whipped sand, flash floods and no access except by the line itself. Human problems were also quick to appear. Scorning manual labour, the only local residents, the Bedouins, not only refused to work but were actively hostile to the project, as it threatened the profits they made out of the pilgrims.

One by one the problems were met. A German engineer named Messner (sic) was put in charge and proved himself something of a minor genius. Since the locals would not budge, 5630 Turkish troops were sent to do the construction work. The grade and the track were laid together, so that the job could feed itself by rail. Local stone formed the station-forts and the 1970 culverts and bridges. A unique 105 cm. narrow gauge track was devised so that no enemy's rolling stock would fit it. [*An interesting but incorrect explanation. Ed.*]

In 1908, the track, of over 800 miles, from Damascus to Medina was opened to full operation. A pilgrimage of forty days by the swiftest camel was reduced to three days. The same year brought the Young Turks' Revolt in Constantinople. This, combined with the intense hostility of the southern tribes, led to the abandonment of plans for extending the railroad on to Mecca.

The most famous chapter in the Hejaz Railway's history, however, was not its construction but its interruption. This was occasioned by the British-backed Arab revolt against the Turks during the 1914-18 War. In itself, the railway was an easy target, because of the sanctuary of the surrounding hills, the Arabs' control of the countryside, their greed for booty, and the Turks' limited military competence. Reaching the line from the coast, across inhospitable terrain, was more difficult; but getting Arab tribesmen to forget their own jealousies long enough to co-operate effectively was the really hard part. The plan was not to destroy the railway completely, but to harass it, so that the Turkish forces would remain dispersed and preoccupied, trying to keep the line open.

Eventually, however, it was put out of service and captured. Then, in 1918, as the Allies moved up towards Damascus, they hurriedly repaired the northern end of the railway in order to supply their own assault. Thus, the northern third, between Damascus and Ma'an, was reopened, and has remained so ever since.

It was not until well after Jordan and Syria received full independence that reconstituting the Hejaz Railway was taken up in earnest. Jordan, Syria, and Saudi Arabia appointed a "Higher Committee" of four members from each country to direct plans, and each nation pledged one-third of the estimated cost of between eight and ten million pounds. Wisely, the committee members were not government officials. Less wisely, perhaps, they were not particularly wealthy and were to be paid handsomely in various ways until the project was finished.

In 1956 the Committee got around to awarding an American firm the contract to make the preliminary survey. Eventually, a building contract was awarded to a consortium of

three companies - Saudi Arabian, Spanish, and Japanese - but the contract was finally cancelled with some considerable financial loss.

Next, the job was taken on by a British consortium, Alderton Construction and Martin Cowley, which began work in March, 1964, nearly eight years after the preliminary survey had been made. The German firm of Kurt Becker was hired to do another survey and supervise the engineering. Predicting completion by autumn 1966, Cowley and Alderton assembled a predominantly American crew of track layers and set out.

But delays, political complications, and financial troubles soon appeared. The provision of International Guarantees by the Committee was delayed so that no rail track could be purchased. In March 1965, Cowley and Alderton were obliged to dispose of the services of the American crew as there was no track-laying for them to do. In July 1965, the new and forceful boss, Mr. Rex Saggars, was appointed. Instead of confining itself to broad policy decisions, the Committee hampered progress by being too narrowly watchful. Monies were constantly disputed and held up, and special-interest pressures were never far off-stage. Confidence ebbed on all sides.

There began to be a turnover in disillusioned personnel. Subcontractors, poor in capital reserves, were stretched to breaking point. The young Cowley company had over-extended its plant on other jobs as well; the credit squeeze in the United Kingdom was more than the company could bear, and in 1965 it fell into receivership. Since the failure of the Hejaz project might have political repercussions, the very quiet hand of the British Government is thought to have begun to stir. The receivership accountants, Wheawill and Sudworth, moved rapidly to reorganise financial matters. A determined and careful effort to get matters moving again was begun.

In the spring of 1966, creditors were still understandably wary, but there were encouraging signs that the job, badly slowed for many months, was slowly picking up momentum. Frozen funds were beginning to come unstuck. Among the three governments paying for the job, there was a movement to take at least some of the fussy decision-making out of the sluggish hands of the Committee.

A visit to the Hejaz Railway today is an unforgettable experience, especially if one has the very unusual opportunity, as I had, of traversing the reconstruction project from bottom to top - Medina to Ma'an. Non-Muslims, of course, are not allowed within the city limits of Medina, burial place of Mohammed. Seen from the outskirts, the great spires of the mosques tremble like reeds in the desert heat. Gaudy bus- and truck-loads of pilgrims rumble steadily in on the good asphalt road from the north. During the *Hajj* season, aircraft bearing the wealthier faithful drop from the skies like flocks of migratory birds, to settle at Medina's modest little airport. The improvement of travel conditions has not awaited the redevelopment of the rail link. For the Saudi entrepreneurs have recently discovered more sophisticated ways of luring pilgrims than the old Bedouins knew.

If and when it opens, the railway's operation will probably be subsidised to keep the prices of tickets reasonable, and to ensure that the volume of pilgrims continues to swell; already, over a million of them arrive annually. By western standards, the average pilgrim's journey and his accommodation are still very crude; but extreme hardship, and horrors such as cholera epidemic, are now rapidly declining.

The railroad grade stops at the city limits: Muslims themselves will have to extend it into town and refurbish the old station which, they say, contains four original locomotives.

Heading up the line by Land-Rover, one quickly loses sight of the asphalt road and is surrounded by jagged hills. The barren gravel is pocked by black, basalt boulders, and one is more and more made to think not of conventional Arabia but of the moon.

One after the other, the blockhouse stations appear, averaging only eleven miles apart. In general they are of a standard design, two storeys of solid stone ringing a small, open interior. Instead of windows, they have riflemen's slits. Occasionally there will be a small Turkish graveyard, or the skeleton of a wind-pump, or a string of old flatcars, long since stripped of their wooden planks by the Bedouins, or a great heap of old iron railway parts. Just as occasionally will appear, gaunt grazing camels, a fox, a snake, vivid birds, two or three Bedouins, a boy tending sheep, and a handful of Yemeni labourers at work restoring a culvert. The tough, wiry Yemenis have emigrated by the thousand to work in Arabia. The Saudi and Jordanian subcontractors are nearly as hard on them as the merciless summer sun that has reached 130° F. in the shade, and the freezing, sand-whipping winter gales.

The endless lurching and heaving of the cars takes its toll, as axle-bolts crack, springs snap, tyres blow out, radiators shiver loose, and gearboxes pack up. During stops for rest or photography, or to extricate the car from a sand pit, if the time coincides with one of the five times prescribed, the Muslims will face towards Mecca in prayer. Radio contact is established with company stations, and the inevitable coffee pots are brought out.

Evening brings the civilised amenities of a company caravan camp. No alcohol - this is Saudi Arabia - but high humour, good food, and the special gossip of seasoned construction men. The small questions are physical, the great ones inevitably political. Will next month's scheduled funds be forthcoming? What effect on the project has the recent Syrian coup really had? There are plenty of opinions, few answers, and a certain weariness veiled with humour.

In the morning, everyone is up early, for beating the sun is the secret of getting work done in the desert. A short side trip to virtually-unknown ruins discovers another wonder as well: an open stream with fish, running by a khan or fort. The stream dries up in the summer, and the fish or their offspring evidently hibernate in the mud. The khans must have been important waystations for early *hajjis*, and the remote Hejaz country is full of such untouched archaeological material.

Gradually, to the north, the granite, basalt and porphyry rocks grow increasingly varied in pink, orange and green tints. There is mineral wealth in these unexplored mountains, and a number of abandoned mines. A team of French and German geologists encountered on the way become evasive when asked if they have found anything. The real problem, of course, is the high cost of mining and hauling whatever is found. The railway may help in this respect.

The whining cars lurch on, and stories circulate about the bones and skulls found in some of the stations during the early months of the job. Old ammunition and bricks of gun-cotton were discovered, and one station blew up from buried explosive. A legend persists that a great treasure-chest of Turkish gold, abandoned by the fleeing army in 1917, is buried somewhere just off the grade.

After several days, the expedition arrives at the little town of Al' Ula. Asked "What are you?" a small boy replies, not that he is a Saudi Arabian, but that he is a "Najd" - a central tribal group. Many Arabs still lack a sense of national identity, and the Saudi

Government can expect the railway to further the slow progress of drawing the far-flung nation together politically.

Wedged narrowly between strange red cliffs, Al' Ula is a lovely, green-palmed oasis town famous for its dates and lemons. Many roofs are spanned with old Hejaz rails, under the mud clay. There are electricity, schools, a few trucks and many bicycles - all signs, in any remote Middle Eastern town, of an oil-exporting, hard-currency nation.

North of Al' Ula, the strange cliffs become stranger and vaster, until one reaches an awesome area known as "Wadi Hashish". Very few Westerners have ever seen this vast fantastically shaped series of canyons. At the northern end lies Mada'in Salih, where hundreds of huge, elaborately portalled tombs are carved into the cliffs. An odd little race of people, the Nabateans, once lived here, until the drying up of their water supply forced them north and they settled at Petra, where they carved similar cliff tombs.

All the old track has been taken up now; the chain of neatly piled sleepers and rails extends right up to Ma'an. Work on bridges, culverts and earthmoving continues at a slower pace as the companies and governments try to sort out the economic and political bramble. A crucial step lies just ahead: the release of funds for the major purchase of new rails and sleepers. A recent announcement stated that a new Consortium composed of Alderton Construction, the newly formed Martin Cowley Railway Construction Company and the Consolidated Contractors Company (S.A.L.) of Lebanon has taken over. [*S.A.L.* = "*Société Anonyme Libanais*" ? Ed.]

There does seem to be a new vigour on the part of the builders. On the governments' side there is the abiding desire that the project succeed, the kind of persistence that only the religious background, perhaps, could keep up so long in the face of so many difficulties. Instead of costing between eight and ten million pounds, as originally estimated, the recommissioning of the Hejaz Railway is likely, in the end, to come closer to £15,000,000, exclusive of rolling stock.

If and when it succeeds (and a new target for the completion date - April 1968 - has just been announced), the distance from Ma'an to Medina will be covered in about a day and a half, which is about half the time taken by the old steam engines. During the peak *Hajj* season, twelve trains will carry 15,000 passengers each day. The vicissitudes of rebuilding the Hejaz may, by then, have eroded everyone's patience - except the pilgrims'."

37:10

THE 1939 CIVIL SERVICE LIST.

Courtesy of Stephen Bank of the Spiro Institute comes a copy of several pages (pp. 281-286) from the "Government of Palestine Civil Service List", revised as to 1st. Jan. 1939, printed at the Government Printing Press, Jerusalem, and priced at 150 Mils ! This detailed list was apparently only published from 1931-1939, before and after this only "Staff Lists" being published; these contained information on who held which post and his seniority and pay grade, but no biographical information.

It is hoped that these pages will copy "as they are", as they are already in A5 format.

PALESTINE RAILWAYS.

Cecil Richard Webb, O.B.E., M.C.; born 17th August, 1887.
General Manager. £P.2000.

1930...12 May		Appointed General Manager.
1930... 1 Sept.		Appointed Member of the Standing Committee for Commerce and Industry.
1932...21 July to 20 Oct.		On vacation leave.
1934...16 June to 30 Oct.		On vacation and commuted half pay leave.
1936...27 July to 9 Nov.		On vacation and commuted half pay leave.
1938... 6 July to 12 Oct.		On vacation leave.

North Eastern Railway, 1904-14; Asst. Traffic Manager, Uganda Railway, 1914-19; Military Service 1914-19; Traffic Manager, Tanganyika Railway, 1919-23; General Manager and Traffic Manager, Sierra Leone Railway, 1923-30.

Lieutenant-Colonel George Murray Campigli, M.C., M.I. of T.;
born 21st July, 1890.

Assistant General Manager, Grade F, £P.850-50-1100, plus
£P.150 Expatriation Allowance. Salary, £P.1100.

1920... 1 July		Appointed Assistant General Manager.
1921...24 Nov. to 21 Mar. 1922...		On vacation leave.
1922... 2 July to 8 nov.		Acting General Manager.
1923... 1 Oct.		Appointed Asst. General Manager and Superintendent of the Line.
1923...19 Dec. to 18 Jan. 1924 ...		Acting General Manager.
1924... 9 Dec. to 8 Apr. 1925...		On vacation and commuted half pay leave.
1925... 9 Apr. to 12 Apr.		On half pay leave.
1 July		Regraded to Grade E.
1926... 1 Feb.		Appointed Member of the Institute of Transport.
6 Mar. to 14 July		Acting General Manager.
4 Aug. to 3 Nov.		On vacation leave.
4 Nov. to 21 Jan. 1927...		On half pay leave.
1927...22 Jan. to 29 Apr.		Acting General Manager.
1928...19 Mar. to 16 Apr.	" " "	
12 May to 9 Oct.....	" " "	
1929...28 June to 11 May 1930...	" " "	
1930... 3 July to 16 Nov.		On vacation and commuted half pay leave.
1932... 1 Apr.		Regraded to Grade E.
21 July to 20 Oct.		Acting General Manager.
1933...20 July to 16 Aug.		Acting General Manager.
18 Aug. to 17 Nov.		On vacation leave.
18 Nov. to 17 Feb. 1934...		On commuted half pay leave.
1934...12 to 20 Apr.		Acting General Manager.
16 June to 30 Oct.		Acting General Manager.
1935... 6 Aug. to 13 Oct.		On vacation leave.
1936...22 Jan. to 1 Feb.		Acting General Manager.
1 Apr.		Title changed to Assistant General Manager.
27 July to 9 Nov.		Acting General Manager.
1937...19 Aug. to 5 Sept.		Acting General Manager.
1938... 3 Feb. to 18 June		On vacation leave.
6 July to 12 Oct.		Acting General Manager.

1922...16 Oct.	.....	Title changed to Assistant Chief Mechanical Engineer.
27 July to 22 Nov.	.....	Acting Chief Mechanical Engineer.
1923...12 Dec. to 11 Mar. 1924...		On vacation leave.
1925...12 Oct. to 4 Feb. 1926...		Acting Chief Mechanical Engineer.
1926...19 Apr. to 3 Aug.		On vacation leave.
1 Oct.	.....	Regraded to Class 2.
1927...19 July to 13 Oct.		Acting Chief Mechanical Engineer.
1928...12 May to 9 Oct.		" " " "
18 Oct. to 17 Jan. 1929...		On vacation leave.
1929...18 June to 11 May 1930...		Acting Chief Mechanical Engineer.
1930... 3 July to 18 Aug.		" " " "
		Appointed Inspector under the Fencing of Machinery Ordinance, 1928.
19 Aug. to 3 Jan. 1931 ...		On vacation and commuted half pay leave.
1931...31 May to 14 Oct.		Acting Chief Mechanical Engineer.
1932... 1 Apr.	.....	Regraded to Grade H.
1933... 2 Aug. to 1 Nov.		On vacation leave.
1934...25 May to 18 June		On vacation leave.
20 June to 31 Oct.		Acted as Chief Mechanical Engineer.
1935... 2 Aug. to 28 Oct.		On vacation and commuted half pay leave.
1936... 2 Aug. to 16 Nov.		Acting Chief Mechanical Engineer.
1938...28 July to 28 Nov.		On vacation leave.

Military Service 1916-20.

John Patrick Graham; born 5th May, 1889.

District Engineer, Haifa. Grade H, £P.550-25-750, plus £P.100 Expatriation Allowance. Salary, £P.750.

1920... 1 July	.....	Appointed Assistant Engineer, (Capital Works).
1921... 7 July	.....	Transferred to Kantara.
1922... 1 Apr.	.....	Promoted to District Engineer.
1923... 1 May	.....	Regraded to Assistant District Engineer, (Sinai Military Railway).
1924... 7 Mar.	.....	Transferred to Lydda.
12 July to 11 Oct.		On vacation leave.
12 Oct. to 14 Oct.		On half pay leave.
1926... 9 Aug. to 8 Nov.		On vacation leave.
1 Oct.	.....	Regraded to Class 2.
1928...13 Jan.	.....	Transferred as Divisional Superintendent, Amman.
1929...24 Mar.	.....	Transferred to Haifa.
28 Mar. to 27 June		Acting Engineer, Ways and Works.
8 July to 9 Oct.		On vacation leave and half pay leave.
22 Oct.	.....	Transferred to Haifa.
1930...15 Aug. to 24 Apr. 1933...		Acting Resident Engineer New Locomotive Workshops.
1931...10 June to 24 Oct.		Acting Chief Engineer and Resident Engineer, New Locomotive Workshops.
1932... 1 Apr.	.....	Regraded to Grade H.
28 June to 7 Nov.		On vacation and commuted half pay leave.
1933...25 Jan. to 24 Apr.		Acted as Chief Engineer and Resident Engineer, New Workshops.
25 Apr.	.....	Reverted to District Engineer.
1934... 9 July to 21 Nov.		On vacation and commuted half pay leave.
1935...11 June to 20 Oct.		Acting Chief Engineer.
1936...31 Mar. to 25 June		On vacation and commuted half pay leave.
27 Nov. to 26 Dec.		Acting Chief Engineer.

Percy Cecil John Baker; born 6th November, 1888.

Superintendent of the Line, Haifa. Grade F, £P.800-25-1000,
plus £P.100 Expatriation Allowance. Salary, £P.1000.

1920... 1 July	.....	Auditor, Grade III.
1922... 27 June to 26 Oct.	.....	On vacation leave.
1924... 9 Dec. to 12 Apr. 1925...		Acting Supt. of the Line.
1925... 1 July	.....	Promoted to Assistant Superintendent of the Line.
1925... 1 Oct.	.....	Promoted to Class 1.
1926... 4 June to 3 Sept.	.....	On vacation leave.
4 Sept. to 21 Jan. 1927 ...		Acting Superintendent of the Line.
1928... 12 May to 9 Oct.	.....	" " " " "
1929... 28 June to 14 July	.....	" " " " "
15 July to 14 Oct.	.....	On vacation leave.
15 to 19 Oct.	.....	On half pay leave.
20 Oct. to 11 May 1930...		Acting Superintendent of the Line.
1930... 3 July to 16 Nov.	.....	Acting Superintendent of the Line.
1931... 1 June to 15 Oct.	.....	On vacation and commuted half pay leave.
1932... 1 Apr.	.....	Regraded to Grade F.
21 July to 20 Oct.	.....	Acted as Supt. of the Line.
1934... 6 June to 20 Oct.	.....	On vacation and commuted half pay leave.
21 to 30 Oct.	.....	Acted as Superintendent of the Line.
1935... 6 Aug. to 13 Oct.	.....	Acted as Superintendent of the Line.
1936... 22 Jan. to 1 Feb.	.....	Acted as Superintendent of the Line.
1 Apr.	.....	Title changed to Superintendent of the Line.
1937... 7 June to 20 Oct.	.....	On vacation leave.
1938... 18 June to 10 Jan. 1939		Acting as Commercial Manager in addition to his substantive duties as Superintendent of the Line.

Great Western Railways 1904-1914; Military Service 1914-20.

William Martin Young; born 11th January, 1890.

Chief Accountant, Haifa. Grade F, £P.800-25-1000, plus £P.100
Expatriation Allowance. Salary, £P.1000.

1927... 24 Mar.	.....	Appointed Chief Accountant.
3 Aug. to 6 Nov.	.....	Acting Accounts Officer, Sinai Military Railway.
1930... 1 Sept. to 30 Sept.	.....	On vacation leave.
1931... 4 June to 15 Oct.	.....	On vacation and commuted half pay leave.
1932... 1 Apr.	.....	Regraded to Grade F.
1934... 7 July to 20 Nov.	.....	On vacation and commuted half pay leave.
1935... 13 May to 12 June	.....	On vacation leave.
1937... 24 July to 17 Nov.	.....	" " "

North British Railways, 1905-1920. Deputy Chief Accountant,
Ceylon Government Railways 1921-27.

Arthur Leslie Jones, M.C., A.M.I.C.E.; born 17th August, 1890.

Assistant Chief Mechanical Engineer, Haifa. Grade H, £P.550-
25-750, plus £P.100 Expatriation Allowance. Salary, £P.750.

1920... 1 July	.....	Assistant Locomotive Superintendent. Grade III.
1921... 1 Dec. to 28 Feb. 1922...		On vacation leave.

1937...25 July to 2 Nov. Acting Chief Engineer in addition to his substantive duties.
 1938...16 July to 12 Nov. On vacation leave.

Military Service 1916-20.

Lennard Frederick Williams; born 23rd February, 1895.

Secretary, Grade H, £P.550-25-750, plus £P.100 Expatriation Allowance. Salary, £P.750.

1925... 5 Mar. Appointed Secretary, Grade III.
 1926... 1 Oct. Regraded to Class 2.
 4 Aug. to 3 Jan. 1927 ... Acting Assistant General Manager.
 1927... 4 to 21 Jan. Acting General Manager.
 22 Jan. to 29 Apr. Acting Assistant General Manager.
 22 July to 21 Oct. On vacation leave.
 1928... 1 June Appointed Secretary, Railway Board.
 1929... 7 Apr. to 6 July On vacation leave.
 1931...14 Aug. to 28 Dec. On vacation and commuted half pay leave.
 1932... 1 Apr. Regraded to Grade H.
 1934... 9 Apr. to 6 Aug. On vacation and commuted half pay leave.
 1935...26 Aug. to 1 Nov. On vacation leave.
 1937...29 July to 7 Nov. " " "

Military Service 1914-19; General Manager's Staff, Great Western Railway, 1919-25.

Frank Harry Taylor; born 15th July, 1896.

District Engineer, Lydda. Grade H, £P.550-25-750, plus £P.100 Expatriation Allowance. Salary, £P.750.

1920... 1 July Appointed Assistant Engineer. Capital Works.
 1922...24 May to 25 Sept. On vacation leave.
 1923...24 Dec. to 23 Mar. 1924... On commuted half pay leave.
 1924...24 Mar. to 28 Apr. On special leave.
 1925...25 Mar. Promoted to District Engineer, Grade III.
 1926... 1 Oct. Regraded to Class 2.
 1927...30 Aug. to 29 Nov. On vacation leave.
 1930...25 Mar. to 4 Aug. On vacation and commuted half pay leave.
 1932... 1 Apr. Regraded to Grade H.
 1933... 1 July to 30 Sept. On vacation leave.
 1 Oct. to 8 Nov. On commuted half pay leave.
 1935... 7 July to 12 Nov. On vacation and commuted half pay leave.
 1937...13 June to 11 Sept. On vacation leave.

Military Service 1915-20.

Frank Alexander Sargent; born 27th April, 1891.

District Traffic Superintendent, Lydda. Grade H, £P.550-25-750, plus £P.100 Expatriation Allowance. Salary, £P.750.

1926...14 Sept. Appointed District Traffic Superintendent, Grade III.
 1 Oct. Regraded to Class 2.
 1928...16 Sept. to 15 Dec. On vacation leave.

1929...28 Mar. to 27 June	Acting Divisional Superintendent, Amman.
1930...13 Sept. to 26 Jan. 1931...	On vacation and commuted half pay leave.
1931... 5 Nov.	Transferred to Lydda.
1932... 1 Apr.	Regraded to Grade H.
23 July to 22 Oct.	On vacation leave.
1937...10 Mar. to 3 Aug.	" " "

Military Service 1915-20.

David Cornet; born 2nd January, 1882.

Running Superintendent, Haifa. Grade H, £P.550-25-750, plus
£P.100 Expatriation Allowance. Salary, £P.750.

1921... 1 Mar.	Appointed Assistant District Locomotive Superintendent, Lydda.
1922...16 Oct.	Title changed to Assistant Running Superintendent and transferred to Kantara
14 Sept. to 13 Dec.	On vacation leave.
1924... 6 June to 5 Sept.	On vacation leave.
1926... 8 June to 7 Sept.	" " "
1 Oct.	Regraded to Class 3.
1928... 1 May to 31 July	On vacation leave.
18 Oct. to 17 Jan. 1929...	Acting Running Superintendent.
1929...29 Aug.	Promoted to Running Superintendent, Class 2. Appointed Inspector under the Fencing of Machinery Ordinance, 1928.
1930... 4 June to 18 Oct.	On vacation and commuted half pay leave.
1932... 1 Apr.	Regraded to Grade H.
13 July to 12 Oct.	On vacation leave.
1934... 2 July to 15 Nov.	On vacation and commuted half pay leave.
1937... 8 Apr. to 10 Sept.	On vacation leave.

Military Service 1915-18; Served in the Sudan Government Railways as Locomotive Foreman 1910-21.

Kenneth Arthur Mansfield; born 31st May, 1894.

Assistant Chief Accountant, Headquarters. Grade H, £P.550-25-750, plus £P.100 Expatriation Allowance. Salary, £P.750.

1926...21 Nov.	Appointed Assistant Chief Accountant, Class 3.
1929...29 July to 28 Oct.	On vacation leave.
29 Oct. to 6 Nov.	On half pay leave.
1930... 1 Sept. to 30 Sept.	Acting Chief Accountant.
1931... 1 Jan.	Promoted to Class 2.
4 June to 18 Oct.	Acting Chief Accountant.
1932... 1 Apr.	Regraded to Grade H.
2 July to 15 Nov.	On vacation and commuted half pay leave.
1933... 3 June to 16 Oct.	Acting Superintendent of Stores.
1934... 7 July to 20 Nov.	Acted as Chief Accountant.
1935...11 Jan. to 12 May	Acting Superintendent of Stores.
1935...13 May to 24 May	Acting Chief Accountant.
25 May to 12 June	Acting Stores Superintendent and Acting Chief Accountant.
13 June to 22 Sept.	Acting Stores Superintendent.
23 Sept. to 5 Feb. 1936...	On vacation and commuted half pay leave.

37:11 BEYER-GARRATT LOCOMOTIVES OF IRANIAN STATE RAILWAYS.

From Keith Chester comes a copy of an article from "The Locomotive" of October 15th., 1936, pp.306-308:

"The Beyer-Garratt 4-8-2+2-8-4 locomotive illustrated is one of a series of four recently shipped by Beyer, Peacock and Co. Ltd., for service on the northern section of the Iranian State Railways. This line runs from Bandar Shah on the Caspian Sea to Teheran, a distance of 280 miles. About 100 miles of this is taken up with the crossing of the Elburz mountains, the summit of the pass being nearly 7,000 ft. above sea level. On the northern approach to this the ruling grade is 1 in 36, and this is continuous for 40 miles, with frequent curves of 656 ft. radius, and spiral zig-zags. There are also numerous tunnels, one near the summit being nearly two miles in length. The descent to the interior of the country is made in about 60 miles, the ruling grade being 1 in 54. From the bottom of these grades both towards Bandar Shah and to Teheran the gradients are much easier, the steepest being 1 in 67. The Iranian State Railways system is laid out on the 4ft. 8½ in. gauge and the maximum axleload is limited to 15 metric tons. The Beyer-Garratt locomotives are intended to work 400 ton trains at speed over the mountain sections.

The coupled wheels are 4 ft. 5½ in. diameter and the four cylinders are each 19¼ in. diameter (490 mm) with a stroke of 26 in. (660mm.) The accompanying illustration of the boiler gives a good idea of its liberal proportions; the barrel is 14 ft. 5¼ in. long, between tube-plates, and 7 ft. 6 in. outside diameter, and it carries a working pressure of 200 lb. per sq. in. (14 kg. per sq. cm.,) The heating surface is distributed as follows:-

Tubes (inside)	3,332 sq. ft.	(309.73 sq. m.)
Firebox	<u>278 sq. ft.</u>	<u>(25.82 sq. m.)</u>
	3,610 sq. ft.	(335.55 sq. m.)
Superheater (outside)	<u>874 sq. ft.</u>	<u>(81.2 sq. m.)</u>
Total:	<u>4,484 sq. ft.</u>	<u>(416.75 sq. m.)</u>
Grate area :	68 sq. ft.	(6.34 sq. m.)

The superheater is of the Superheater Co.'s Melesco pattern. The boiler is lagged with J. W. Roberts & Co.'s asbestos, as are also the firebox, dome, cylinders, steam and exhaust pipes. The front dome contains a water purifier of Beyer, Peacock design, comprising circular trays over which feed water cascades and deposits scum into a container beneath the dome, this deposit being blown out by means of an "Everlasting" valve operated from the cab. The firebox is of copper and fitted with four tubes for supporting the fire brick arch and improving circulation. Most of the stays are of copper, but the two top rows and corner stays are of Longstrand steel. The three safety valves are of the Ross pop type. Feeding of the boiler is through top feed clack boxes operated by two Gresham & Craven No. 14 self-acting injectors. A water lifter is provided for emergency use, fitted with a length of flexible hose to reach streams or pools near the line. Stainless steel plates are used for clothing the boiler with a planished steel lagging-plate for the back head. The steam regulator is of the Owen type, arranged in the steam dome near the firebox.

The engine is fired by oil fuel, the storage tank capacity being 7 tonnes (about 1,400 gallons.) The oil burner is arranged at the front of the firebox.

The main frames of the engine are deep plate girders stayed by massive steel castings. The two engine units also have plate frames of heavy section, well stayed; the pivots are Beyer, Peacock's patent adjustable type. The horn block castings are fitted with adjustable wedges.

The springs are arranged in two groups and are compensated between the outer coupled and intermediate, and the driving inner coupled and inner bogie, the inner bogie being fitted with a radial arm. The driving and intermediate wheel tyres have thin flanges. Walschaert valve gear is employed, fitted with a locking cylinder. Inside admission piston valves with four rings are used, while the cast steel main pistons have three rings and tail rods. Cylinder lubrication is by Wakefield mechanical lubricators one each unit. United Kingdom metallic packing is fitted.

The Knorr-Bremse automatic and non-automatic air brake acts on all the coupled wheels, as well as an auxiliary steam brake. In addition there is a hand brake acting on the wheels of the rear engine unit.

Gresham & Craven's air-sanding gear is arranged at the front of the driving wheels of the leading engine and to the rear of the driving wheels of the hind engine unit.

The illustration of the footplate shows the various fittings, while the cab is well ventilated and provided with sky-lights and side windows. The driver is on the right hand side with the regulator handle conveniently arranged, along with the brake apparatus and reversing gear. On the fireman's side the oil fuel regulating gear is arranged for easy manipulation, and here also is the pressure gauge. Above the reversing lever are gauges to indicate the steam chest pressure in both engine units.

The engines are fitted with the Teloc speed recorder, also with a Foster pyrometer. Westinghouse steam heat apparatus for the train is provided. In front of the chimney is a Latowski bell operated by compressed air.

At 65 per cent. of the working pressure the tractive effort is estimated at 47,150 lb. (21,380 kg.) and at 75 per cent at 54,400 lb. (24,670 kg.)

The maximum axleload is 14.75 tons (15 tonnes). Total weight in working order is 201 tons (204 tonnes).

The water tank capacity is 5,500 gallons. The total length over buffers is 96 ft. 6¼ in. (29,420 mm.). As may be expected the various footplate fittings are marked in Iranian script.

The four locomotives were shipped to Batoum, on the Black Sea, and then taken over the Trans-Caucasian Railway to Baku on the shores of the Caspian Sea. Thence they were taken by boat to Bandar Shah where they are now under erection."

37:12. VIDEO UPDATES. Despite several attempts, the Editor has been unable to get anyone interested in producing a proper video of Israel Railways. However, two videos which have been reviewed in "Harakevet" in the past are still available and with new prices:

"**Dampfabenteuer in Libanongebirge**", No. 5023, price 89 DM.,

"**Die Hedschasbahn**", by Nick Lera, No. 5617, price 50 DM.

Both can be ordered from: EK Verlag, Bestellservice, Postfach 5560, D-79022 Germany. Both are highly recommended.

37:13. ANZAC OUTINGS.

Uri Ben-Rehav has been exploring in Australia and has found the following in "*The Kia Ora Coo-Ee*", "The Official Magazine of the Australian and New Zealand Forces in Egypt, Palestine, Salonica and Mesopotamia", Second series, No. 4, Cairo (Egypt) Oct. 15th. 1918. ("published monthly"). It is full of contemporary slang and, though of little direct railway interest, describes well the atmosphere on the troop trains of the time:

"I've been "up" and "down" the line a few times, and have always found my fellow travellers merry and bright, whichever way the train was going; but in this screed I'm specialising on things seen coming down on LEAVE.

We travel third class; but I doubt whether a Pullman Car has ever held a happier crowd than you can see any day inwards bound, in a carriage "Reserved for Soldiers". At Kantara, one of a mob of lucky coves, you hop in with your kit, dive for the first vacant seat, drop your burden, and have a screw round. [*sic ! How slang changes... Ed.*] You may spot a chap you know; failing that, if you're sociable, there'll be no trouble in making a pal for the journey. Noise and bustle till everyone gets settled; then the conversation opens and keeps going full speed, with plenty of laughter and song. You could travel for a month o' Sundays in R.F.S. [*Reserved for Soldiers. Ed.*] carriages and never see a group of men with glum faces; but you would find more smiles to the square yard than anywhere else in Egypt, shrapnel bursts of wit and humour, a bit of skylarking, and a pervading buzz of voices.

We sit at ease among piles of kit, haversacks, water-bottles and all the rest - swapping yarns or our own ideas on all things under the sun. The carriage is a club room. Here and there a quiet chap tries to read, and window-seaters keep an eye on the scenery. The air is misty blue with tobacco smoke from pipes and fags; rarely we get a whiff of the aristocratic cigar.

At ease in shirt-sleeves and with heads bared to the breeze, we travel in our "special". Our manners are unconventional, too; nobody mopes in a corner because he hasn't been "introduced". No, we don't worry about "intros", not much. We may not know our neighbours from a crow, so far as names are concerned; but "Jock", "Choom", "Dinkum" and "Cobber" are standardised monikers that do yeoman service.

We dine al fresco, pooling the contents of haversacks and mess-tins; hunks of bread, "Dreadnought" sandwiches, tins of bully, issue biscuits and slabs of boiled bacon, to say nothing of Gyppo cakes and stuff purchased from "Eggs are cook" waleds, who parade the carriage with raucous cries, at every station. I've enjoyed munger in a "special" more than six course dinners in Cairo. Our tablecloth is a sheet of newspaper, spread on our knees or the seat. There are plenty crumbs, and after a meal the carriage floor is littered with eggshell. The Gyppo munger vendors is a roaring trade whatever their wares. Without leaving your pozzie, you can buy the makings of a top-hole meal, hard-boiled eggs (salt buckshee), bread, cakes of all shapes and colours, and fruit in season: dates, grapes, oranges, pomegranates, figs, shamam and other melons. There are no wine lists to be studied with the air of a connoisseur, but a dizzy or so will give you lemonade, ginger-beer or syrup.

There are generally some pretty good singers among us, but musical instruments are lacking - even those hardy annuals the mouth-organ and the tin whistle are rare. Songs

range from ragtime to ditties made in Palestine. An old favourite of the Tommies starts something like this: "Are you from Gaza, from Sidi Bishr or El Arish? Are you from Gaza?" But any old song will do, so long as it has a chorus.

Someone shoves his head out of a window and informs us that we are within coo-ee of Cairo. Then there's something done. Personal property is collected at the double; tunics are donned, belts whipped into place, and a long queue forms in the corridor. Before the train has stopped, chaps at the head hop out".

"Koala". Palestine.

37:14 DESERT DEMOLITIONS.

Also from Uri Ben-Rehav: From the "*Official History of Australia in the War of 1914-1918*", Vol. VII, "*Sinai and Palestine*", by H. S. Gullet.

From pp.351f, May 1917, "Chetwode's Plan".

"Late in May the engineers of Desert Column carried out an interesting and highly successful series of demolitions on the Turkish railway south of Asluj. The use of this line was discontinued after the British marched to the Ghuzze, but so long as it remained intact it was a menace to Chetwode's right flank. Moreover, the enemy was known to be very short of steel rails; already he had torn up the old railway from Jaffa to Ramleh [*actually Lydda. Ed.*] for use on the new military lines, and it was anticipated that he might remove for the same purpose the rails on the line from Asluj south to Auja.

The absence of water on the route between Shellal and Asluj, the uncertainty of the water-supply at Asluj and Auja, and the presence of a considerable enemy force at Beersheba, made it necessary that the raid on the railway should be a complete surprise to the enemy and rapidly accomplished. Two columns were arranged. One, made up of the engineering field squadrons of the Anzac and Imperial Mounted Divisions, and escorted by the 1st. Australian Light Horse Brigade, was to cover the twenty-six miles between Shellal and Asluj in a single march so as to arrive on the ground at 4 o'clock in the morning of May 23rd; while the other, the Field Troop of the Camel Brigade, was to march simultaneously from Rafa to Auja. This party was to be protected by the Camel Brigade, with a squadron of horses from the Imperial Mounted Division in escort. All the demolition work was to be completed by 10 o'clock in the morning of the 23rd., when the two bodies were to return immediately to their bases. While the work was in progress, the Imperial Mounted Division was to demonstrate against the enemy south of Beersheba; two brigade of the Anzac Mounted Division were to occupy the country between the demolition parties and the Imperial Mounted Division; at the same time the infantry was to show activity against the Gaza end of the Turkish lines.

The preparations which were capably directed by Brigadier-General R. E. M. Russell of the Royal Engineers [*C.V.O., C.B.E., D.S.O., R.E., Officer of the British Regular Army; of Milford House, Limerick, Ireland; born Limerick, 2 Sept. 1879*] were remarkably thorough. The engineering squadrons, which were strengthened by men selected from the mounted troops, rehearsed in detail the work ahead of them, and careful and accurate estimates were made of the time the demolition would occupy. As usual in

these adaptable mounted formations, much ingenuity was shown in improvisation. All the explosives, amounting to several tons, were packed in kerosene-tins, and clips for attaching the charges to the rails were made from the steel bands in which hay for the horses was brought up to the front. Between Asluj and Auja were several substantial masonry bridges and viaducts; these were to be destroyed if time permitted; but the first concern of the engineers was to be the breaking of the steel rails, as it was believed that these could not be replaced by the enemy.

Marching from Shellal at 2.30 in the afternoon of May 22nd., Cox's brigade was joined at Fara by these two squadrons of engineers and one section of the Leicester Battery. Soon after midnight the 6th. Regiment was thrown round the village of Khalasa to prevent the Arabs from carrying information to the enemy. The locality of operations was reached in the early morning, although the extremely rough unknown country had somewhat delayed the march, and the first demolition charges was not fired until nearly 8 o'clock. But so perfect had been the training of the men engaged, and so expeditious was their work, that at 9.58 the last charge was fired by the Imperial Division squadron under Captain Ford-Young [*D.S.O., R.E. born South London 28th. Jan., 1883*] and twenty minutes later the Anzac Squadron [*formed respectively of the 2nd. & 1st. Field Sqdns., Aust. Engineers.*] had completed its share of the task. Meanwhile the Camel Brigade was advancing from Rafa on Auja further to the south. At this time the camels were low in condition owing to excessive work, and the railway was not reached until some hours after the appointed time. With the line destroyed to the north, however, General Smith's engineers were in no danger from molestation, and early in the afternoon the whole undertaking was completed, and the troops were on the march back to Rafa and Shellal.

The enemy, except for light patrols, made no appearance, for although the operation was not hindered by fighting, the raid was an admirable demonstration of careful organisation and brilliant execution. Numbering in all only four officers and less than 100 men, the three demolition parties destroyed every steel rail over thirteen miles of track, as well as a quantity of Decauville line. In addition, they blew up and entirely wrecked one bridge of eighteen arches, one of three arches, one of six arches, one of five arches, one of three arches, and one of two arches - also a viaduct over the Wady Theigat el Amirin, and several arched culverts; a number of railway points and switches, station buildings, and telegraph poles, and a good deal of other enemy property were also demolished."

37:15. KOSHER CONVERSIONS.

In your Editor's professional life the issue of the validity of religious conversions carried out inside or outside Israel is a major topic of debate and controversy. But this article is about the conversion of Palestine Railways Baldwin 4-6-0's into 4-6-2T's, and comes from "*The Locomotive*" of Dec. 15th. 1926, p. 376, courtesy of Keith Chester:

"Arrangements were made some time back by the Mechanical Engineer's Department of the Crown Agents for the Colonies for re-conditioning and re-building twelve 4-6-0 tender locomotives belonging to the Palestine Rys. by Messrs. Sir W. G. Armstrong, Whitworth & Co. Ltd., at their Scotswood Works, Newcastle-on-Tyne.

These engines were built by the Baldwin Locomotive Works in 1918. They had been worked hard during the latter part of the War period. and since, and were badly in

want of a thorough overhaul. In despatching them to this country they were only partially dismantled, as will be seen from the accompanying illustrations, and were shipped from Port Said in one of the Christen Smith special locomotive-carrying steamers, direct to Messrs Armstrong's wharf on the Tyne, at Newcastle.

It was decided to convert six of the engines to side tank superheater locomotives of the 4-6-2 type. This entailed the addition of a two-wheeled truck at the rear. The truck is of the radial axlebox type, with laminated side control springs. Side buffers and drawgear to suit the existing rolling stock were fitted to the rear buffer beams, as well as new cow-catchers at both front and rear of the engine.

A new cab was provided and a rear bunker, with a coal capacity of 2¾ tons, added. The original cast steel drag-box was cut out and steel plate extension frames fitted at the rear end of the cast steel bar framing, with a new buffer beam and the necessary frame stays and attachments to suit the rear truck. The new side tanks have a capacity of 2,350 gallons and are supported on brackets mounted on the main frames.

The original steel fireboxes and tubes, and smokebox tube-plates of all the engines, were removed and replaced by new copper fireboxes with copper stays, new tube-plates and new steel tubes throughout. The ashpans and firebars were also renewed. All joints were overhauled, and the boilers put into thoroughly good repair.

New equipment added to each engine included pyrometers, speed indicators, and electric headlights with cab-lighting equipment. A screw hand-brake was fitted in the cab of the tank engines, and coupled to the existing steam brake gear.

The leading particulars of the converted tank locomotives are:- Outside cylinders, 19 in. dia. by 26 in. stroke, with piston valves. Coupled wheels 5 f. 2 in. dia. Leading bogie and trailing wheels 2 ft. 9 in., dia. Coupled wheelbase 13 ft. 4 in. Total wheelbase 32 ft. 3 in. Bogie wheelbase 6 ft. 8 in. Boiler, 5 ft. dia. outside tapering to 5 ft. 8¾ in. dia. Distance between tubeplates, 13ft. 10 1/8 in. Centre-line of boiler 7 ft. 10½ in. above rails. Working pressure, 190 lb. per square in. Firebox 9 ft. 1¼ in. Heating surface: Large tubes: 429 sq. ft., Small tubes 1,000 sq. ft.,

Weights in working order:

Front coupled wheels 16 tons 19 cwt.

Middle coupled wheels 17 tons 2 cwt.

Rear coupled wheels 16 tons 18 cwt.

Total adhesive weight: 30 tons 19 cwt.

Total weight of engine in working order, 85 tons 11 cwt; Tractive force at 85% of the boiler pressure 24,449 lb. The over-all width over footplate is 10 ft. 6 in."

[Ed. notes: At this period the main works were of course at Kantara East in the old Army depot, and Haifa harbour still undeveloped, so the despatch from Port Said made a lot of sense. I am intrigued to have one of my own questions on this issue answered by this article - for if the locos were shipped direct to a wharf by the loco works, they would never have had to traverse any British railway metals]

37:16 MORE MODELLING NOTES:

Further to 36:8: "Klein Modellbahn" of Gatterederstr. 6, 1230 Vienna, Austria (Fax: (+43) 1-888-2286) have started producing a series of USATC wagons in HO Scale. At present this includes a bogie flat wagon, a bogie tank wagon ("Cistern" in US parlance), a 4-wheel van and a 4-wheel open. The first two of these were certainly used in the Middle East, some flat vehicles (some rebuilt) being still in use on IR for container traffic. (See Cotterell, Fig. 84).

"Sachsenmodelle" in Zwickau, Germany, have also started producing HO-scale models of USATC-type stock, in later DB format (since these vehicles were used over Europe too) - announced but not yet seen are a 4-wh. van and a 4-wh. Guards Van ("Caboose" in US parlance) - of the type preserved at the Haifa Railway Museum. (See Cotterell, Fig. 83).

These would go well with the ROD 2-8-0 and USATC 0-6-0T locos produced by "Branch Lines" of P.O. Box 31, Exeter EX4 6NJ (see 36:8).

37:17. BERT DYKE MEMORIES.

From Bert has come another letter with various comments: "Strange how the Kantara East blokes were quite fond of the old Baldwin 4-6-0's, yet the cabs were not as comfortable as, say, the 2-8-2's, which were never popular with enginemen. When the LMS 8F's came, of course, they were all happy - their cabs were christened "Midland Drawing Rooms" right from the start. One mate of mine, Don Farmer from Wigan Springs Branch shed, found his own old loco on the wharf at El Shatt in 1942 and "went on" like a lover, used to spend his sparse spare time dollying her up. Bad luck for him, he was often on the Cairo-Haifa through train, and often had a 2-8-2 or a even a Baldwin (then). The Black 8's were used for freight mostly, later all the 2-8-0's. I was really fond of the old Robinson G.C. ROD 2-8-0's that had also served in WW1 - they were simple locos, not even superheated; they were the real openers and operators of that line from Haifa through Lebanon; always with loose coupling rods, the "Robinson clank", they made history, they dragged colossal rafts of bogies when we were getting the wounded out of the Western Desert after Alamein. They even sorted them out, you'd have 14 bogies of limbless, then blinded, and another raft of what we called "shell-shocked" - worst of all, and they followed each other "Permissive Block System", eventually getting to Port Said for shipment. No stress counsellors, nor Legal Aid to claim £50,000 for harassment, just morphia and a railway ride !

Sometimes I feel 200 years old... when I consider the erratic state Middle East lines are in now - e.g. Syria and Lebanon, with erratic Romanian diesels running when available.... yet we kept the services in the Sudan going with steam as per timetable, and had the articulated dinosaurs, the Ansaldo 0-4-4-0T's (and Breda 0-4-0T's), running even before the Italian surrender at Massawa, In fact guerrilla mobs of Alpini renegades attacked us at Nefasit, but we still ran the trains ! Late, yes, but they ran !"

37:18. NOTED IN READING.

a). GeraNova Verlag of Postfach 4304 64, D-80734 München, have published a book on the "Eierköpfe" ("Egg-head" VT08 Diesel Railcars in their "Bahn-Baureihe" series. These are the railcars on which the Esslingen/LHB units on Israel Railways were based. However, though the book includes details of the railcars operated by the U.S. Army within Germany, it does not cover the units built for other railway administrations.

b). "Unter Dampf" is a pictorial book on the products of the Esslingen Locomotive Works; noted:

- p.98, 2-2-0+2 steam railcar, combining 1st., 2nd. & 3rd. Class accommodation, three units built for the TCDD in 1932; the units were 21 m. long, had 56 seats, were of 400 hp and had a maximum speed of 108 km/h.

- p.102. 2-cyl. 2-8-0 4153 / 1938, built for Iranian State Railways. (Order shared with Krupp & Henschel as well.)

- p.103. 2-10-0 56114, built 1940 for the TCDD.



37:19. Damascus Qanawat Station. Hartmann 2-8-2 No. 263 leaves with empty stock. 15th. Sept. 1996. (Photo: Andy Wilson.)



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