

資料 4 収集資料

- 4 - 1 運行技術基準(項目目次のみ)
- 4 - 2 ウクライナ鉄道輸送リストラのコンセプトとプログラム(目次のみ)
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- 4 - 4 車両限界図、建築限界図
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4-1 運行技術基準

ウクライナ運輸交通省

1995年1月16日付ウクライナ運輸交通省令第27にて承認

ウクライナ鉄道運行技術基準

(ウクライナ語、ロシア語)

序

第一章 鉄道輸送従業員の一般的義務

施設及び設備

第二章 総則。限界寸法

第三章 線路施設及び設備

線路の平面図及び断面図

道床、線路の上部構造

及び人工構造物

レールと転轍機

交差点、踏切及び接続地点

線路標識及び信号標識

第四章 機関車用、車輛用、上水道、下水道の施設、設備。 復旧手段

第五章 駅用施設、設備

第六章 信号（警報）装置、通信機器及びコンピューター 信号

自動及び半自動閉塞信号装置

転轍及び信号の電気式中央集中化

配車中央集中化

自動機関車警報装置及び自動停止装置

転轍機と信号の最重要相関関係

駅閉塞信号装置

ハンプ操車場の機械化及び自動化設備

自動踏切信号（警報）装置及び自動遮断機

列車接近通報自動システム

過熱軸箱自動検出設備

線路防護設備

通信

鉄道輸送情報・計算システム

信号化・集中化及び閉塞信号制の路線及び通信

信号化・集中化及び閉塞信号制用設備の

メンテナンスと通信

- 第七章 電力供給施設及び設備
- 第八章 施設及び設備の点検と修理
 - 施設及び設備の点検
 - 施設及び設備の修理

車輛

- 第九章 一般的基準
- 第十章 車軸
- 第十一章 ブレーキ設備及び自動連結装置
- 第十二章 車輛のメンテナンス及び修理
 - 機関車及びモーター付き車輛のメンテナンス及び修理
 - 客車及び貨車のメンテナンス及び修理

列車の運行編成

- 第十三章 列車運行スケジュール
- 第十四章 分岐点
- 第十五章 駅での技術的作業の組織
 - 一般的基準
 - 転轍機の操作
 - 操車作業
 - 列車の編成
 - 列車へのブレーキ始動手順（又は 列車への制動器取り付け手順）
 - 列車の装備及び操作
 - 機関車の列車への連結
- 第十六章 列車の運行
 - 一般的基準
 - 列車の受入
 - 列車の発車
 - 列車運行に際しての信号（警報）及び通信手段
 - 列車運行手順
 - 機関車及び電車の機関士の列車運転手順
 - 区間内での列車の緊急停車時の行動手順
 - 取り外し可能な車輛単体の運転
 - ウクライナ鉄道操業技術規定に使用される用語

4-2 ウクライナ鉄道輸送リストラのコンセプトとプログラム（目次のみ）

ウクライナ運輸交通省

ウクライナ鉄道輸送国家管理局

ウクライナ鉄道輸送リストラのコンセプトとプログラム

公式刊行物

キエフ 1998年

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ウクルザリズニツァ民営化戦略

ウクルザリズニツァの為に作成

EBRD ヨーロッパ復興開発銀行

アメリカ合衆国商業開発庁

本報告書は、アメリカ合衆国の輸出拡大を促進する政府機関、アメリカ合衆国商業開発庁の財政支援により作成されたものである。本書に述べられている意見、成果、結論、または勧告は著者に帰し、アメリカ合衆国商業開発庁の公式立場または政策を必ずしも反映したものではない。

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Черт. №2

4 — 4 車両限界図、建築限界図

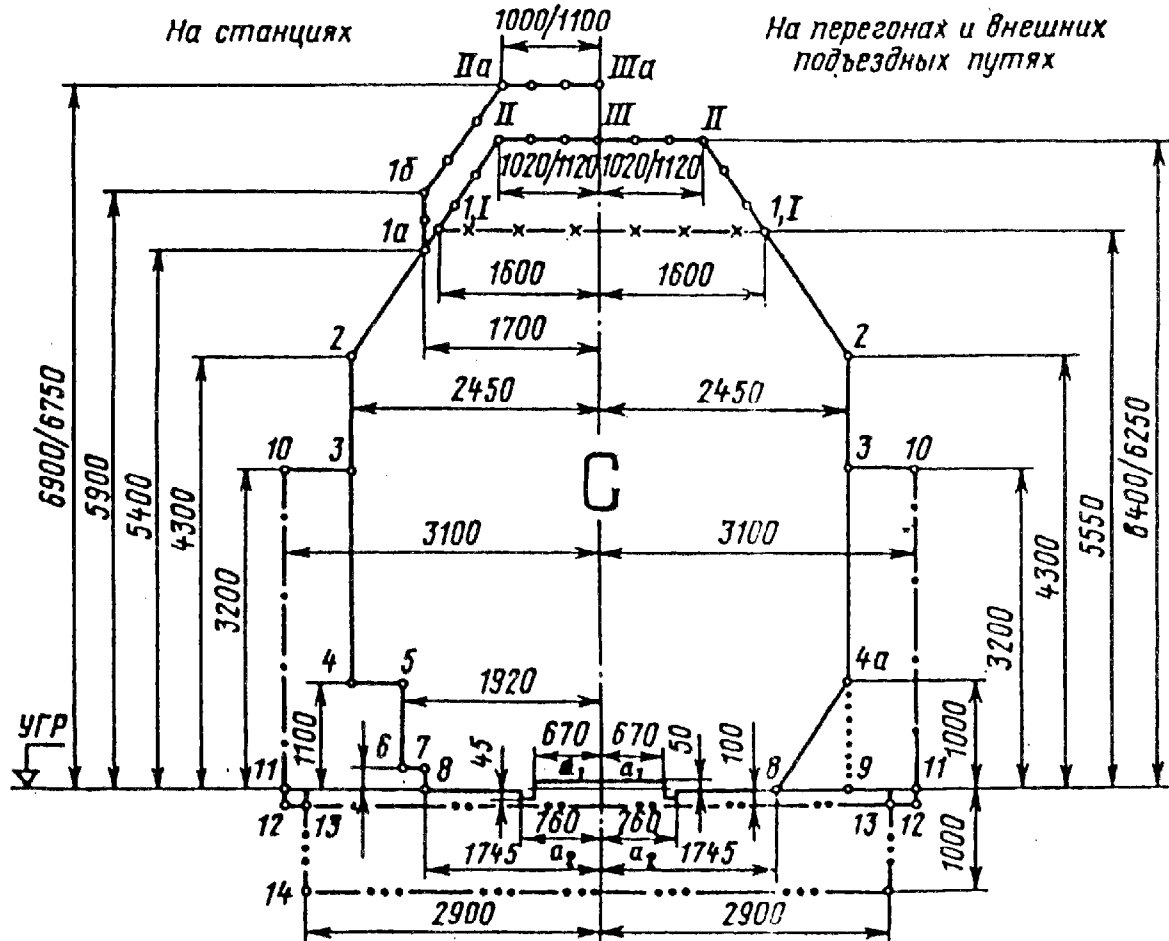


図 6.1 構造物 C 建築限界

図の上部 駅構内 区間及び外部接近路

軌道幅 1520mm の場合 $a_1=670\text{mm}$ $a_2=760\text{mm}$

1524mm の場合 $a_1=672\text{mm}$ $a_2=762\text{mm}$

一。一。一 新たに建設されるすべての施設、設備の建築限界線、但し、路線が電化された場合でも電化されない線路に配置されるものを除く。

I—II—III — 車輛の長時間停車が予定されていない区間用、および駅構内線路用（人工構造物の範囲内）

Ia—Iδ—IIa—IIIa — 駅構内のその他の線路用の構造物建築限界線（分子—吊架線付カタナリ・サスペンション、分母—吊架線無しカタナリ・サスペンション）

- x — x — x — 当該路線電化に際しても電化されない線路上の構造物、設備の限界線
- . — . — . — 区間及び駅構内の線路端外側および駅構内の独立して敷設された線路の近くに配置された建物、構造物、設備の建築限界線（橋梁、トンネル、ギャラリー、プラットフォームを除く）
- .. — .. — .. — 区間及び駅構内の線路有効延長範囲での設備・装置の最高高度、人工構造物、敷物、踏切、機関車信号（警報）装置インドゥクタンス、並びに転轍装置とその範囲に配置された信号化・集中化および閉塞信号制装置
- ... — ... — ... — 区間及び駅構内での建物と支柱の基盤、架線、ケーブル線、パイプラインやその他の非線路付帯施設・設備の限界線、但し、信号と中継装置設置場所での人工構造物及び信号化・集中化および閉塞信号制装置を除く
- — トンネル及び橋梁、跨線橋（陸橋）、その他の人工構造物上の欄干の限界寸法輪郭
- YTP — 軌条頭部最上部の水準； 実線 — 橋梁、トンネル、ギャラリー、プラットフォーム、踏切の敷物、転轍装置およびその範囲ないでの信号化・集中化および閉塞信号制装置、さらには駅構内の軌道間隔内に配置された構造物及び設備の限界線

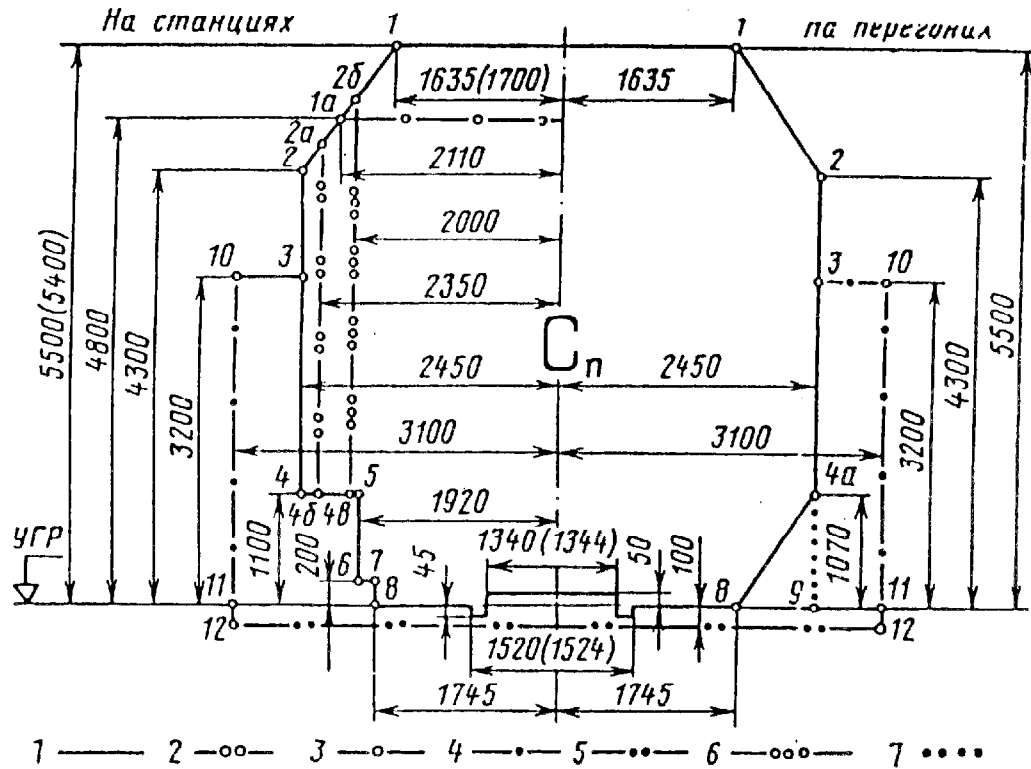


図 6.2. 構造物 C_n 建築限界

図の上部

駅構内

区間及び外部接近路

1. — 図 6.1 の該当部分に同じ
 2. — 既存及び改築中・予定の独立して立つ円柱、支柱、門の開口部および建物の突出部の限界線、線路沿いのこれらの長さが 1000mm 未満の場合（例外は認められる）
 3. — 高さ 4700mm 未満の産業輸送特殊車輛のみを運行させるための線路上のクレーン桁、門開口部横桁、及び同様の施設、設備の限界線
 4. 5. — 図 6.1 の該当部分に同じ
 6. — クリーム注入装置、積み込み・積み降ろし装置、倉庫屋根底、引出式及び折り畳み式台（樋？）、フラットカーその他の貨物取扱に関連した設備・装置の、不使用状態での限界線
 7. — トンネル及び橋梁、跨線橋（陸橋）、その他の人工構造物上の欄干用
- УГР — 軌条頭部最上部の水準

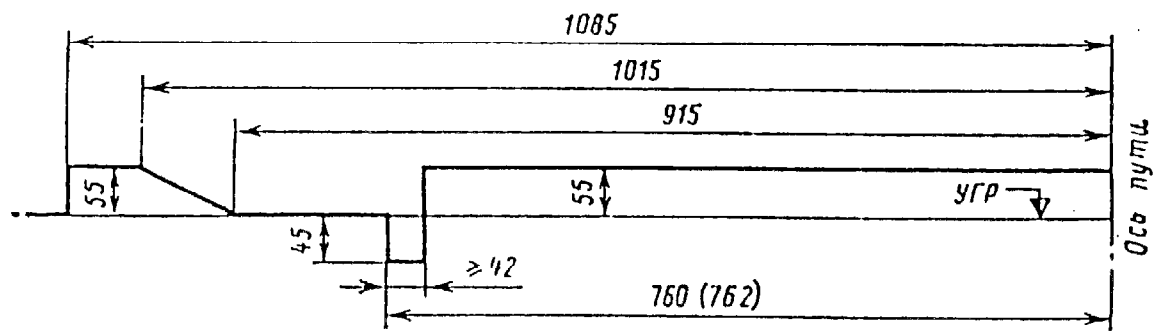


図 6.3 二重交差転轍装置用C及びCnの限界寸法下部輪郭

これは軌条頭部水準を超えた許容基準、鈍角轍叉の部分の線路軸からの距離の許容基準を定めており、具体的な転轍器断面ではない。



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Yuriy Y. CHERNYAVSKIY

REFERENCE on activity of PE "Ukrtransproekt"

Private projecting enterprise "Ukrtransproekt" was founded in September 1998. (Certificate № 00040 from 28.09.98)

Its staff is based on projecting specialists who were previously working at institutes UkrNIIttransproekt, Ukgiprotransput, Kyivgiprotrans etc. and have big experience at projecting and building of railway transport objects, including:

1. Second lines on section Syzran-Gygulevskoe more Kuibyshev railway (Russia).
2. Second lines on section Buy-Svecha Northern railway (Russia).
3. Second lines on section Baranovich-Luniniets Belorussia railway.
4. Bridge over river Belaya near Ufa (Russia).
5. Bridge over river Dnieper on section Darnitsa-Svyatoshin South-Western railway.
6. Anti-landslide measures on Lvov, South-Western, Odessa railways.
7. Road metal plants on Pridneprovsk, South-Western, Donetsk, Southern railways.
8. Sleeper plants on Pridneprovsk (Ukraine), Belorussia (Belorussia), Pryvolzhsk (Russia) railways.
9. Electrification of section Krasne-Ternopol-Podvolochisk, Lvov railway etc.
10. Carriage admission point on station Yagodin (Ukrainian-Polish border).
11. Electrification of section Voronezhskaya- Shostka.
12. Interport at Mogilev-Podolsky station, South-Western railway.

Besides, specialists, now working at enterprise, were taking part at working out of State pro-grams of electrification of Ukrainian railways and transport security on Ukrainian railways and also take part in expert-ecologists group of I commission of Railway Cooperation Organization(Warsaw).

Enterprise has license on carrying out of main kinds of special works, including engineering and consulting services (license № 01831 from 29.01.99, given by General Licensing center of State Architecture Committee of Ukraine).

Enterprise "Ukrtransproekt" has computer and office facilities, uses reference information fund of institute UkrNIIttransproekt etc.

The main fields of work of enterprise are:

1. Working out of technical and economical studies of transport infrastructure development, including international transport corridors.
2. Carrying out of scientific research and projecting works on reconstruction, building, technical rearmament and capital repair of railway transport objects.
3. Working out of technical documentation on different kinds of railway transport activities.
4. Carrying out of engineering and consulting services.
5. Working out and implementation of scientific and technical production, innovative studies, know-how, including sphere of environment preservation and labor safety.
6. Edition and publishing activities.

"Ukrtransproekt" also cooperates with foreign consulting companies in the field of the working out of different projects on development and rehabilitation of Ukrainian railways. These companies include "Scott Wilson" and "Dorsh Consult Consortium" (UK), "Systra" (France) etc.

Director

V. Rut

4－6 鉄道関連プロジェクトの概要

Name of project: Reconstruction of tunnel on the Beskid-Scotarskoe section

Initiator of project: Ukrzaliznitsia

Address: 6, Lysenko str., 252034 Ukraine

Phone: 223-0000
223-0001

Project discription:

Rail tunnel (part of international transport corridor № 5) had been constructed in 1886 on the section Beskid-Skotarskoe. The Length of tunnel is 1747 m. Now it is unsafe. Water penetrates into the tunnel, flows on the walls and foundation. Tunnel drainage doesn't work. Run speed is 15 km/h along the tunnel.

The tunnel is very important for the Ukrainian railways because 25 pairs of freight trains and 12 pairs of passenger trains per twenty-four hours pass through the tunnel. There is a 40% of freight and passenger traffic which go from west board of Ukraine. Tunnel doesn't guarantee of safety for the traffic.

Project include:

- active tunnel will have been capital repair and modernize after construction of new tunnel.

Realization of project make it possible:

- increase of carrying capacity of railway;
- guarantee of traffic safety along the tunnel;
- draw of additional transportation volume.

Project will have finished for 6 years.

Documentation is working out.

Essential sum of investment: 20 million US\$

Name of project: Construction of tunnel on the Beskid-Scotarskoe section

Initiator of project: Ukrzaliznitsia

Address: 6, Lysenko str., 252034 Ukraine

Chief of enterprise: Slobodyan Anatoly Vasilievich

First deputy of Minister of transport of Ukraine-
General director of Ukrzaliznitsia

Phone: 223-0000

223-0001

Project discription:

Rail tunnel (part of international transport corridor № 5) had been constructed in 1886 on the section Beskid-Skotarskoe. The Length of tunnel is 1747 m. Now it is unsafe. Water penetrates into the tunnel, flows on the walls and foundation. Tunnel drainage doesn't work. Run speed is 15 km/h along the tunnel.

The tunnel is very important for the Ukrainian railways because 25 pairs of freight trains and 12 pairs of passenger trains per twenty-four hours pass through the tunnel. There is a 40% of freight and passenger traffic which go from west board of Ukraine. Tunnel doesn't guarantee of safety for the traffic.

Project include:

- construction of new tunnel near the main (first) tunnel: they will unite of adit for many aims;

Realization of project make it possible:

- increase of carrying capacity of railway;
- guarantee of traffic safety along the tunnel;
- draw of additional transportation volume.

Project will have finished for 6 years.

Documentation is working out.

Essential sum of investment: 130 million US\$

Project Title: *Building of the Railway Line Izmail – Reni.*

Initiator of the project: Ukrzaliznitsia

Address: 6 Lysenko str., Kiev 252034, Ukraine

Enterprise manager: Anatoly Vasilievich Slobodyan
First Deputy Minister of the transport of Ukraine –
General Director of Ukrzaliznitsia

Phone: 223 63 05
223 53 95

Ownership: state

1. Description of the project:

At present railway communication with the Ukrainian port Reni on the Danube river passes through the territory of Moldova.

Goods delivery to and from the port is because of the need to go through the customs twice.

The station of Reni doesn't have a direct connection with the Ukrainian railways.

Building of a new line will shorten the journey time of the goods on the international transport Corridor IX from Ukraine to Balkans.

The project includes:

- ☐ building of the railway line Izmail – Reni 48 km long, laying 68 km tracks;
- ☐ building of railway bridges 3.8 km long in total;
- ☐ building of 2 over-bridges;
- ☐ building of 3 stations Orlovka, Novosel'skaya, Novaya Nekrasovka;
- ☐ laying of modern cable connection lines;
- ☐ building of the energy-supply line;
- ☐ usage of the modern methods of train movement organisation (automatic block system) and central switch and signal control;
- ☐ reconstruction of the existing track on the section Odessa – Belgorod-Dnestrovsky – Izmail (length 280 km).

2. Introduction of the section will allow to shorten the time of the goods delivery to and from the port of Reni.

3. Documentation available: project documentation.

4. Necessary investments sum: US\$ 250 mil.

5. Realization of the project will allow:

- to cut down the goods delivery exploitation costs;
- to cut down the cars and locomotives in turnover;
- to save on customs payments;
- to drawing additional transportation volumes.

Project Title: *Organization of EMU and DMU Wagons' Production.*

Initiator of the project: Ukrzaliznitsia

Address: 6 Lysenko str., Kiev 252034, Ukraine

Enterprise manager: Anatoly Vasilievich Slobodyan

First Deputy Minister of the transport of Ukraine –
General Director of Ukrzaliznitsia

Phone: 223 00 00

223 00 01

Ownership: state

1. Description of the project:

Ukrainian railways are experiencing acute difficulty providing the rolling stock for passenger transport. The need for railway shuttle transport is satisfied by approximately 70-75%, and on summer season – by 50-60%. 2959 EMU and 880 DMU wagons are being run on the railways of Ukraine. In the present EMU wagon fleet 195 (6,6%) wagons and 416 (46%) in the DMU wagon fleet have been depreciated and need to be written off because of the body and doorways corrosion, crack in truck frames, etc. It's not economically expedient to renovate them. Renewal of the aging rolling stock by means of importation is impossible for the next 4-5 years because of the difficult financial situations of the railways and absence of budget funds.

The resolution of the Cabinet of Ministers of Ukraine of 04/06/94 №364 "About Elaboration and Production at EMU and DMU wagons in 1994 - 2000" involves organizing production of motor-wagon rolling stock on Lugansk DMU-building plant.

By the expected amounts of passenger transport on the railways of Ukraine and the rolling stock available (considering depreciation rate), the need for middleyear rolling stock renewal in 1996 – 2000 makes up:

- EMU sections – 200 units;
- DMUs – 30 units.

In 1996 the first DMU was constructed; it's being tested.

DC and AC EMUs are being in project.

The project includes:

- ☐ Working out the technical documentation;
- ☐ Unifying bodies, trucks, driving gears of both DMUs and EMUs;
- ☐ Producing a 8-wagon DC EMU;
- ☐ Producing a 8-wagon AC EMU;
- ☐ Serial EMU production;
- ☐ Producing a passenger wagon with a general saloon for interregional communication.

2. **Terms of the project realizations:** the project will be realized in 5 years.

3. **Project documentation available:** the documentation is available.

4. **Investment sum needed:** US\$248 mln. Credit receiver – UZ.

5. **The money will be returned by the means of:** transportation revenues.

Present state of affairs:

National Agency for Reconstruction and Development of Ukraine has been given a claim for involving the Japanese credit.

Project Title: *Construction Elaboration and Production Organisation of Modern Main (Passenger and Freight) EMUs with Asynchronous Driving gear.*

Initiator of the project: Ukrzaliznitsia

Address: 6 Lysenko str., Kiev 252034, Ukraine

Enterprise manager: Anatoly Vasilievich Slobodyan
First Deputy Minister of the transport of Ukraine –
General Director of Ukrzaliznitsia

Phone: 223 00 00
223 00 01

Ownership: state

7. Description of the project:

The railways of Ukraine are running 1043 main direct current EMU-s, 718 EMUs alternative current and 50 AC/DC EMUs.

Presently 770 (72%) DC EMUs and 180 (17%) AC EMUs have been deprecated and must be written off.

The need for EMUs has been currently growing as a result of changing passenger and freight transport from EMUs to EMUs and introducing new electrified areas.

The Cabinet of Minister of Ukraine adopted a resolution of 26.06.93 №480 "Production of Main Freight and Passenger EMUs".

The nearest perspectives of building EMUs in Ukraine can't satisfy UZ's needs, especially those of AC EMUs.

The Ministry of Transport of Ukraine and CarIndustry of Ukraine held negotiations with AT Siemens on the realization of the project "Development and Production of Ukrainian EMUs with asynchronous Driving Gear".

The project includes:

- Delivery by AT Siemens of three sample EMUs adapted to Ukrainian conditions for experiments to UZ.
- Building passenger and freight EMUs with asynchronous gears on Dnepropetrovsk EMU-building plant (25 units a year).

8. **Terms of the project realizations:** the project will be realized in 5 years.

9. **Project documentation available:** the documentation is available.

10. **Investment sum needed:** 430 mln.DM.

11. The money will be returned by the means of:

12. Producing 25 EMUs with asynchronous driving gear a year, with no less than 70% of them being made in Ukraine. This will enable us to reduce the cost of one EMU produced by joint efforts by 1-1,2 mln and to compensate the cost of the EMUs bought in 1997 practically in a year. The maintenance cost of the 25 EMUs in exploitation will be reduced by 1,25-2,5 mln annually.

Present state of affairs: AT Siemens specialists have submitted their project of commercial

Project Title: *Organisation of passenger cars production*

Initiator of the project: Ukrzaliznitsia

Address: 6 Lysenko str., Kiev 252034, Ukraine

Enterprise manager: Anatoly Vasilievich Slobodyan

First Deputy Minister of the transport of Ukraine –
General Director of Ukrzaliznitsia

Phone: 223 00 00

223 00 01

Ownership: state

1. Description of the project:

The Ukrainian railroads are experiencing an acute shortage of passenger cars. While 10000 passenger cars are needed, only 8617 are being operated; besides, 1019 of them have already been depreciated and according to the passenger safety requirements must be excluded from exploitation; by the year of 2000 the passenger cars park is going to be cut down by 2458 units.

In order to solve this problem the Cabinet of Ministry of Ukraine industrial base with the annual capacity of up to 500 passenger cars is to be constructed on the base AT "Krjukov wagon-building plant", with the help of Ukrainian and foreign partners.

Together with the French firm "ALSTOM DDF" we are planning to work out a car construction, to provide technical securities of its production on the modern level and deliver the industrial equipment and components for the experimental party /21 cars/.

At the ATKWBP capacities producing 250 Ukrainian cars a year will be created, and production of the components for them will be organized at Ukrainian plants.

Creation of our own passenger cars production base will allow to provide more than 2600 working places, to increase the annual budget income by about 70 mln HRN, to break free from the constant depend from economic policy of the countries exporting cars and their components.

The project includes:

- Buying construction, technological know-how and imported components for productions an experimental model and 20 passenger cars at the experimental party;
- Joint experimental-construction work together with the firm " ALSTOM DDF " on producing the cars;
- Work on creating the capacities and preparing the KWP industry for passenger cars production;
- Organizing passenger cars production using the French firm " ALSTOM DDF " technologies on the base AT "Krjukov wagon-building plant", the town of Kremenchug, where Ukrainian passenger cars meeting international standards will be produced;
- Implementing the world's best achievements into the construction of the cars and its production technology;
- Organizing Ukrainian passenger cars components production;
- Pounding a wagon-building school for specialists in Ukraine;
- Obtaining engineering basis for high-speed railway transport projecting.

2. **Terms of the project realisation:** the project will be realised for 3 years.

3. **Project documentation available:** Documentation is worked out.

4. **Investment sum needed:** US\$26mln. Credit receiver – AT KWBP.

5. **Money will be due to:** the UZ buying 560 passenger cars from AT KWBP in a 10 year period.

6. **Present state of affairs:** The corresponding contracts are signed. The documents are submitted to the Cabinet of Ministry of Ukraine for the obtaining the government's guarantee.

４－７ 面談者リスト

年月日	機関名	面談者
2000 年 4 月 11 日 (火)	State Administration of Railway Transport of Ukraine “Ukrzaliznitsya”	Mr. J. Kranz: Chief of Department for Development
	Directorate for International Development and European Integration, Ministry of Economy of Ukraine	Ms. O. Kucherenko: Head of Department for Bilateral Economic and Technical Cooperation Mr. S. Khudiyash: Deputy Head of Department for Bilateral Economic and Technical Cooperation Ms. O. Lytvynenko: Senior Expert, Department for Bilateral Economic and Technical Cooperation
2000 年 4 月 12 日 (水)	State Administration of Railway Transport of Ukraine “Ukrzaliznitsya”	Mr. J. Kranz: Chief of Department for Development
2000 年 4 月 13 日 (木)	Odessa Railway Enterprises	Mr. G. Boiko: Deputy Chief Engineer of Odessa Railway Mr. A. Bondarenko: Assistant to the Head of Odessa Railway Mr. L. Taraimovich: Deputy Head of Financial-Economical Service Mr. V. Kapshai: Chief Engineer of Traffic Service Mr. S. Shterkhun: Chief Engineer of Design Institute Mr. A. Tkachuk: Chief Engineer of the Project Mr. N. Grinyov: Head of Technical Divison Mr. Y. Sentsov: Head of Division for Information Analysis and Data Base, “Ukrzaliznitsya”
2000 年 4 月 17 日 (月)	State Administration of Railway Transport of Ukraine “Ukrzaliznitsya”	Mr. J. Kranz: Chief of Department for Development
	Ministry of Transport of Ukraine	Mr. A. Demydenko: Deputy Minister Ms. L. Yevgrafova: Manager of Department for Policy of Investments Mr. A. Zubko: Head of Main Department for Development and Investment Mr. J. Kranz: Chief of Department for Development

2000 年 4 月 18 日 (火)	State Administration of Railway Transport of Ukraine "Ukrzaliznitsya	Mr. J. Kranz: Chief of Department for Development Mr. Y. Sentsov: Head of Division for Information Analysis and Data Base
2000 年 4 月 19 日 (水)	State Administration of Railway Transport of Ukraine "Ukrzaliznitsya	Mr. J. Kranz: Chief of Department for Development
	Directorate for International Development and European Integration, Ministry of Economy of Ukraine	Mr. Ms. O. Lytvynenko: Senior Expert, Department for Bilateral Bilateral Economic and Technical Cooperation
2000 年 4 月 20 日 (木)	State Administration of Railway Transport of Ukraine "Ukrzaliznitsya	Mr. J. Kranz: Chief of Department for Development
	Signing at Directorate for International Development and European Integration, Ministry of Economy of Ukraine	Ukrzaliznitsya Mr. Yu. Phedyushyn: First Deputy General Mr. A. Zubko: Head of Main Department for Development and Investment Mr. J. Kranz: Chief of Department for Development Ministry of Transport Mr. A. Demidenko: Deputy Minister Ms. L. Yevgrafova: Manager of Department for Policy of Investments Ministry of Economy Mr. V. Ignaschenko: Head of Directorate for International Development and European Integration Ms. O. Kucherenko: Head of Department for Bilateral Economic and Technical Cooperation Ms. O. Lytvynenko: Senior Expert, Department for Bilateral Bilateral Economic and Technical Cooperation