KUBRYAVTSEV, N.

PA 22T23

USSR/Aeronautics Aug 1947
Flight Training
Navigation, Aerial

"Visual Study Aids for Radio Navigation," N. Kubryavtsev, 2 pp

"Vestnik Vozdushnogo Flota" No 8 (342)

This article was written in answer to a question by Major I. K. Prosandeyev on what types of visual study aids were available for radio navigational training. Among those aids available are: The figure of a plane with a model RPK frame (with diagram); study aid for clarifying RPK designations (with diagram); study aids for the clarification of designations of a radio compass (with diagram).

22T23

KUDRYAVTSEV, N. F. Docent. Cand. Tech. Sci.

"Visibility of Orientation Points from an Aircraft," Vest. Vozdush. Flota, No.4, 1949

KUDRYAVTSEV, N., [F] COL

Pg. 173T10

USSR/Aeronautics - Flying Instructions Jan 50

"Approach to the Target at a Given Time," Col N. Kudryavtsev, Cand Tech Sci

"Vest Vozdush Flota" No 1, pp 35-39

Instruction method for approach with change of speed and approach with change of course. Map exercise and critique of classroom work.

[redacted]

173T10

KUDRYAVTSEV, N. F.

PHASE X

TREASURE ISLAND BIBLIOGRAPHICAL REPORT AID 752 - X

BOOK

Authors: SOKOLOV, V. I., Maj. Gen. of Aviation, KUDRYAVTSEV, N. F., GORSHKOV, M. P., KUNITSKIY, R. V., TORGMAN, A. I. Call No.: AF65772

Full Title: AIRCRAFT NAVIGATION (Textbook)

Transliterated Title: Samoletovozhdeniye

PUBLISHING DATA

Originating Agency: None

Publishing House: State Publishing House of the Ministry of Defense of the USSR

Date: 1955 No. pp.: 367 No. of copies: Not given

Editorial Staff: Sokolov, V. I., Maj. Gen. of Aviation

PURPOSE AND EVALUATION: A textbook for aviation schools and for the flying personnel of the Air Force. The text is easy to follow. Its value is only instructural.

TEXT DATA

Coverage: The book is presented in an easily accessible form, and is provided with 200 diagrams and 16 tables. The instruments are shown mostly schematically, and are not identified by trademarks. A number of examples of calculation of navigational data are given.

NOTE: See card for SOKOLOV, V. I. for pages 2-4 of the report.

CHIR'YEV, Vladimir Nikolayevich, gvardii polkovnik; KUDRYAVTSEV, N.F., polkovnik, redaktor; MIRNYY, A.S., polkovnik, redaktor; SOROKIN, V.V., tekhnicheskiy redaktor

[Notes of a combat pilot; some problems in flying a single-seat fighter] Zapiski voennogo letchika; nekotorye voprosy vozhdeniia odnomestnogo samoleta. Moskva, Voen. izd-vo Ministerstva oborony Soiuza SSR, 1956. 120 p.
(Fighter planes--Piloting) (MLRA 10:2)

86-58-5-29/38

AUTHOR: Kudryavtsev, N. F., Col (retired) Docent, Candidate of Technical Sciences

TITLE: The First Socialist Detachment (Pervyy sotsialisticheskiy)

PERIODICAL: Vestnik vozdushnogo flota, 1958, Nr 5, pp 70-74 (USSR)

ABSTRACT: The author relates briefly some activities of the first socialist air reconnaissance detachment in the Civil War in 1918-1919. There are 3 photographs.

AVAILABLE: Library of Congress

1. Air force operations - USSR

Card 1/1

FEDRYAVTSEV, N.F.

Measuring surface currents in the presence of waves in the sea. Trudy AANII 254:7-12 '63.

Calculation of the lowering of recorders of self-contained stations under the action of current. Ibid.:21-24

Oscillations of systems of self-contained stations under the action of waves and problems of improving the accuracy of measuring sea currents. Ibid.:25-39

Methodology of short-term forecasting of nonperiodic fluctuations in sea level. Ibid.:79-85

(MIRA 17:11)

GORODENSKIY, N.B.; KUDRYAVTSEV, N.F.

Determinating the drag of the elements of self-contained stations. Trudy AANII 254:13-17 '63.

(MIRA 17:11)

KUDRYAVTSEV, N. F.

"Some problems in hydrography in connection with changes in sea level." Min Maritime Fleet USSR. Leningrad Higher Engineering Maritime School imeni Admiral S. O. Makarov. Leningrad, 1956. (Dissertation for the Degree of Candidate in Technical Sciences).

SO: Knizhnaya letopis', No. 16, 1956

BASKAKOV, G.A.; KUDRYAVTSEV, N.F.

Automatic stations for long-range observations on currents in the open sea. Probl. Arkt. no.2:93-96 '57. (MIRA 11:12)
(Bouys) (Ocean currents)

SOV/124-58-10-11176

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 10, p 68 (USSR)

AUTHOR: Kudryavtsev, N. F.

TITLE: The Laplace Method of Calculating the Lowest and the Highest Tides (Metod Laplasa vychisleniya naimen'shikh i naibol'shikh vysot prilivov)

PERIODICAL: Uch. zap. Leningr. vyssh. inzh. morsk. uch-shche, 1957, Nr 6, pp 23-27

ABSTRACT: The Laplace method of tide-height calculation is investigated and the application of the maximum tide coefficient $c_{max} = 1.20$ for calculations is given theoretical justification. According to Laplace hypothesis the magnitude of β (ratio of the mean lunar and solar effect) in the expression for the height of the sea level obtained by the Laplace method was considered constant and equal to 2.17. Actually the magnitude of β is not constant but depends upon the place of observation. It can be determined by subjecting tide data to harmonic analysis. In accordance with known values of β maximum values for the tide coefficient c_{max} were calculated for a number of different places. The results showed that for

Card 1/2

SOV/124-58-10-11176

The Laplace Method of Calculating the Lowest and the Highest Tides

significant variations of β c_{max} varied only slightly and equalled 1.20.

E. P. Borisova

Card 2/2

KUDRYAVTSEV, N.F.

Establishing the action range of level-gauge stations on seas with tides. Probl.Arkt. no.3:19-28 '58. (MIRA 12:1)
(Tide gauges)

KUDRYAVTSEV, N.F.

Determining the average level of the sea with accuracy set in advance. Probl.Arkt. no.4:15-21 '58. (MIRA 11:12)
(Hydrographic surveying)

BAKSAKOV, G.A.; KUDRYAVTSEV, N.F.

Expedition for the study of currents in the Kara Sea during the navigation period of 1957. Probl.Arkt. no.5:137-139 '58. (MIRA 13:5)

(Kara Sea--Ocean currents)

KUDRYAVTSEV, N. F.

PHASE I BOOK EXPLOITATION SOV/4084

Leningrad. Arkticheskiy i antarkticheskiy nauchno-issledovatel'skiy institut

Problemy Arktiki i Antarktiki; sbornik statey, vyp. 1 (Problems of the Arctic and Antarctic; Collection of Articles, No. 1) Leningrad, Izd-vo "Morskoy transport," 1959. 123 p. Errata slip inserted. 500 copies printed. XEROX COPY

Additional Sponsoring Agency: USSR. Ministerstvo morskogo flota. Glavnoye upravleniye severnogo morskogo puti.

Resp. Ed.: V.V. Frolov; Editorial Board: L.L. Balakshin, A.A. Girs, P.A. Gordiyenko (Deputy Resp. Ed.), I.M. Dolgin, L.G. Kaplinskaya, A.A. Kirillov, Ye.S. Korotkevich, V.V. Lavrov, I.V. Maksimov, A.I. Ol', I.I. Poznyak, and B.V. Felisov; Tech. Ed.: L.P. Drozhzhina.

PURPOSE: The publication is intended for geographers, oceanographers, and readers interested in the study of the Arctic and Antarctic regions.

Card 1/5

COVERAGE: This collection of 17 articles published by the Arctic and Antarctic Scientific Research Institute deals with the following: ice conditions in the Arctic Seas, atmospheric circulation and turbulence, the problem of albedo on drifting ice, the intensity of cosmic rays, and the use of aerial photography in ice reconnaissance. Tables of instrumental corrections for reading deep-sea reversing thermometers are included. References follow the articles.

TABLE OF CONTENTS:

Problems of the Arctic and Antarctic (Cont.) SOV/4084

Card 3/5

NOTES

INFORMATION

KUDRYAVTSEV, N.F.

Method of computing ordinates of water level fluctuations in the open sea (from observation data obtained with tide guages of the Graafen system). Probl.Arkt. no.6:112-117 '59. (MIRA 13:6)
(Tides)

KUDRYAVTSEV, N.T.

PHASE I BOOK EXPLOITATION SOV/4149

Leningrad. Arkticheskiy i Antarkticheskiy nauchno-issledovatel'skiy institut

Problemy Arktiki; sbornik statey, vyp. 7 (Problems of the Arctic; Collection of Articles, No. 7) Leningrad, Izd-vo "Morskoy transport," 1959. 135 p. 500 copies printed. XEROX COPY

Additional Sponsoring Agency: USSR. Ministerstvo morskogo flota.

Resp. Ed.: V.V. Frolov; Editorial Board: L.L. Balakshin, A.A. Girs, P.A. Gordiyenko (Deputy Resp. Ed.), I.M. Dolgin, L.G. Kaplinskaya, A.A. Kirillov, Ye.S. Korotkevich, V.V. Lavrov, I.V. Maksimov, A.I. Ol', I.I. Poznyak, and B.V. Felisov; Tech: L.P. Drozhzhina.

PURPOSE: The publication is intended for geographers, oceanographers, and particularly for all those interested in the studies of Arctic and Antarctic regions.

COVERAGE: This collection of 19 articles is the seventh of a series of publications dealing with problems of the Arctic and Antarctic. The articles deal mainly with the characteristics of water in the Barents Sea, hydrological conditions in the estuaries of Siberian rivers, types of atmospheric circulation in the Arctic,

Card ~~1/5~~

distribution of the hydrological stations in the Soviet Arctic, magnetic storms and their effect on radio communications. Included is brief information on Soviet meteorological and oceanographical expeditions. References accompany most of the articles. No personalities are mentioned.

TABLE OF CONTENTS:

KUDRYAVTSEV, N.F.

Method of measuring surface currents by the drift of free-floating devices. Probl.Arkt.i Antarkt. no.2:107-113 '60. (MIRA 13:6)

(Ocean currents)

KUDRYAVTSEV, N.F.

A method for calculating extreme tidal heights. Okeanologiia 1 no.4:741-743 '61. (MIRA 14:11)

(Tides)

GORODENSKIY, N.B.; KUDRYAVTSEV, N.F.; LABEYSH, V.G.

Model studies of the action of currents and waves on the selfcontained observation station. Trudy AANII 210:13-22 '61. (MIRA 14:11)

(Oceanographic instruments)

IZVEKOV, M.V.; KUDRYAVTSEV, N.F.

Oscillation of self-contained station systems due to wave action and its effect on the accuracy of current measurements. Trudy AANII 210:23-28 '61. (MIRA 14:11)

(Oceanographic instruments)

KUDRYAVTSEV, N.F.

Thermal inertia of Graafen's tide gauges and method for its determination. Trudy AANII 210:46-52 '61. (MIRA 14:11)
(Tide gauges)

KUDRYAVTSEV, N.F.

Processing level observations obtained by Graafen's tide gauges.
Trudy AANII 210:53-56 '61. (MIRA 14:11)
(Tide gauges)

KUDRYAVTSEV, N.F.

Problems in increasing the accuracy of measuring the direction of ocean currents. Trudy AANII 210:75-84 '61. (MIRA 14:11)
(Ocean currents)

KUDRYAVTSEV, N.F.; SERGEYEV, G.N.

The technique of current measurement from drift ice in regions of great depths. Trudy AANII 210:102-105 '61. (MIRA 14:11)
(Arctic regions--Ocean currents) (Sea ice)

KUDRYAVTSEV, N.F.

Method of determining the true submersion depth of bathometers.
Trudy AANII 210:11[illegible]22 '61. (MIRA 14:11)
(Bathometer)

KUDRYAVTSEV, N.F.

Method of reducing depth measurements to the established datum on the basis of observations made at two or more level-gauging stations in seas with tides. Trudy AANII 210:193-218 '61. (MIRA 14:11)
(Tides)

KUDRYAVTSEV, N.F.

Methods of the calculation of dynamic loads conditioned by the effect of currents and waves on the elements of autonomous stations. Okeanologiia 4 no.1:142-145 '64. (MIRA 17:4)

KUDRYAVTSEV, N.F.

Practice in the calculation of nonperiodical currents in the sea based on the data of coast level observations. Probl. Arkt. i Antarkt. no.16:83-87 '64. (MIRA 17:6)

KUDRYAVTSEV, N.F.; NIKIFOROV, Ye.G.

Selection of rational constructions and optimum parameters of instruments for measuring currents in a layer enveloped by wave action. Okeanologiia 4 no.3:479-487 '64 (MIRA 18:1)

1. Arkticheskiy i antarkticheskiy nauchno-issledovatel'skiy institut.

KUDRYAVTSEV, N. I.

6

PROCESSES AND PROPERTIES INDEX

Copper-Plating of Aluminium Contacts. N. J. Kudrjavtzev and U. L. Derjavina (*Vestnik Elektropromishlennosti* (*Messenger Elect. Ind.*), 1934, (8), 29-33).—[In Russian.] Methods are described for the preparation of aluminium surfaces for copper plating, to obtain the best quality of deposits. Very dirty surfaces should first be cleaned by mechanical brushing; the metal is then degreased by treatment with organic solvents (benzene, carbon tetrachloride, trichlorethylene), washed in 10% caustic soda solution, saturated cold with sodium chloride, washed with 2% hydrochloric acid, electrolyzed with alternating current for 1 minute in 0·50–0·75 *N*-oxalic acid at a current density of 25 amp./dm.^{2}, 60–80 v., and etched in a hot (90°–95° C.) solution containing potassium carbonate crystals 23 grm., and sodium bicarbonate 45 grm./litre. Alternatively, after the first 4 steps outlined above, the metal may be immersed for 5–8 minutes in a hot solution of 0·1–0·7 *N*-hydrochloric acid containing 6–22 grm./litre of ferric chloride. Thorough washing after each operation is essential. The copper-plating electrolyte comprises a 1·5 *N*-solution of copper sulphate in *N*-sulphuric acid; plating is done at 18°–20° C. with a current density 1–1·5 amp./dm.^{2}.—N. A.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

KUDRYAVTSEV, N.I.

Electrodeposition and protective value of zinc-cadmium alloys. N. I. Kudryavtsev and E. R. Peretturina (*J. appl. Chem., USSR*, 1952, 26, 155—159; *Electroplating*, 1954, 7, 372—375).—Two solution compositions for optimum Cd–Zn alloy deposition are given, one with a low and one with a high content of Cd. For both solutions, the influence of the ratio of Zn to Cd on the composition of the deposit was investigated. The influence of the current density on the composition of the deposit and on the current efficiency was determined. Corrosion tests were conducted with 10% aq. NaCl at room temp. and it was found that alloys containing more than 80% of Cd showed a corrosion resistance equal to that of pure Cd. D. J. C. Yates.

KUDRYAVTSEV, N. I.

512 The Electrodeposition and Protective Value of Zinc-Cadmium Alloys. N. I. Kudryavtsev and E. F. Petetrina. Electroplating and Metal Finishing, 7, Oct. 1954, p. 372-375. (From Zhurnal Prikladnoi Khimii SSSR, v. 26, no. 2, 1953, p. 155-159.)

Factors influencing joint deposition. Corrosion resistance of various compositions. Tables, graphs.

USSR.

KUDRYAVTSEV, N.I.

SOV/137-59-1-459

Translation from: Referativnyy zhurnal. Metallurgiya, 1959, Nr 1, p 57 (USSR)

AUTHORS: Kudryavtsev, N. I., Rudyakov, I. F.

TITLE: Automatic Discharge of Alumina Into Electrolytic Tanks (Avtomaticheskaya razgruzka glinozema na elektroliznykh vannakh)

PERIODICAL: Prom-ekon. byul. Sov. nar. kh-va Sverdl. ekon. adm. r-na, 1958, Nr 4, pp 50-51

ABSTRACT: The design of a hopper (H) with automatic gates proposed by the authors would eliminate the need for the operator's participation in the process of unloading of alumina (A) into the electrolytic tanks and would also reduce the time required for charging. The mobile H containing the A is positioned in such a manner that the crossarm of the gate rests on the H of the tank. Under the weight of the H containing the A the springs are compressed, and the cone-shaped gate together with the crossarm is raised into its upper position thus discharging the A from the H. Prolonged operation of such H's in the electrolysis shop of the first Ural aluminum plant demonstrated their superiority over H's equipped with manually operated slide gates. L. S.

Card 1/1

KUDRYAVTSEV, Nikolay Maksimovich [Kudriavtsev, M.], svinar';
REBRO, P., red.; PAKHOLYUK, R., tekhn.red.

[For 1500 centners of pork] Za 1500 tsentneriv svynyny.
Zaporozh'e, Zaporiz'ke knyzhkovo-gazetne vyd-vo, 1960.
14 p. (MIRA 14:12)

1. Sovkhoz "Bol'shevik", Melitopol'skogo rayona (for Kudryavtsev).
(Ukraine--Swine)

KUDRYAVTSEV, N.M.

Vibration cutter for cutting washers. Stroi.pred.neft.prom. 1 no.8:16 O '56. (MLRA 9:12)

1. Brigadir Montazhnogo upravleniya no.7, trest Neftezavodmontazh, Molotov.

(Cutting machines)

KUDRYAVTSEV, N.M.

Semiautomatic tools for oxyacetylene cutting of pipes. Suggested by N.M.Kudriavtsev . Rats.i izobr.v stroi. no.9:96-101 '59. (MIRA 13:1)

1. Po materialam tresta Neftezavodmontazh Ministerstva stroitel'-stva RSFSR, Moskva, K-12, pr. Vladimirova, d.6.
(Gas welding and cutting) (Pipe cutting)

BIRULYA, A.K.; KUDRYAVTSEV, N.M.

Stability of road surfaces according to direct measurements.
Avt. dor. 21 no.2:15-17 F '58. (MIRA 11:2)
(Pavements--Testing)

KUDRYAVTSEV, N. M., Cand Tech Sci -- (diss) "Research into the strength of nonrigid road surfacings by method of static charging." Khar'kov, 1960. 19 pp; (Ministry of Higher and Secondary Specialist Education Ukrainian SSR, Khar'kov Motor Vehicle and Road Inst); 150 copies; free; (KL, 23-60, 124)

BIRULYA, A.K.; KUDRYAVTSEV, N.M.; MIKHOVICH, S.I.

Evaluating the strength of pavements by testing with repeated loading. Trudy Khar. avt.-dor. inst. no.28:3-12 '62.
(MIRA 17:2)

S/194/61/000/009/010/053
D222/D302

AUTHOR: Kudryavtsev, N.N.

TITLE: Multiprogram device for the statistical processing of oscill[redacted]

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 9, 1961, 10, abstract 9 B68 (V sb. Kibernetika i avtomatiz. transp. protsessov, M., Transzheldorizdat, 1960, 267-273)

TEXT: This device has been developed in TsNII MPS and has the following technical characteristics: Number of classes of amplitude recording 15; limits of scale variation of processing 0.4 - 5 mm/V; number of simultaneously processed processes 4; processing with fixed and floating zero; the readings of counters can represent an integral or differential function of the distribution; power consumption from 127/220 V a.c. is 250 w. The device is used for the statistical processing of oscillograms obtained during the dynamic

Card 1/2

S/194/61/000/009/010/053
D222/D302

Multiprogram device...

testing of waggons. The circuit diagram is given. 11 figures.
[Abstracter's note: Complete translation]

Card 2/2

KUDRYAVTSEV, N.N.; RZHECHITSKIY, E.K.

Assembling large sections of steel pipe lines [Suggested by N.N. Kudriavtsev, Rzhechitskii, E.K.]. Rats.i izobr.predl.v stroi. no.148:3-5 '56. (MLRA 10:5)
(Pipelines--Welding)

KUDRYAVTSEV, N.N.; RZHECHITSKIY, E.K.

Laying asbestos-cement pipes in units of two. [Suggested by N.N. Kudriavtsev, E.K. Rzhechitskii]. Rats.i izobr.predl.v stroi. no.148: 6-7 '56. (MLRA 10:5)

(Pipe, Asbestos-cement)

PA 161T55

USSR/Engineering - Boilers, Gas-Fired Fuels May 50

"Problem of Burning Gas in Boiler Furnaces," N. N. Kudryavtsev, G. V. Kalgina, 2½ pp

"Energet Byul" No 5

Babcock and Wilcox boiler designed to burn solid fuel was modified to burn natural gas. Operated satisfactorily for 1½ months, and was then subjected to a full power trial, during which dull explosion in the uptakes was heard, front and sides of boiler being enveloped in flame. Apparently, unburnt natural gas accumulated in "dead end" in

161T55

[redacted]

USSR/Engineering - Boilers, Gas-Fired (Contd) May 50

the uptakes, where it became mingled with air leaking into the casing. This formed explosive mixture, which was set off by spark borne upward when boiler was on full load. Various defects of design and workmanship were eliminated, and trial was repeated with satisfactory results. Points out lessons to be learned.

161T55

[redacted]

KUDRYAVTSEV, N. N.

KUDRYAVTSEV, N. N.

Strength of Construction Elements

Dissertation: -- "Measurement of Deformation in the Axle of a Wheel Pair During Movement of the Car." Cand Tech Sci, All-Union Sci Res Inst of Railroad Transport, Moscow, 1953. (Referativnyy Zhurnal -- Mekhanika, Moscow, Mar 54)

SO: SUM 213, 20 Sep 1954

KUDRYAVTSEV, N.N., kandidat tekhnicheskikh nauk.

Studies on the dynamics of railroad car axles. Trudy TSNII MPS no.105:5-65 '55. (MLRA 9:2)
(Car axles)

124-58-9-9551

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 9, p 14 (USSR)

AUTHOR: Kudryavtsev, N. N.

TITLE: The Dynamic Forces Acting on the Axles of Wheel Pairs of Passenger Cars (Dinamicheskiye sily, deystvuyushchiye na osi kolesnykh par passazhirskikh vagonov)

PERIODICAL: Vestn. Vses. n.-i. in-ta zh.-d. transp., 1957, Nr 7, pp 18-23

ABSTRACT: Presentation of the results of investigations of the dynamic forces that arise through the interaction of wheel pairs with the roadbed with due account of the elastic properties of the axle and the sprung masses connected with the journal bearing. It is experimentally established that the dynamic overload coefficient of the axle is significantly higher than that of the springs resting on the journal boxes; it grows with increasing weight of the box assembly and diminishes with increasing static load on the bearing journal of the axle. The results of the experiments are shown graphically. The highest value of the overload coefficient on the spring resting on the journal box equals 1.2, that of the cantilever portion of the axle equals 2.3. During a motion at 120 kph through a curve having a radius

Card 1/2

124-58-9-9551

The Dynamic Forces Acting on the Axles of Wheel Pairs of Passenger Cars

R=600 m and a superelevation of 115 mm the overload coefficient of the axle section just inboard of the journal attains a value of 3.4; the friction coefficient of the wheel upon the rail in a transverse direction equals 0.23-0.25.

K. S. Kolesnikov

1. Passenger vehicles--Stresses 2. Friction--Applications 3. Dynamics--Theory
4. Mathematics--Applications

Card 2/2

KUDRYAVTSEV, N.N., kand.tekhn.nauk

More precise method of measuring frame forces acting on car trucks. Vest. TSNII MPS [17] no.7:48-50 N '58. (MIRA 11:12)
(Railroads--Cars--Testing)

ABASHKIN, V.V., kand.tekhn.nauk; DEVYATKOV, V.F., kand.tekhn.nauk; KUDRYAVTSEV, N.P., kand.tekhn.nauk; PAVLOV, I.V., kand.tekhn.; nauk; SHARONIN, V.S., kand.tekhn.nauk

Judging track conditions by the forces of its interaction with rolling stock. Vest.TSNII MPS 19 no.1:10-13 '60. (MIRA 13:4)

(Railroads--Track)

KUDRYAVTSEV, N.N., kand.tekhn.nauk

Dynamics of the movement of a flat whell. Vest.TSNII MPS 19 no.2:30-34 '60. (MIRA 13:6)
(Wheels)

MEYSNER, B.A., kand.tekhn.nauk; KUDRYAVTSEV, N.N., kand.tekhn.nauk

Using POB-14 oscillographs in car laboratories. Vest. TSNII MPS 19 no.5:56-58 '60. (MIRA 13:8)
(Railroads--Rolling stock--Testing)
(Oscillographs)

KUDRYAVTSEV, N.N., kand.tekhn.nauk

Studying the dynamic overloading of the axles of freight car wheel pairs. Vest. TSNII MPS 20 no.7:28-32 '61. (MIRA 14:12)
(Car axles--Testing)

ABASHKIN, V.V., kand.tekhn.nauk; KUDRYAVTSEV, N.N., kand.tekhn.nauk; DOIMATOV, A.A., kand.tekhn.nauk; ANISIMOV, P.S., inzh.

Effect of track stiffness on the running gear of cars.
Zhel.-dor.transp. 43 no.9:67-69 S '61. (MIRA 14:8)
(Railroads--Track)

ABASHKIN, V.V., kand.tekhn.nauk; MUDRYAVTSEV, N.N., kand.tekhn.nauk; DEVYATKOV, V.F., kand.tekhn.nauk; PAVLOV, I.V., kand.tekhn.nauk; SHARONIN, V.S., kand.tekhn.nauk

Force method for determining the characteristics of the track condition. Trudy TSNII MPS no.221:175-200 '61. (MIRA 15:1)
(Railroads--Track)

DOLMATOV, A.A., kand. tekhn. nauk; KUDRYAVTSEV, N.N., kand. tekhn. nauk; SHADUR, L.A., doktor tekhn. nauk, retsenzent; POPOV, A.V. inzh., red.; VASIL'YEVA, N.N., tekhn. red.

[Dynamics and strength of four-axle railroad tank cars.] Dinamika i prochnost' chetyrekhosnykh zheleznodorozhnykh tsistern. Moskva, Transzheldorizdat, 1963. 122p. (Moscow. Vsesoiuznyi nauchno-issledovatel'skiii institut zheleznodorozhnogo transporta. Trudy, no.263).

(MIRA 16:11)

KUDRYAVTSEV, N. N., kand. tekhn nauk

Determining the excitation functions in the study of car vibrations. Vest TSNII MPS 23 no. 3:9-13 '64. (MIRA 17:5)

KUDRYAVTSEV, Nikolay Nesterovich, kand.tekhn.nauk; CHERNYSHEV, V.I., red.

[Investigating the dynamics of unsprung car masses.] Issledovanie dinamiki neobressorennykh mass vagonov. Moskva, Transport, 1965. 167 p. (Moscow. Vsesoiuznyi nauchno-issledovatel'skii institut zheleznodorozhnogo transporta. Trudy, no.287)

(MIRA 18:3)

KUDRYAVTSEV, N.N., kand. tekhn. nauk

Use of analog electronic computers for studying the interaction between wheel and rail. Vest. TSNII MPS 23 no.7:7-12 '64.
(MIRA 18:3)

KUCHKO, I.I.; KUDRYAVTSEV, N.P.

Production of economical rolled shapes at the Kuznetsk Metallurgical Combine. Metallurg 7 no.5:22-25 My '62. (MIRA 15:5)

1. Kalibrovochnoye byuro Kuznetskogo metallurgicheskogo kombinata.

(Novokuznetsk--Rolling mills)

SOV/130-59-1-9/21

AUTHORS: Kuchko, I.I. and ~~Kudryavtsev, N.P.~~

TITLE: Open Form of Passes in Rolling H-Beams (Razvernutaya forma kalibrov pri prokatke dvutavrovykh balok)

PERIODICAL: Metallurg, 1959, Nr 1, pp 20-22 (USSR)

ABSTRACT: The authors discuss the normal closed flange passes (Fig 1) used for H-beam rolling and point out their defects. They go on to describe a new pass design (Fig 2) developed and adopted to increase roll durability and mill productivity and improve the surface quality of the finished product. In this greater inclination of the flange is obtained by bending of the web. The new system has considerably increased roll-life before re-turning and the effectiveness of renovation. Fig 3 shows a comparison of the final passes (6-10) for the normal (a) and the new (b) pass designs. A table shows the capacity between re-turning

Card 1/2

Open Forms of Passes in Rolling H-Beams SOV/130-59-1-9/21

for various beam numbers for the normal and new designs. The authors consider the new designs especially suitable for lightened-type H-beams.
There are 3 figures and 1 table.

ASSOCIATION: Kuznetskiy metallurgicheskiy kombinat (Kuznetsk metallurgical combine)

Card 2/2

SOV/133-59-6-21/41

AUTHORS: Kuchko, I.I. and Kudryavtsev, N.P., Engineers

TITLE: Roll Pass Designing and Rolling of Large (Nr 40) Light Weight Channel (Kalibrovka i prokatka oblegchennogo shvellera No 40)

PERIODICAL: Stal', 1959, Nr 6, pp 538-543 (USSR)

ABSTRACT: The profile of the light weight beam Nr 40 (GOST 8240-56) differs considerably from the usual profile of this beam (OST 10017-39), see Fig 1. The roll pass design and the technology of rolling this beam used on the Kuznetsk Combine are described. There are 10 figures and 1 table.

ASSOCIATION: Kuznetskiy metallurgicheskiy kombinat (Kuznetsk Metallurgical Combine)

Card 1/1

MALYSHEV, S.I.; KUDRYAVTSEV, N.P.; KARTA, V.G.

Mastering the rolling of beam columns on the rail and structural steel 800 mill. Stal' 23 no. 3 253-255 Mr '64. (MIRA 17:5)

KUDRYAVTSEV, N.P.; MUKUNDAN, V.

Mastering the rolling of a 100 x 50 x 4.7 mm channel on a semicontinuous 350 mill. Metallurg 9 no.9:30-31 S '64. (MIRA 17:10)

1. Ekhilayskiy metallurgicheskiy zavod.

KUDRYAVTSEV, N.P.; RAMO RAO, A.G.; MALYSHEV, S.I.

Rolling H-beams on the 350 semicontinuous mill at the "Bkhilaiskii" Metallurgical Plant. Stal' 24 no.5:443-444 My '64. (MIRA 17:12)

L 42941-66 EWT(m)/EWP(w)/T/EWP(t)/ETI IJP(c) JD/WW/JG

ACC NR: AP6029682 SOURCE CODE: UR/0369/66/002/004/0422/0425

61
B

AUTHOR: Abramyan, E. A.; Ivanov, L. I.; Kudryavtsev, N. S.; Yanushkevich, V. A.

ORG: Institute of Metallurgy im. A. A. Baykov, AN SSSR, Moscow (Institut metallurgii AN SSSR)

TITLE: Effect of vacuum on the creep of β-zirconium at high temperature

SOURCE: Fiziko-khimicheskaya mekhanika materialov, v. 2, no. 4, 1966, 422-425

TOPIC TAGS: zirconium, creep, vacuum ~~effect~~, ~~zirconium~~ technique, rupture ~~life~~ strength

ABSTRACT: The effect of vacuum (10^{-6} to 10^{-1} mm Hg) on the creep rate and rupture life of zirconium at 1100—1300C and under stresses of 5—30 kg/mm^2 has been investigated. In a vacuum of about 10^{-5} at 1200C, the creep rate was constant for more than 10 hr. The specimens did not fail and the material was very ductile. With the pressure in the vacuum chamber increased to 10^{-4} mm Hg, the creep rate was found to decrease continuously with time. Simultaneously with a drop of ductility, the rupture life decreases and the failure occurs in a very short time. The negative effect of higher pressure on rupture life and ductility becomes more intensive with increasing temperature and stress. Orig. art. has: 3 figures. [WW]

SUB CODE: 11/ SUBM DATE: 28Feb66/ ORIG REF: 005/ OTH REF: 005/ ATD PRESS: 5069

Card 1/1 MLP

1936-1957

KUDRYAVTSEV, N.T.

23

Leiner, W. L., and N. T. Kudriavtsev. *Die Grundlagen der Galvanostegie.* Teil 1. [In Russian.] Pp. 368. 1936. Moscow and Leningrad: ONTI. (Rbl. 4.)

ASD-SLA METALLURGICAL LITERATURE CLASSIFICATION

KUDRYAVTSEV, N.T.

23

Leiner, W. L., and N. T. Kudryavtsev. *Fundamentals of Electrodeposition.* [In Russian.] Volume II. Pp. 314. 1938. Moscow and Leningrad: Gontl. (Rbl. 5.50.)

CA

4

Electroplating with zinc. N. T. Kudryavtsev and A. A. Nikiforova. Russ. 54,827, April 30, 1939.—Bright deposits are obtained by incorporating in acid electrolytes Na 2,6- or 2,7-naphthalenedisulfonate.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

CD

9

A comparison of the protective capacities of zinc and cadmium films. N. T. Kudryavtsev, *Korrozya i Borba s Nei* 3, No. 5-6, 3-9(1939).—A critical review. Since Cd films are more uniform in thickness than Zn, the av. thickness of Cd required for protection is 25-30% less than that for Zn.

C. S. Shapiro

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

Met Abs

6 Electrodeposition

Electrolytic Production of "Bright" Zinc Plate from Weakly Acid Electrolytes. N. T. Kudryatsev and A. A. Nikiforova (*Korrozija i Bor'ba s Nej* (*Corrosion and the Fight Against It*), 1939, 8, (5-6), 56-72; *Novaja Tekhnol. v Avtostroenii, Pervoe Obsuzhdenie Uprazlenie NKAP, Kabinet Obmena Opytom po Novoi Tekhnol. i Organizatsii Proizvodstva*, 1939, (4), 78-80; *Khim. Referat. Zhur.*, 1940, (2), 88; *C. Abs.*, 1942, 36, 1850).—[In Russian.] K. and N. selected a 3N-solution of $ZnSO_4 + Al_2(SO_4)_3 \cdot 18H_2O + Na_2SO_4 \cdot 10H_2O$, p_H 4·0-4·5, bath temperature >25° C., cathode c.d. 3-7 amp./dm.², stirring with compressed air. The effects of forty additions of organic and inorganic origin were investigated. Na 2:6- or 2:7-naphthalenedisulphonate and thiourea gave best results. The purity of the electrolyte is very important for "bright" plate. Three types of anodes were tried; the best were: Zn + Al (~0·5%) + Hg (~0·3%). To brighten dull zinc deposits dip them into CrO_3 (150 grm./litre with H_2SO_4 4 grm./litre).

CR

4

Electroplating with Zn. N. T. Kudryavtsev and A. A. Nikiforova. Russ. 57,500, July 31, 1940. A fine-crystalline, dense and bright film is obtained by adding to the electrolyte a stannic salt.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

CA

11

Zinc plating from alkaline electrolytes. N. P. Kudryavtsev and A. A. Nikiforova. *Korrozivya i Borba s Nei* 8, No. 2, 44-6(1940); cf. *C. A.* 34, 1850[8].—The method proposed produces bright, dense Zn deposits quite satisfactory for industrial use. The main factor in the new electrolyte is the presence of Sn ions. The relative effect of concns. of Sn^{++}, OH^- and Zn^{++} on the quality of the deposit was thoroughly investigated. The best results were obtained with a plating bath of Zn 0.25 *N*; KOH 1.6 *N*; Sn 0.25 g./l. The beneficial effect of Sn salts is limited to the concn. range of 0.1-0.25 g./l. as metallic Sn. Hg and Pb salts may be added with good results, although their effectiveness is less than that of Sn. Very good deposits result when both Sn and Pb salts are present. CO_3^{--} and SO_4^{--} in the electrolytes along with Sn reduce the quality of the Zn deposit slightly. The dependence of the throwing power of the various Zn baths on temp., c. d. and compn. of the electrolyte was studied. The acid and alk. electrolytes were compared with each other and with the cyanide baths. The throwing power of the alk. (zincate) baths is intermediate between that of the acid and that of the cyanide baths, approaching the latter more closely. The throwing power was detd. by measuring directly the thickness of the film at different areas of the surface. Both sides of the cathode were thus investigated.

C. S. Shapiro

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

CA

The method of gold-plating the star of the Soviet pavilion at the N. Y. World's Fair. N. T. Kudryavtsev and collaborators. *Korrozya i Borba s Nei* 6, No. 2, 46-7 (1940). - As a result of previous expts. and observations during the process of Au plating of the stars and clocks at the Kremlin towers it was found that thermopreme used to insulate the back side of the stars) is destroyed in the cyanide bath, introducing colloidal impurities that cause defective Au plate. Ag is the best metal for undercoat. Various other stopoff coatings were tested and found to be unstable. Accordingly a new method was developed, in which the back side was not coated with any stopoff and the whole procedure of Au-plating was modified. The steps were: (1) Fine polishing of the side to be plated, (2) washing in benzine, brushing with hair-bristled brushes wetted in benzine, wiping with cotton flannel cloth, (3) degreasing with a paste of Vienna lime, (4) chem. etching in 3% KCN soln., (5) amalgamation in a soln. contg. $Hg(CN)_2$ and KCN (5 and 10 g./l., resp.), (6) Ag-plating in a soln. contg. Ag 15-30 and KCN (free) 20-40 g./l. The cathode c. d. was 0.2 amp./sq. dm. at 20°. The film obtained was 50-70 μ thick. The Ag plating was in 3 stages: (a) 7-10 μ; (b) 30-35 μ and (c) 10-20 μ. After each stage the plated article was dipped into a 0.5% soln. of tartaric acid, then scratch-brushed and gradually heated in an oven at from 60° to 120° during 3-5 hrs. Just before the next stage of Ag-plating the article was rubbed with a semifluid chalk paste and then rubbed with a 3% Na_2CO_3 soln. It was then washed in water and dipped into a 3% KCN soln. The Au-plating was done in a soln. contg. Au 3-5 g./l. and KCN (total) 12-20 g./l., c. d., 0.05-0.15 amp./sq. dm. at 60°. The thickness of the Au film was 25-40 μ. The process of Au-plating was interrupted three times in order to scratch-brush the surface of the film. The piece was immersed in 0.5% tartaric acid soln. and treated as in the Ag-plating, except that heating in the oven was done at 80-100.8°. The gold plate was finally buffed and then given 2 coats of lacquer, baked on.

C. S. Shapiro

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

***Protective-Decorative Finish of Aluminium Surfaces.** G. A. Zubova and N. T. Kudryatsev (*Korrozija i Bor'ba s Ney.* 1940, **6**, (5-6), 45-52; *Khim. Referat. Zhur.*, 1941, **4**, (7-8), 136; *C. Abs.*, 1944, **38**, 920).—[In Russian.] The object of the experiments was to check and improve the existing methods and conditions for surface treatment of aluminium to determine the most effective methods resulting in highly corrosion-resistant and decorative finishes. Best results were obtained upon anodizing aluminium in 20% H_2SO_4 solution for 30 minutes at 20° C. with a cell voltage of 15 v. The films are colourless and form a good basis for dyes. Best dyeing results were obtained by treatment for 15 minutes in 0·5% solutions of organic dyes at 100° C. Corrosion tests showed high resistance. Prolonged contact of the dyed films with water resulted in washing away of the colour. Aluminium samples coloured after anodizing in H_2SO_4 solution faded less readily than did samples otherwise coloured ....

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

C 1

4

Electrolytic production of "bright" zinc deposits on metals. N. T. Kudryavtsev and A. A. Nikitinova. *Izvestiya Sovetskogo po Voprosam Korrozii* 1940, 231-8; *Khim. Referat. Zhur.* 1940, No. 7, 135; cf. C. A. 35, 2809; 36, 1859.--Conditions for obtaining "bright" Zn deposits from acid electrolytes with relatively high c. ds. for sym. objects and relatively "bright" deposits from acid Zn baths for relief objects are described. "Bright" Zn plate possesses a fine-grained structure with a definite orientation of the crystals in the cathodic deposits and with high corrosion resistance. The electrolyte proposed is: $ZnSO_4.7H_2O$ 430 g./l. (approx. 3 N), $Al_2(SO_4)_3.18H_2O$ 30 g./l., $Na_2SO_4.10H_2O$ 50-150 g./l., 2,6- or 2,7-$C_{10}H_6(SO_3Na)_2$ 3 to 5 g./l., temp., not higher than 25°. The pH is 4.0-4.5 and the c. d. 3-8 amp. sq. dm. The 2,6-$C_{10}H_6(SO_3Na)_2$ and the 2,7-$C_{10}H_6(SO_3Na)_2$ must be neutralized with soda before adding them to the bath. During electrolysis the electrolyte is stirred with compressed air. This bath can be used for plating sym. objects with simple configuration only, i. e., its throwing power is low. Zn plate thus obtained is ductile, not brittle, and adheres well to the basis metal. Dull Zn plate can be brightened by treating it at room temp. for 3-10 sec. in a soln. consisting of CrO_3 150 and H_2SO_4 4 g./l. The surface of the plate which had not been treated in CrO_3 soln. becomes dull after 3-4 days. Treated plate remains unchanged even after 23 days. The brightening and the increase of the corrosion resistance of Zn plate treated with the CrO_3 soln. is attributed to the passivation of the surface, by the removal from the surface of individual cryst. formations or of cryst. facets which facilitate corrosion. W. R. Henn

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

4

The influence of tin and lead salts in Zn electrolytes on cathodic polarization. N. T. Kudryavtsev and G. A. Subbotin. *Korrozija i Borba s Nej* 7, No. 2, 27-32(1941); *Chem. Zentr.* **1945**, I, 1035.—Cathodic polarization in Zn electrolytes is relatively small and is but little influenced by conditions of electrolysis. On addn. of a small amt. of Sn salt the cathode potential is electroneg., although the change is not great. On increasing temp. or concn. of Zn, the potential becomes less neg. With increasing concn. of liquor it becomes more neg. The presence of carbonate as well as Sn has no significant effect. The current efficiency is 97 to 99%. In the absence of Sn or Pb the deposit is hard and spongy; in their presence, it is compact and solid and in the case of Pb bright and silverlike.

J. B. Austin

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

4

Effect of salts of some metals (Hg, Sn, and Pb) on the cathodic process in zincate electrolytes. N. T. Kudryavtsev. *Trudy Konferentsii Korrozii Metal.* 2, 175-85 (1943); cf. *C.A.* 38, 6209. Good Zn deposits are obtained on steel from Na_2ZnO_2 solns. when the bath contains some $HgCl$, $HgCl_2$, $Pb(OAc)_2$, or $SnCl_2$. In presence of Pb and Hg a higher temp. (about 80°) is required, which impairs the throwing power, but Sn is effective also at 50°. The bath compo. recommended is 0.24-1.0 *N* Na_2ZnO_2, 1.5-4.5 *N* NaOH, 0.15-0.25 g. of Sn l.; the c.d. is 0.6-2 amp./sq. dm. at 50° and 1.1-3.0 amp./sq. dm. at 80°. Anodes of tech. Zn contg. Pb are better than pure Zn anodes. The deposit contains 0.1-0.3% of Sn, although about 1% of Sn is consumed. The highest c.d. giving a good deposit increases at 80° from 1 amp./sq. dm. at 0.15 *N* Zn to 6 amp./sq. dm. at *N* Zn. The cathodic potential of Zn deposit is made more neg. by the admixt. of Sn by about 1 mv. The overvoltage of H on the Zn-Sn electrodes is greater than on Zn from an acid bath. The throwing power was detd. by measuring the thickness of deposit at various spots on a cathode placed at an angle to the anode. It is almost as high as that of the cyanide bath, but is lowered when Zn concn. and c.d. increase and NaOH concn. decreases. The cathodic current yield is 97-99%. The bath is stable, but requires addns. of NaOH because of absorption of CO_2. B. C. P. A.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

KUDRIAVTSEV, N. T.

KUDRIAVTSEV, N. T. Electrolytic zinc plating. Moskva, Metallurgizdat, 1944. 50 p.
Cyr. 4 TS45

KUDRYAVTSEV, N. T.

PA 26T9

USSR/Electricity Apr 1947
Cathodes
Electrolytes

"Intensification of the Cathode Process in Zincate Electrolytes," N. T. Kudryavtsev, A. I. Lipovetskaya, K. N. Kharlamova, Committee on Galvanizing, VSNITO, 4 pp

"Vest Inzher i Tekh" No 4

The article discusses the effect of the addition of special mixtures to electrolytes on the safety limits of cathode current, and the effect of mixing on the dispersion capacity of the electrolyte.

ID 26T9

USSR/Electricity (Contd) Apr 1947

Graphs of operating data. It was determined that the addition of special mixtures to the electrolyte had no effect on the cathode process in zincate electrolytes, and that the upper safe limit for current density was found to rise with an increase of the speed of mixing the electrolyte.

ID 26T9

KUDRYAVTSEV, N.

USSR/Chemistry - Dispersion
Chemistry - Cathode

Mar 49

"Dispersed Metal Deposits occurring at High Voltages," M. Loshkarev, A. Ozerov, N. Kudryavtsev, 8 pp

"Zhur Priklad Khim" Vol XXII, No 3.

Explains action of diffustion processes on structure of depostis on cathode. Shows that, with high electrolyzing currents, metal precipitates in dispersed form. Precipitation of copper from $CuSO_4$ changed from solid to dispersed state as relative current at cathode was increased. In all cases diffused precipitation begins with maximum diffusion current. Submitted 1 May 48.

PA 48/49T16

M

Distribution of Metal on the Cathode Surface in Zincate Electrolytes. N. T. Kudryavtsev and A. A. Nikiforova (*Zhur. Priklad. Khim.*, 1949, **22**, (4), 367–376).—[In Russian]. To study the throwing power (P) of the baths, K. and N. used Z-shaped cathodes formed by bending 7·4 × 24·cm. iron strips twice at 60°. An anode was placed on either side of the cathode, which was so disposed that the bends were vertical and all the six faces symmetrically placed with relation to the anodes. After electrodeposition, the coating thickness was determined (by measuring the speed of dissolution in N-HCl containing 70 g./l. NH_4NO_3, 7 g./l. $CuSO_4.5H_2O$) at 5 points along a face, spaced 1·5 cm. apart. Curves were plotted showing the variations in thickness with distance from a bend, and P was calculated as the percentage (coating thickness at point farthest from anode × 100)/(thickness at point nearest to anode). Using baths 0·15–0·5N in zinc, 1·25–4·35N in free KOH, and containing ~0·25 g./l. tin, at 50–80° C. and 0·5–1·0 amp./dm.², K. and N. found that P increases with an increase in free KOH concentration or in c.d., but decreases with increase in zinc concentration or bath temp. Zinc concentration has the most influence. P varied from 84 to 43·0% for the range of conditions examined, being greatest for a bath of composition zinc 0·150N, free KOH 1·58N, K_2CO_3 0·59N, tin 0·25 g./l., at 50° C. and 0·5 amp./dm.². This compares with values for P of 48 and 33·5% for cyanide baths, and of 8·5% for a bath containing $ZnSO_4$, $Al_2(SO_4)_3$, and Na_2SO_4. Three types of zincate bath are recommended, according to the degree of relief of the work.—G. V. E. T.

Aug. 1951

KUDRYAVTSEV, N. T.

USSR/Chemistry - Electrolytes
Chemistry - Galvanotechnics

Apr 49

"Electrolytic Zinc Plating in Zinc Electrolytes at High Current Densities," N. T. Kudryavtsev, A. I. Lipovetskaya, K. N. Kharlamova, Lab of Galvanochem Metal Plating Sec NIIKhIMSh, 7½ pp Sci Res Inst of Chemical Machine Building

"Zhur Prik Khim" Vol XXII, No 4 - pp 377-84

Effect of special additions and mixing in zincate electrolytes on the limit of permissible cathode current density and the diffusion capacity of the bath was investigated. Only additions of Sn, Pb, and Hg have positive effects. Mixing increased the limit of permissible

60/49T29

[redacted]

USSR/Chemistry - Electrolytes (Contd)

Apr 49

the upper limit of permissible cathode current density. Submitted 8 Apr 48.

60/49T29

[redacted]

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

6

M

PROTECTIVE AND DECORATIVE NICKEL PLATING OF ARTICLES WITHOUT SUBSEQUENT POLISHING N. T. Kudryavtsev, O.M. Korol'kova, and V.A. Fedurkin (Zhur. Prikład. Khim., 1949, 22, (6), 586-591).- (In Russian). Deposits of Ni on brass, Cu, and steel were made from sulphate baths contg. a mixture of salts of naphthalene 2: 6- and 2:7 disulphonic acids. These were prepared by heating naphthalene with H_2SO_4 cooling and adding the product to the plating bath, excess H_2SO_4 being neutralized with $NiCO_3$ or alkali to give pH 5·8-6·3. Baths contg. $NiSO_4$ 140-300, H_3BO_3 30, KF or NaF 5-6, KCl or NaCl 3-15, and naphthalene disulphonic acids 2-4 g./l. are recommended for bright deposits. The presence in the bath of up to 1 g./l. Fe(as sulphate) did not affect the brightness or other properties of the deposits. Optimum conditions were 20 -40 C., and 1·5-5·0 amp./dm.^{2} (with agitation) or 0·2-1·0 amp./dm.^{2} (without agitation). X-ray examination of deposits prepared at high c.d. showed that they had highly orientated Ni crystals, whereas in the absence of naphthalene disulponic acids there was random orientation. The deposits were also less porous and more uniform than

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

matt deposits prepared from ordinary baths. The brittleness of the deposits becomes noticeable only at thicknesses > 25-30 μ.

-G.V.E.T.

60/49T20

USSR/Chemistry - Electrolytes Jul 49
Chemistry - Polarization

"Cathode Polarization in Zincate Electrolytes," N. T. Kudryavtsev, Inst of Phys Chem, Acad Sci USSR, Moscow, 8½ pp

Zhur Fiz Khim" Vol XXIII, No 7 - 17.849-57

Recommends and employs the speedy method of plotting polarization suggested by A. T. Vagramyan, showing that rate of ionization of zinc is much greater than rate of discharge of ions, and that cathode polarization is stepped up by current density more abruptly than anode polarization. Very little of the

60/49T20

USSR/Chemistry - Electrolytes (Contd) Jul 49

polarization is of a chemical character. Submitted 10 Oct 48.

60/49T20

KUDRYAVTSEV, N. T.

CA

4

Electrolytic preparation of highly dispersed iron powder. N. T. Kudryavtsev and E. A. Tereshkovich (D. I. Mendeleev Chem.-Technol. Inst., Moscow). *Zhur. Prikład. Khim.* (J. Applied Chem.) 22, 1298-1305(1949).—The conditions for formation of Fe sponge on the cathode were studied in detail. An electrolyte of 70 g./l. $FeSO_4.7H_2O$ and 110 g./l. NaCl at pH 4.5-5.3 at 80° and cathode c.d. 10-40 amp./sq. dm. gave a uniform sponge, but bath depletion was more rapid and pptn. of hydroxides more troublesome than in an electrolyte contg. K_2SO_4 instead of NaCl. $(NH_4)_2SO_4$ was less satisfactory than NaCl. If Fe concn. is low (0.25*N*) only Fe hydroxides and H form; metal deposits only from 0.5 *N* or more concd. solns.; *N* to 2 *N* solns. appear best, but particle size increases with higher Fe concn. in hot solns. (50-80°), but at room temp. the size remains small. Increase of c.d. gives finer particle size but the current yield declines; increase of temp. leads to coarser particles. The finest specimens form at 20° regardless of compn. of electrolyte. The best fine dispersion was obtained with $FeSO_4.7H_2O$ 210-80 g./l., K_2SO_4 2 *N*, at 20°, at 10-30 amp./sq. dm. The product is best treated with 10 vols. 3% H_2SO_4 to remove the hydroxides, in the presence of urotropine or As_2O_3 to lower the washing losses. Final washing with RtOH or Me_2CO and drying in open air 1.5-2.0 hrs., followed by 100-5° treatment to const. wt. complete the process, giving a material contg. 95-7% Fe rather stable to atm. oxidation. A photomicrograph is presented.

G. M. Kosolapoff

1951

KUDRYAVTSEV, N. T.

"Investigation of the Formation of the Spongy and Compacy Glittering Deposits of metal on Cathodes." Thesis for degree of Dr. Chemical Sci. Sub 23 Mar 50, Inst of Physical Chemistry, Acad Sci USSR

[redacted] Summary 71, 4 Sep 52, Dissertations Presented for Degrees in Science and Engineering in Moscow in 1950. From Vechernyaya Moska, Jan- Dec. 1950

KUDRYAVTSEV, N. T.

55

USSR

Conditions and examples of the deposition of metals on a cathode in spongy form. N. T. Kudryavtsev (I), I. Mendeleev Chem. Technol. Inst., Moscow, and Inst. Phys. Chem., Acad. Sci. U.S.S.R.). *Trudy Soveshchaniya Elektrokhim. Akad. Nauk S.S.S.R., Odel. Khim. Nauk* 1950, 258-75(1953).—The conditions and causes of the formation of spongy deposits on a cathode were studied at different c.d. The electrolysis of alk. monocyanide (zincate) electrolytes for which a spongy deposit is characteristic was found to produce spongy deposits of 2 types. The 1st is a dense sponge over the entire surface at c.d. close to the limiting c.d. The 2nd consists of localized spongy growths formed below the limiting c.d. which appear after an induction period and gradually grow. The formation of the 1st type of deposit is explained by the depletion of discharging ions in the electrolyte at the cathode surface. As a consequence, the growth of crystals is retarded and their surfaces are passivated. Localized spongy growths are explained by the presence of dispersed particles of Zn or incompletely oxidized Zn which form at the anode and transfer to the cathode as a metallic sol. Crystn. is preferential at sites where these particles deposit. The action of Pb, Sn, and Hg salts, which eliminate the 2nd type of growth, is explained by soln. of the Zn sol by electrochem. replacement. Similar considerations are believed applicable to the formation of spongy deposits in neutral solns. The mechanism of the action of colloidal and high-molecular organic additives on cathodic processes. A. I. Levin and A. V. Pomosov. *Ibid.* 307-14.—The effect of org. additives on the cathodic polarization of a plating bath contg. $CuSO_4.5H_2O$, 135 g./l.; H_2SO_4, 180 g./l. is discussed. Additives such as gelatin, glue, Igepon, and p-toluidine-

(DUBY)

CH 35

N.T. KUDRYAVTSEV

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sulfonic acid increase the polarization while others such as Na sulfite pulp, 2,7-naphthalenesulfonic acid, and soapwort have no effect. The former group is considered to form pos. ions which promote adsorption on the cathode surface. This adsorbed layer acts as a filter or porous diaphragm which retards the progress of cations to the surface. The layer has 2 parts, 1 oriented and strongly bound, the other loosely bound. As a consequence, the polarization characteristics change with c.d. and temp. The mechanism of reduction and electroreduction of certain unsaturated organic compounds on platinum. A. I. Shlygin. *Ibid.* 322-34.—A series of electrochem. methods were developed and applied to the study of the kinetics and mechanism of certain adsorptive, catalytic, and electrochem. processes. Platinized Pt was used in an aq. soln. of H_2SO_4. Method 1 was measurement of the change of potential of the Pt, satd. with H, upon interaction with the org. component. This provided a measure of the rate of hydrogenation by the adsorbed layer of H. The changes of potential indicated that the adsorbed H capable of reaction was found on 2 types of adsorption centers on the Pt, and these centers differed sharply in activity. Method 2 was measurement of the change of potential with time after agitating the electrode under an H atm. It was possible to det. the rate of adsorption of H on Pt up to the satn. point. Method 3 was measurement of the anodic current necessary to maintain a fixed potential of Pt upon agitating under an H atm. By this means, the "true" rate of adsorption of H was detd. Comparison of the rate of adsorption of H and the rate of hydrogenation of dimethylethynylcarbinol (I) indicated that this reaction was limited by the rate of adsorption of H on a relatively small no. of active centers. Method

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