WIRTH, ZDENEK, ed.

Ratiborice; statni zamek a babiccino udoli. (Hlavni stat napsal Zdenek Wirth. Spolupracovali: Gohumil Novak, et al. Vyd. 3, v STN 1. V Praze, Statni telovychovne nakl., 1955?) 28 p. (Ratiborice; the state castle and Grandmother('s Valley. 3d ed. illus., maps)

SO: Monthly Index of East European Accessions (EEAI) LC, Vol. 7, no. 5, May 1958

WIRTH ZDENEK

"Sychrov, statni zamek a okoli. (Titulovou stat napsal Zidenek Wirth. Spolupracovali Bohumir Lifka et al. 2. rozirene vyd. V Praze, Sportovni a turisticke nakl., 1957) p. 32 (Publikace Statni pamatkove spravy) (Sychrov, the state castle and its surroundings; a tourist guide. 2d enl. ed. illus., map plans)

P. 32 (Praha, Czechoslovakia)

Monthly Index of East European Accessions (EEAI) LC, Vol. 7, No. 7, July 1958

BROZKOVA, V.; WIRTHOVA, H.; KUBAT, A., MUDr.; SYKORA, J.

Our experience with radioactive iodine in the diagnosis of thyropathies. Plzen. lek. sborn. 24:83-88 '64

1. Klinika chorob vnitrnich lekarske fakulty University Karlovy v Plzni (prednosta: prof. MUDr. K. Bobek) a onkologicke oddeleni SFN v Plzni (zast. prednosta: MUDr. Alois Kubat).

Wischán Z.

Wischán, Zoltán, Mikrokilmas [illegible]

WISCHER, H., Dipl. Ing.; KULDA, V., inz. [translator]

Excitation of synchronous machines by rectifiers. El tech obzor 53 no.10:529-532 O '64.

1. VEB Elektroprojekt, Berlin, German Democratic Republic (for Wischer).

WISCICKI, Marek

Technological progress in welding. Wiad elektrotechn 31 no.12: 293-296 D'63.

1. Zaklad Wytworczy Aparatury Rozdzielczej A-10, Warszawa.

WISILEWSKI, Ludwik; SWATEK, Stanislaw

Anodic decomposition of graphitized electrodes during electrolysis. Pt.2. Sodium chlorate. Chemia stosow 5 no.2:299-310 '61.

1. Katedra Elektrochemii Technicznej i Elektrometalurgii, Politechnika Slaska, Gliwice i Instytut Chemii Nieorganicznej, Gliwice.

PRAVDA, Z.; WISINGEROVA, E.

Chromatography of extracellular streptococcal products. J.hyg. epidem.Praha 4 no.4:509-511 '60.

1. Institute of Epidemiology and Microbiology, Prague.
(STREPTOCOCCUS chemistry)

SZREDER, Waldyslaw; DZARNOCKI, Wilhelm; WISKONT-BUCZKOWSKA, Halina, JANICKI, Andreej

Studies on liver-protecting substances. I. Observations on experimental poisoning with carbon tetrachloride. Pat.polska 6 no.1: 1-6 Jan-Mar '55.

1. Z Zakladu Patologii Ogolnej A.M. w Gdansku Kierownik: prof. dr. W. Szreder i z Zakladu Anatomii Patol. A.M. w Gdansku. Kierownik prof. Dr. W. Czarnocki. Adres: Gdansk, Zaklad Patologii Ogolnej i Doswiadczalnej, Debinki 7.

(CARBON TETRACHLORIDE, poisoning, exper.)
(POISONING, experimental, carbon tetrachloride)

WISKONT-BUCZKOWSKA, H.

Gas exchange in hypoxic-hypercapnic hypothermia in rats. Acta physiol. polon. 8 no.3:567-568 1957.

1. Z Zakladu Fizjologii A M w Gdansku. Kierownik: prof. dr B. Szabuniewicz.
(RESPIRATION, physiology,
eff. of hypothermia, hypoxic-hypercapnic in rat (Pol))
(HYPOTHERMIA, effects,
on gas exchange in rat, hypoxic-hypercapnic technic (Pol))

WISKONT-BUCZKOWSKA, Halina

Plasma histamine during last days of pregnancy in the rat. Acta physiol. Pol. 14 no.4:405-410 Jl-Ag '63.

1. Z Zakladu Fizjologii Akademii Medycznej w Gdansku (Kierownik: prof. dr. B. Szabuniewicz).

WISKONT-BUCZKOWSKA, Halina

Histamine metabolism in pregnancy and gestational activity of progesterone. Ginek. Pol. 35 no.3:439-448 My-Je '64

Histamine in human labor and pregnancy. Ibid.:449-456

1. Z II Kliniki Poloznictwa i Chorob Kobiecych Akademii Medycznej w Gdansku (Kierownik: prof. dr. med. W.Gromadzki).

WISKONT-HUCZKOWSKA, Halina; PAPIEROWSKI, Zbigniew

Comparison of results of immunologic pregnancy test with Aschheim-Zondeck test. Ginek. Pol. 36 no.4:423-427 Ap '65.

1. Z II Kliniki Poloznictwa i Chorob Kobiecych AM w Gdansku (Kierownik: prof. dr. med. W. Gromadzki).

BCS WISKOVSKY, A.

Pottery

1610. The literature on Bohemian porcelain.—A. Wiškovský (*Sklář*, 28, 331, 1936). Bohemian porcelain has been neglected in the world literature because it very soon lost its character. Production was commercialized very early, mainly by copying the Germans.

WIGLA, Stefan, mgr inz.; URBANSKI, Jozef, dr

Analysis of modern methods of determining the position of a ship at sea. Pt. 2. Przegl geod 35 [i.e. 36] no. 3: 98-101 Mr '64.

WISLA, Stefan, mgr inz.

Terminology in the field of maritime hydrography and its tasks.
Przegl geod 34 no.10:422-425 O '62.

WISLA, Stefan, mgr inz.; Urbanski, Jozef, dr.

Analysis of modern methods of determining the position of a ship at sea. Przegl. geod. 36 no.2:57-60 F'64

L 43032-66 BC

ACC NR: AP6018756 (A,N) SOURCE CODE: PO/0082/66/000/002/0064/0073

AUTHOR: Wisla, S. (Master engineer; Lieutenant)

ORG: none

35
B

TITLE: A simplified method of determining the accuracy of a ship's position plot

SOURCE: Przeglad morski, no. 2, 1966, 64-73

TOPIC TAGS: ship navigation, celestial navigation, navigation aid

ABSTRACT: Analyzed are evaluations of average error M in ship's position plots calculated from two or three reference lines. The author presents several tables and a nomogram assisting in rapid determination of M for calculations with two or three reference lines derived from sightings, radiolocation, distance, or height of celestial bodies. The technique of using the cited tables and chart is illustrated by several practical examples. Calculation time is about 1 min and the results insure adequate accuracy of the plot. Orig. art. has: 1 figure, 3 tables, and 7 formulas.

SUB CODE: 17/ SUBM DATE: none/ ORIG REF: 004

Card 1/1

IZDEBSKI, Marian; WISLAWSKA, Barbara

A case of parathyroid adenoma with signs of Recklinghausen's disease and severe anemia. Pol. tyg. lek. 17 no.5:182-184 29 Ja '62.

1. Z II Kliniki Chorob Wewnetrznych AM w Lodzi; kierownik: prof. dr med. Jerzy Jakobowski.
(OSTEITIS FIBROSA compl) (ANEMIA HYPOCHROMIC etiol)

IZDEBSKI, Marian; WISLAWSKA, Barbara

Acute allegic toxic syndrome following meprobamate (miltown). Pol. tyg. lek. 17 no.10:363-364 5 Mr '62.

1. Z II Kliniki Chorob Wewnetrznych AM w Lodzi, kierownik: prof. dr nauk med. Jerzy Jakubowski.

(MEPROBAMATE toxicol) (ALLERGY)

WISLAWSKI, Jerzy, WOLTER, Halina

Temporal arteritis. Neur. &c.polska 5 no.3:277-285 My-Je '55.

1. Z Kliniki Neurochirurgii A.M. w Warszawie. Kierownik: prof. dr J. Chorobski. i z Kliniki Okulistycznej A.M. w Warszawie. Kierownik: prof. dr W.H. Melanowski.

(ARTERITIS
temporal, clin. aspects)

KOZNIEWSKA, H.; WISLAWSKI, J; SLOWIK, T.

Epidermoid cyst of the spinal cord. Neur. &c polska 10 no.2:213-217 Mr-Ap '60.

1. Z Kliniki Neurochirurgii A.M. w Warszawie Kierownik: prof. dr med. J.Chorobski.
(SPINAL CORD neopl)

KEPSKI, Apolinary; WISLAWSKI, Jerzy

Case of total blocking of Magendie's foramen in an adult. Neurol. neurochir. psychiat. pol. 12 no.6:925-928 '62.

1. Z Kliniki Neurochirurgii AM w Warszawie Kierownik: prof. dr J. Chorobski.

(NEUROLOGY)

POLAND

Jerzy WISLAWSKI and Witold MAZUROWSKI, Neurosurgical Clinic (Klinika Neurochirurgii) Medical College (AM/=Akademia Medyczna/) Head (kierownik) Prof Dr J. CHOROBSKI, Warsaw.

"Surgical Treatment of Congenital Meningeal Fistula (Sinus Pilonidalis)."

Warsaw, Polski Tygodnik Lekarski, Vol 17, No 43, 22 Oct 1962; pp 1679-1681.

Abstract /English summary modified/: Clinical data on 7 male and 1 female patients, six of whom were treated by the usual surgical method, with good results. One table, 6 Western references.

1/1

WISLAWSKI, Jerzy; MAZUROWSKI, Witold; LEWICKI, Zdzislaw

Metastatic tumors of the brain. Nowotwory 14 no.3:253-257 Ag-S '64.

1. Z Kliniki Neurochirurgii Akademii Medycznej w Warszawie (Kierownik: prof. dr. med. L. Stepien) i z Zakladu Anatomii Patologicznej Akademii Medycznej w Warszawie (Kierownik: doc. dr. med. R. Stanczykowa).

WISLAWSKI, Jerzy; HAFTEK, Jan; ZARSKI, Stefan

Co-existing 2 cerebral tumors originating from different embryonic formations. Pol. tyg. lek. 19 no.30:1165-1166 27 Jl'64

1. Z Kliniki Neurochirurgii Akademii Medycznej w Warszawie; kierownik: prof. dr. med. Lucjan Stepien.

WISLAWSKI, M

"Interesting ideas on resin collecting" p. 24 (las polski, Vol. 26, No. 2, Feb. 1952, Warszawa)

SO: Monthly List of ~~Russian~~ East European Accessions, Vol. 3, No. 3 /Library of Congress, March 1953, Uncl.

WISLAWSKI, M.

WISLAWSKI, M. Simplified method resinifying spruce. p. 8.

Vol. 29, no. 10, Oct. 1955
LAS POLSKI
AGRICULTURE
Poland

So: East European Accession, Vol. 6, No. 5, May 1957

P. T. A.

Technics & Economics

431

Wiślicki, A., Mechanization Indices. 331 875

„Wskaźnik mechanizacji". Przegląd Budowlany. No. 7—8, 1950, pp. 316—319, 2 figs.

Fixing the definitions of basic mechanization index and index of the mechanization of work. Explanations on the basis of examples. Comparative analysis of both indices and the consequent adoption of the basic mechanization index as one of the main and fundamental indices in planning. An experiment to interlink the planning methods by means of the mechanization indices and by means of the plant and equipment indices. The determination of this link facilitates the carrying out of a more through analysis of the features occuring in building practice in conjuction with the progress in the process of mechanization. Determination of the magnitude of the „unit value of basic machinery" required for the mechanization of the fundamental process.

WISHLICKI, A.

Ind Eng 2 0 0

Polish Technical Abstracts
No. 4, 1953
Building Industry and Architecture

621.86/.87.004.6

2499. Wiślicki A. The System of Planned Periodic Preventive Overhauls of Contractors' Heavy Plant, According to Suggestions Advanced by the IOMB.

„System planowo-terminowych zapobiegawczych remontów ciężkich maszyn budowlanych według projektu IOMB". Przegląd Budowlany. No. 8, 1952, pp. 316—318, 4 tabs.

Repairs to plant should be carried out, in a system of planned economy, in accordance with a detailed plan. The system adopted in Poland relies on planned preventive overhaul. A system of planned periodic overhauls has been worked out to define closely the intervening period between such repairs.

4/10/54

WISNICKI, A.

Polish Technical Abstracts
No. 4, 1953
Building Industry and
Architecture

2310

Wiśnicki A. Foundations for the Palace of Culture and Science. 624.15

„Budowa fundamentów Pałacu Kultury i Nauki". Przegląd Budowlany. No. 10, 1952, pp. 363—383, 11 figs.

The foundations for the highest part of the Palace of Culture and Science form a 7-metre high reinforced concrete box roughly 70 × 70 metres in area. The foundation plate of the reinforced concrete box rests on a concrete levelling base, more than 10 centimetres thick, laid immediately on the bottom of the excavation. Horizontal and vertical haulage of materials was effected by means of heavy cranes and hoists. The reinforcement was carried out in the form of grids and lattices measuring up to 60 sq. m. The shuttering for the concrete was effected in the form of large plates and angles, capable of being used over and over again.

WISLICKI, A.

3956 693.45 : 725.83

Wiślicki A. **Production of Large Prefabricated Ceiling Slabs at the J. Stalin Memorial Palace of Culture and Science.**

„Produkcja wielkich prefabrykowanych płyt stropowych na budowie Pałacu Kultury i Nauki im. J. Stalina". Przegląd Budowlany. No. 8, 1953, pp. 260—261, 4 figs., 1 tab.

Prefabricated slabs are being used in construction of ceilings not designed for horizontal stiffening. The slabs are made in special moulds, actually on the building site. As a rule, steam curing of the slabs takes 28 hours, which is adequate to produce a strength of $R = 0{,}75\ R_{28}$. Given proper production organisation, correct design of the slabs and the use of suitable cranes, manufacture of such prefabricated slabs is simple

WISLICKI, A.

(INZYNIERIA I BUDOWNICTWO, Bol. 10, No. 11, Nov. 1953, Warszawa, Poland)
"The industrialization of work on the building site of the Stalin Place of Culture and Science in Warsaw," p. 330

SO: MONTHLY LIST OF EAST EUROPEAN ACCESSIONS, L.C., Vol. 3, No. 4, APRIL 1954

WISLICKI, A.

"Concrete Work On The Building Site Of The Palace Of Culture And Science" p. 11.
(*Przeglad Budowlany*, Vol, 25, no. 1, Jan. 1953, Warszawa)

SO: Monthly List of East European ~~[illegible]~~ Accessions, Vol. 3, No. 2, Library of Congress, February, 1954 ~~[illegible]~~, Uncl.

WISLICKI, A.

WISLICKI, A.; KOWALCZYK, R. "Assembling The Steel Frame Of The Palace Of Culture And Science In Warsaw" p. 87. (Przeglad Budowlany, Vol. 25, no. 3, Mar. 1953, Warszawa)

SO: Monthly List of East European [redacted] Accessions, Vol. 3, No. 2, Library of Congress, February, 1954 ~~1953~~, Uncl.

WISLICKI, A.

Furnishing industrial centers; remarks based on the experience of the center at the Palace of Culture and Science. p. 367. (PRZEGLAD BUDOWLANY, Vol. 25, No. 11, Nov. 1953, Warszawa, Poland)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 3, No.12, Dec. 1954, Uncl.

WISLICKI, A.

"Organization in Building the I. Stalin Palace of Culture and Science in Warsaw", P. 302, (PRZEGLAD BUDOWLANY, Vol. 26, No. 10, October 1954, Warsaw, Poland)

SO: Monthly List of East European Accessions (EEAL), LC, Vol. 4, No. 3, March 1955, Uncl.

WISLICKI, A.

"Winter work on the construction of the I. Stalin Palace of Culture and Science in Warsaw." p. 377. (PREZENGLAD BUDOWLANY. Vol. 26, No. 12, Dec. 1954 Warszawa, Poland)

SO: Monthly List of East European Accessions. (EEAL). LC. Vol. 4, No. 4. April 1955. Uncl.

WISLICKI, A.

"Horizontal Transport in the Construction of the Highest Parts of the Stalin Palace of Science and Culture in Warsaw," P.54. (PRZEGLAD TECHNICZNY Vol. 75, No. 2, Feb. 1954. Warszawa, Poland)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 1, Jan. 1955 Uncl.

WISLICKI, A.

Influence of the Palace of Culture and Science on technical progress in Polish building. p. 110. Vol. 12, no. 4, Apr. 1955. INZYNIERIA I BUDOWNICTWO. Warszawa.

Source: East European Accessions List (EEAL), LC, Vol. 5, no. 3, March 1956.

WISLICKI, A.

"Moscow Building Conference, November 30-December 7, 1954", p. 45, (INZYNIERIA I BUDOWNICTWO, Vol. 12, No. 2, Feb. 1955, Warszawa, Poland)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 5, May 1955, Uncl.

WISLICKI, A.

The Greeks were not only great architects but also building managers, p. 82.
(PRZEGLAD BUDOWLANY, Warszawa, Vol. 27, no. 3, Mar. 1955.)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 6, Jun. 1955, Uncl.

WISLICKI, A.

Pumping mortar. p. 121.
Vol 27, no. 4, Apr. 1955. PRZEGLAD BUDOWLANY. Warsaw, Poland.

So: Eastern European Accession. Vol 5, no. 4, April 1956

WISLICKI, A.

The opening of Stalin's Palace of Culture and Sciences in Warsaw. p. 233

PRZEGLAD BUDOWLANY

Warszawa

Vol. 27, no. 7, July 1955

SOURCE: East European Accessions List (EEAL), LC, Vol,/5, no. 3, March 1956

WISLICKI, A.

Development of mechanized building and its industrialization in Poland. p. 32.

Vol. 4, no. 1, Jan. 1956
POZEMNI STAVBY
Praha, Czechoslovakia

Source: East European Accession List. Library of Congress
Vol. 5, No. 8, August 1956

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WISLICKI, A.

WISLICKI, A. Trends in the development of mechanization and the production of building machinery. p. 29

Vol. 5, no. 10, Oct. 1956
BUDOWNICTWO PRZEMSIOWE
POLITICAL SCIENCE
Warszawa, Poland

So: East European accession Vol. 6, No. 3, March 1957

WISLICKI, A.

WISLICKI, A. Mechanizing the building industry. p. 128

Vol. 28, no.3, Mar. 1956
PRZEGLAD BUDOWLANY
TECHNOLOGY
Warszawa, Poland

So: East European A ccession, Vol. 6, no. 2, 1957

WISLICKI, A.

WISLICKI, A. More attention to historic remnants of technique. p. 198.

Vol. 77, no. 5, May 1956
PRZEGLAD TECHNICZNY
PHILOSOPHY & RELIGION
Warszawa, Poland

SO: East European Accession, Vol. 6, March 1957

WISLICKI, A.

"Today and tomorrow of the Museum of Technology of the Central Technical Organization."

p. 101 (Przeglad Techniczny) Vol. 79, no. 3, Feb. 1958
Warsaw, Poland

SO: Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 4, April 1958

WISLICKI, A.

TECHNOLOGY

Periodicals: PRZEGLAD BUDOWLANY Vol. 30, no. 7, July 1958

WISLICKI, A. Comparison of the mechanization of the construction industry in the USSR, the United States, the German Federal Republic, and Poland. p.261.

Monthly List of East European Accessions (EEAI) LC, Vol. 8, No. 2, February 1959, Unclass.

WISLICKI, Alfred, doc. inz.

Mechanization of finishing works. Przegl budowl i bud mieszk. 23 no.8:513-514 Ag'61.

WISLICKI, Alfred (Warszawa)

Testing the usefulness of new types of building machines.
Prhegl budowl i bud mieszk 33 no.7:413-415 Jl '61

WISLICKI, Alfred (Warszawa)

Dynamics of the development of building mechanization. Przegl budowl 34 no.3:151-159 Mr '62.

1. Czlonek Komitetu Redakcyjnego miesiecznika "Przeglad Budowlany."

WISLICKI, Alfred, doc., Mgr., inz. (Warsaw)

Dynamics of the development of building industry mechanization.
Inz stavby 10 no.9:Suppl: Mechanizace no.9:108-111 '62.

WISLICKI, Alfred, doc., inz. (Varsava); TOTH, Ladislav, inz. [translator]

Efficiency of building machines and their manufacture in various countries. Inz stavby 10 no.11:Suppl.:Mechanizace no.11:131-134 '62.

1. SNR, Bratislava (for Toth).

WISLICKI, Alfred (Warszawa)

Once again on the need of educating mechanical engineers for the building industry. Przegl budowl i bud mieszk 34 no.8:473-474 Ag '62.

DZWONKOWSKI, Kazimierz (Warszawa); KOZINSKI, Wieslaw (Warszawa);
WISLICKI, Alfred (Warszawa)

Mechanization of finishing works. Przegl budowl i bud
mieszk 34 no.9:544-548 S '62.

WISLICKI, Alfred, doc. inz.

Methods of determining the usefulness of construction machinery.
Przegl budowl i bud mieszk 35 no.1:65-68 Ja '63.

WISLICKI, Alfred; ODOLINSKI, Roman

The state of equipment supply at construction works in Warsaw and ways to improve the situation. Przegl budowl i bud mieszk 35 no.9: 483-485 '63.

WISLICKI, Alfred, doc. inz.

Operational testing of the aptitude of earthwork machines in Poland. Inz stavby 12 no. 2: Supplement: Mechanizace no. 2: 17-20 '64.

1. Ustav organizace a mechanizace stavebnictvi, Varsava.

BRACH, Ignacy; ROJEK, Karol; WISLICKI, Alfred (Warszawa)

International Conference on Mechanization in Earthwork. Przegl budowl i bud mieszk 36 no.3:150-151 Mr '64.

WISLICKI, Bogdan

On the possibilities of increasing the combustion heat of hydrocarbon fuels. Przem chem 39 no.5:240-244 My '60.

20437
P/014/61/040/005/001/002
D227/D305

11.1210
AUTHOR: Wiślicki, Bogdan

TITLE: Increasing the heat of combustion of hydrocarbon fuels

PERIODICAL: Przemysł chemiczny, v. 40, no. 5, 1961, 240-244

TEXT: This is a discussion on the possibilities of improving jet aircraft fuels by adjusting the hydrocarbon combustion and by using B, Be, Mg, Al or their derivatives. Heat given out by a fuel can be increased by incorporating components possessing high heats of combustion. This is the fundamental criterion of fuel quality, depending only on the initial mixture and products of combustion. Complete oxidation of C and H gives:

$$1\ KgC + \frac{8}{3}\ KgO_2 \longrightarrow \frac{11}{3}\ Kg\ CO_2 + 8140\ Kcal \quad (1)$$

$$1\ KgH_2 + 8\ KgO_2 \longrightarrow 9\ Kg\ H_2O(steam) + 28800\ Kcal. \quad (2)$$

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Increasing the heat of ...

From the percentage amounts of carbon (c) and hydrogen (h) in a particular compound, the heat given out in combustion is given by:

$$Q_d = 81.4\ c + 288\ h\ \text{Kcal/Kg} = \text{'lower' calorific value} \quad (3)$$

and

$$Q_g = 81.4\ c + 341\ h\ \text{Kcal/Kg} = \text{heat of combustion ('upper' calorific value).} \quad (4)$$

For jet and turbine engines, combustion heat is the most important fuel property, since this determines the exhaust velocity of air and, hence, the thrust. For compounds containing oxygen, Eqs. (3) and (4) become:

$$Q_d = 81.4\ c + 288\ (h - \frac{0}{8})\ \text{Kcal/Kg} \quad (5)$$

$$Q_g = 81.4\ c + 341\ (h - \frac{0}{8})\ \text{Kcal/Kg.} \quad (6)$$

Jet fuels are chiefly derived from distillation and chemical treatment of petroleum and coaltar. In the USA 1.3, 5.6 and 18 million

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tons were produced in 1950, 1954 and 1958 respectively and production is expected to reach 30 million tons in 1964. (Ref. 3: Reaktivnoye toplivo USA, Moskva, 1956); (Ref. 4: Petroleum Proc., 10, 343, 1955); (Ref. 5: World Petrol, 28, no. 11, 55, 1957); and according to E. Bass, J. Lubbock, C. Williams (Ref. 8: Proceedings of the Third World Petroleum Congress, section VII, Leiden). Total heat evolved in burning is the sum of the individual heats of combustion, 40 % of the energy being due to H and 60 % to C which constitutes 84 % of the fuel by weight. Calorific values of various hydrocarbons containing equal amounts of C are shown in Table 1, while those for a number of homologous hydrocarbon series of interest are contained in Table 2. Calorific values of hydrocarbons may be discussed in terms of the $\frac{C}{H}$ ratio which for the fuels in question varies from 5.7 to 6.7 with corresponding Q_d values of 10,000 - 10,500 Kcals/Kg, and in connection with the boiling points, since these determine which compounds will be associated in a given fraction during manufacture (Figs. 2 and 3). The value of (Q_g-Q_d)

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Increasing the heat of ...

is 770-800 Kcals/Kg for alkanes, 750-770 for alicyclics and olefins and ∿380 for benzene homologues. Calorific values and H-content of alkanes fall with increasing b.p. For single-ring alicyclics Q_d is little affected by the b.p. and it increases in higher homologues of the benzene series due to the H-rich side-chains. Naphthalene homologues have lower calorific values than benzene, eg. n-Bu benzene 9945, Bu-naphthalene 9,535 Kcal/Kg. The calorific value per liter Q_1 (= Q_d · x density) is more sensitive to chemical composition than Q_d (Table 3). A few examples are quoted showing that Q_1 of alkanes, cycloalkanes and alkenes changes appreciably with the structure of the carbon skeleton. For the aromatics Q_g decreases and Q_1 increases on addition of an aromatic ring with a 1-2 carbon side-chain. The thermal efficiency of fuels can, therefore, be increased by including compounds of high Q_g and density, bearing in mind the composition and b.p. considerations. Thus the

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calorific value of jet fuels (10,250-10,350 Kcal/Kg) may be raised to 10,400-10,500 Kcal/Kg by using a parafin/olefin mixture of density $\sim$0.77. Raising this value to 10,500-10,600 with fuel density $>$ 0.77 is considerably more difficult. Fuel usefulness also depends on the melting point, viscosity, corrosion characteristics, vapor pressure, inflammability, rate of combustion, frame stability, coking tendency, engine design etc. [Abstractor's note: These factors are not discussed]. The calorific values for a number of fuels are given in Table 4. Certain metals and non-metals and their compounds are potentially useful fuels because of their high heats of combustion (Table 5). The usefulness of these elements is assessed by means of a "fuel index", X, defined by

$$X = \frac{Q_{wt} \cdot Q_{vol}}{Q^{o}_{wt} \cdot Q^{o}_{vol}} \qquad (7)$$

where Q_{wt} and Q_{vol} are the calorific values of the material tested, per Kg and per liter respectively, and Q^{o}S are the corresponding values for paraffin oil ($Q^{o}_{wt} \cdot Q^{o}_{vol} = 10{,}280 \cdot 8{,}540 = 87.8 \cdot 10^{6}$). Values of X for certain materials of interest are listed in Fig. 4. Use of hydrogen which possesses the highest heat of combustion is deterred by its unfavorable physical properties. In the search for better fuels (1): Be and B can be usefully substituted for C in a hydrocarbon molecule or, alternatively, (2): Suspensions or colloidal solutions of metallic powders in hydrocarbons could be employed (1): Interest in B and its compounds has grown recently, although its physico/chemical properties have not as yet been fully investigated. Boron hydrides with calorific values $>$15,000 Kcal/Kg are of particular interest. Certain properties of these and related compounds are shown in Tables 6 and 7. (2): Suspensions are preferable to colloidal solutions, where the achievment of high concentrations presents serious difficulties. Life of the suspensions may be prolonged by increasing the hydrocarbon viscosity and by stirring. Physical characteristics of Al_2O_3, B_2O_3, BeO, Li_2O, MgO should also be considered since they may absorb considerable heat

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in melting or even vaporizing, and being solids, will accelerate both erosion and corrosion of engine parts. Recent American work on boron and its derivatives for use as aircraft and rocket fuel is briefly mentioned. The author considers that at present the use of $Al(BH_4)_3$, Li and B hydrides allows a 50 % increase in engine thrust. As an illustration, the maximum flying distances of a 58 ton plane with 125 m^3 tanks are quoted as 16,000-35,000 km for the above mentioned metals, hydrides and metal suspensions, as opposed to 14,500-15,000 km of the conventional fuels (15,000 for kerosene). There are 4 figures, 8 tables and 28 references: 11 Soviet-bloc and 17 non-Soviet-bloc. References to the four most recent English-language publications read as follows: H. Harvey, World Petrol, 28, no. 10, 54, 1957; H. Harvey, SAE. J. VIII, 65, no.9, 17, 1957; I.R. Cracknell, Flight, 71, no. 2512, 332, 1957; Ind. Eng. Chem., 49, 1265, 1957.

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Table 1. Composition and values of various hydrocarbons.

Legend: 1 - Hydrocarbon; 2 - formula; 3 - composition; 4 - calorific value, kcal/kg; 5 - lower; 6 - upper; 7 - hexane; 8 -hexene; 9 - cyclohexane; 10 - benzene.

Tablica 1. Wartości opałowe oraz skład elementarny różnych grup węglowodorów[6]) TABLE I

(1) Węglowodór	(2) Wzór	(3) Skład elementarny		(4) Wartość opałowa kcal/kG	
		H, %	C, %	(5) dolna	(6) górna
(7) Heksan	C_6H_{14}	16,26	83,74	10698	11560
(8) Heksen	C_6H_{12}	14,28	85,72	10615	11450
(9) Cykloheksan	C_6H_{12}	14,28	85,72	10379	11150
(10) Benzen	C_6H_6	7,60	92,31	9533	10000

Table 1.

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Table 2. Distribution of the calorific value in homologous series.

Legend: 1 - Series; 2 - lower calorific value (kcal/Kg); 3 - n-alkanes; 4 - iso-alkanes; 5 - n-olefins; 6 - single-ring alicyclics; 7 - double-ring alicyclics; 8 - benzene and homologous; 9 - naphthalene homologous; 10 - aromatic-cycloparaffin hydrocarbons.

Table 2.

Table 2.
Tablica 2. Rozkład wartości opałowej w szeregach homologicznych[6,7])

(1) Szereg homologiczny	(2) Wartość opałowa dolna kcal/kG			
	C_6	C_{10}	C_{12}	C_{16}
Normalne parafiny (3)	10698	10570	10540	10503
Izoparafiny (4)	—	10533	10513	10481
Normalne olefiny (5)	10615	10183	10170	10144
Jednopierścieniowe cykloparafiny (6)	10379	10375	—	10360
Dwupierścieniowe cykloparafiny (7)	—	10200	—	—
Benzen i jego homologi (8)	9593	9945	9917	—
Homologi naftalenu (9)	—	9270	9175	—
Węglowodory aromatyczno-cykloparafinowe (10)	—	9426	—	—

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Table 3. Calorific values per kg and per liter for various compounds representing particular homologous series.

Legend: 1 - Hydrocarbon; 2 - formula; 3 - density (d_4^{20}); 4 - calorific values; 5 - kcal/Kg; 6 - kcal/l; 7 - n-decane; 8 - decene-2; 9 - butyl cyclohexane; 10 - trans-decalin; 11 - cis-decalin; 12 - butyl benzene; 13 - tetralin; 14 - methyl naphthalene; 15 - kerosene.

Tablica 3. Wartości opałowe z kilograma i z litra związków przedstawiających poszczególne szeregi homologiczne[a]) TABLE 3

(1) Węglowodór	(2) Wzór	(3) Gęstość d_4^{20}	(4) Wartości opałowe	
			kcal/kG (5)	kcal/l (6)
(7) n-Dekan	$C_{10}H_{22}$	0,7299	10570	7080
(8) Decen-2	$C_{10}H_{20}$	0,7421	10483	7740
(9) Butylocykloheksan	$C_{10}H_{20}$	0,7993	10375	8260
(10) Dekalina (trans)	$C_{10}H_{18}$	0,872	10165	8750
(11) Dekalina (cis)	$C_{10}H_{18}$	0,890	10225	9100
(12) Butylobenzen	$C_{10}H_{14}$	0,8603	9945	8550
(13) Tetralina	$C_{10}H_{12}$	0,9731	9723	9450
(14) Metylonaftalen	$C_{11}H_{10}$	1,025	9394	9625
(15) Nafta lotnicza	—	(14°C) 0,81	10250	8300

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Table 4. Calorific values of fuels and the constituent hydrocarbon groups.

Legend: 1 - Fuel; 2 - density, 15.0/15.5°; 3 - boiling point, °C; 4 - group composition, %; 5 - calorific value; 6 - aromatics; 7 - cycloparaffins; 8 - alkanes; 9 - kcal/Kg; 10 - kcal/l; 11 - aviation fuel; 12 - kerosene; 13 - alkane concentrate; 14 - alkane/alicyclics concentrate; 15 - aromatics concentrate; 16 - aviation spirit; 17 - diesel fuel.

Tablica 4. Wartości opałowe paliw i grup węglowodorów wchodzących w skład paliw[5]) TABLE 4

(1) Paliwo	(2) Gęstość 15,0/15,5°	(3) Temperatura wrzenia °C	(4) Skład grupowy %			(5) Wartość opałowa	
			(6) w. aromatyczne	(7) w. cykloparafinowe	(8) w. parafinowe	(9) kcal/kG	(10) kcal/l
(11) Paliwo lotnicze	0,7650	60—270	—	—	—	10350	7900
(12) Nafta lotnicza	0,7940	155—270	19,4	39,2	41,4	10260	8135
(13) Koncentrat węglowodorów parafinowych	0,7475	159—265	2,6	5,2	92,2	10360	7723
(14) Koncentrat węglowodorów parafinowych i cykloparafinowych	0,7910	160—270	1,4	51,9	46,7	10300	8133
(15) Koncentrat węglowodorów aromatycznych	0,8645	166—253	75,2	11,4	13,4	9860	8320
(16) Benzyna lotnicza	0,7203	60—180	—	—	—	10526	7582
(17) Paliwo do silników diesla	0,8700	200—325	—	—	—	10050	8720

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Table 5. Heats of combustion of certain substances.
Legend: 1 - Aluminum; 2 - petrol; 3 - beryllium; 4 - magnesium; 5 - hydrogen; 6 - silicon; 7 - acetylene; 8 - titanium; 9 - lithium; 10 - lithium hydride; 11 - carbon; 12 - kerosene (paraffin oil); 13 - boron; 14 - diborane, B_2H_6; 15 - tetrahydroborane, B_2H_6; 16 - pentaborane, B_5H_9; 17 - decaborane, $B_{10}H_{14}$; 18 - suspension of B in kerosene; 19 - suspension of B in pentaborane; 20 - AL 140 atm.absolute (above 1 atm) and 10°C; 21 - AL 35°C; 22 - AL 99°C; 23 - substance; 24 - heat of combustion;

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(23) Substancja	(24) Ciepło spalania (25) objętościowe kcal/l	(26) względem nafty (dla nafty = 1)	(27) wagowe kcal/kG	(28) względem nafty (dla nafty = 1)	(29) Stosunek charakterystyczny
(1) Glin	20000	2,34	7400	0,72	1,71
(2) Benzyna	7280	0,85	10400	1,01	0,86
(3) Beryl	29950	3,51	16190	1,57	5,60
(4) Magnez	10300	1,21	5925	0,58	0,70
(5) Wodór	319*) (20)	0,04	28650	2,79	1,05
(6) Krzem	17800	2,09	7330	0,71	1,49
(7) Acetylen	7150	0,84	11520	1,12	0,95
(8) Tytan	20520	2,40	4560	0,44	1,08
(9) Lit	5170	0,51	10265	1,00	0,65
(10) Wodorek litu	8060	0,95	9850	0,93	0,92
(11) Węgiel	17620	2,07	7830	0,76	1,59
(12) Nafta	8540	1,00	10280	1,00	1,00
(13) Bor	32100	3,76	13950	1,36	5,17
(14) Dwuborowodór B_2H_6	7798	0,91	17430	1,70	1,57
(15) Czterohydroborowodór B_2H_6	9350**) (21)	1,10	16700	1,63	1,78
(16) Pięcioborowodór B_5H_9	9870	1,15	16180	1,58	1,85
(17) Dziesięcioborowodór $B_{10}H_{14}$	13250***) (22)	1,55	14400	1,40	1,91
(18) Zawiesina boru w nafcie	20500	2,40	12900	1,25	3,10
(19) Zawiesina boru w B_5H_9	21350	2,50	14400	1,40	3,50

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Table 5. (cont'd)
25 - kcals per liter; 26 - relative to paraffin oil (paraffin oil = 1); 27 - kcals per kg; 28 - relative to paraffin oil (paraffin oil = 1); 29 - fuel index.

Table 6. Characteristics of some boron hydrides.

Legend: 1 - Compound; 2 - formula; 3 - melting point (°C); 4 - boiling point (°C); 5 - spec. gravity; 6 - vapor pressure; 7 - gen. properties; 8 - stable pentaborane; 9 - decaborane; 10 - borazole; 11 - aluminum borohydride; 12 - beryllium borohydride; 13 - lithium borohydride; 14 - not decomposed in air between 0-10°C. Slowly hydrolyzed by water; 15 - does not ignite or decompose, slowly hydrolyzed; 16 - chemically stable, soluble in water, not hydrolyzed in the cold; 17 - violent reaction with air and water; 18 - violent reaction with air and water; 19 - stable in moist oxygen.

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Table 6. (cont'd)

Tablica 6. Charakterystyka niektórych borowodorów [8, 16, 17, 18])

TABLE 6.

(1) Związek	(2) Wzór	(3) Temp. top. °C	(4) Temp. wrz. °C	(5) Ciężar właściwy	(6) Prężność par	(7) Własności ogólne
Pięcioborowodór trwały (8)	B_5H_9	—46,6	58 (15,1 przy 131 mm)	0,610 (0°)	66 (10°)	(14) nie rozkłada się na powietrzu w 0 do 10°, pod działaniem H_2O ulega powolnemu rozkładowi
Dziesięcioborowodór (9)	$B_{10}H_{14}$	99,5	213 (156 przy 162 mm)	0,92 (99°)	! 19 (100°)	(15) nie zapala się, nie ulega rozkładowi, ulega powolnej hydrolizie
Borowodoroazotek (10)	$B_3N_3H_6$	—58	53	0,8519		(16) chemicznie trwały, rozpuszczalny w H_2O bez rozkładu, przy ogrzaniu hydrolizuje
Borowodorek glinu (11)	$Al(BH_4)_3$	—65,4	44,5	0,5588 (13,8°)	11,5 (6°)	(17) gwałtownie reaguje z H_2O i powietrzem
Borowodorek berylu (12)	$Be(BH_4)_2$	31	91,3	—	—	(18) jak wyżej
Borowodorek litu (13)	$LiBH_4$	237	—	0,666	—	(19) trwały w atmosferze tlenu i wilgoci

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Table 7. Heats of combustion of boron and beryllium derivatives.

Legend: 1 - Name; 2 - formula; 3 - density; 4 - melting point (°C) 5 - boiling point (°C); 6 - lower calorific value; 7 - kcal/kg; 8 - kcal/l; 9 - boron; 10 - beryllium; 11 - pentaborane; 12 - decaborane; 13 - aluminum borohydride; 14 - beryllium borohydride; 15 - lithium borohydride; 16 - dimethyl beryllium; 17 - trimethyl boron; 18 - triethyl boron; 19 - tripropyl boron; 20 - trimethyl aluminum; 21 - tetramethyl diboroethane.

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Table 7.

Tablica 7. Ciepło spalania związków boru i berylu[24])
TABLE 7

(1) Nazwa	(2) Wzór	(3) Gęstość	(4) Temp. top. °C	(5) Temp. wrzenia °C	(6) Dolna wartość opałowa (7) kcal/kG	(8) kcal/l
(9) Bor	B	2,3	stały	—	13670	31400
(10) Beryl	Be	1,81	stały	—	15000	27800
(11) Pięcioborowodór	B_5H_9	0,61	—46,6	58	15340	9630
(12) Dziesięcioborowodór	$B_{10}H_{14}$	0,92	99	—	15310	14100
(13) Borowodorek glinu	$Al(BH_4)_3$	0,558	—65,4	43,5	13750	17670
(14) Borowodorek berylu	$Be(BH_4)_2$	—	31	91,3	16100	—
(15) Borowodorek litu	$LiBH_4$	0,666	273	rozkłada się	14300	9500
(16) Dwumetyloberyl	$Be(CH_3)_2$	—	stały	—	12700 (11900)	—
(17) Trójmetylobor	$B(CH_3)_3$	0,62	—	—20	11900	8900
(18) Trójetylobor	$B(C_2H_5)_3$	0,69	—	90—96	11200	—
(19) Trójpropylobor	$B(C_3H_7)_3$	0,72	—	156	10700	—
(20) Trójmetyloglin	$Al(CH_3)_3$	0,73	15	125	10550	—
(21) Czterometylodwuboroetan	$(CH_3)_2B{-}C_2H_4{-}B(CH_3)_2$		—	98	11600	—

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Fig. 2. Relationship between the calorific value and the $\frac{C}{H}$ ratio.

Legend: 1 - Upper calorific value (kcal/kg); 2 - $\frac{C}{H}$ ratio; 3 - aromatics; 4 - alicyclics; 5 - alkanes; 6 - petroleum products.

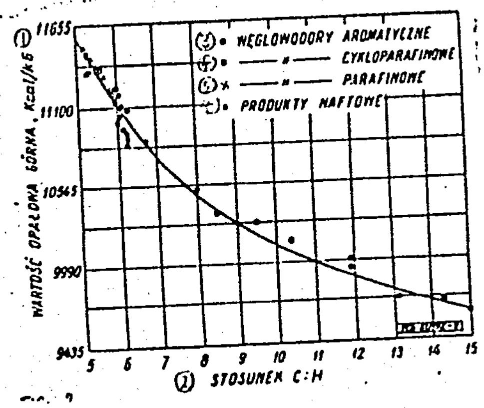

Fig. 2.

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Fig. 3. Dependence of the calorific value on boiling point.

Legend: 1 - Lower calorific value (kcal/kg); 2 - boiling point, ^{0}C; 3 - alkanes; 4 - alicyclics; 5 - aromatics; 6 - double-ring hydrocarbons /Abstractor's note: Not clear whether aromatic or alicyclic/.

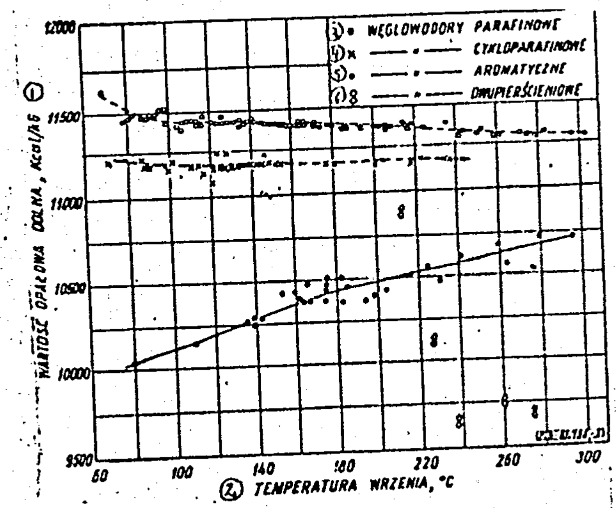

Fig. 3.

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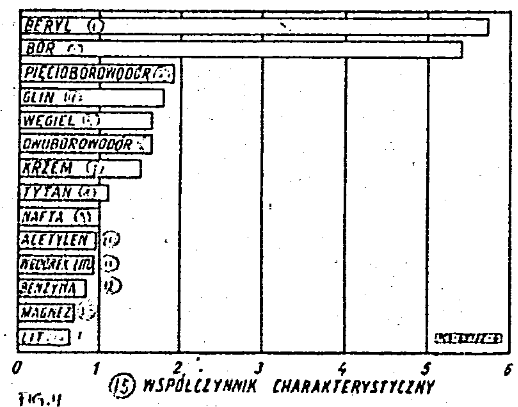
Fig. 4. Fuel indices of various substances.

Legend: 1 - Beryllium; 2 - boron; 3 - pentaborane; 4 - aluminum; 5 - carbon; 6 - diborane; 7 - silicon; 8 - titanium; 9 - paraffin oil (kerosene); 10 - acetylene; 11 - lithium hydride; 12 - gasolene; 13 - magnesium; 14 - lithium; 15 - fuel index.



Rys. 4. Współczynniki charakterystyczne dla szeregu substancji

Fig. 4.

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D235/D302

AUTHOR: Wiślicki, Bogdan, Master of Engineering

TITLE: Dependence of the completeness of combustion of turbine and jet engine fuels of chemical constitution

PERIODICAL: Technika lotnicza, no. 8, 1961, 171 - 178

TEXT: The effects of chemical constitution of hydrocarbon fuels on the combustion efficiency and tendency towards coking were investigated. Chemical characteristics of jet and turbine fuels are specially important when they affect the physical properties. Heat evolved in combustion is lower than the theoretical amount, since a certain amount is wasted in side reactions such as pyrolysis or the formation of carbon (coking and smoking). Thermal efficiency, η, is defined as the ratio of the heat actually obtained to the lower calorific value of the fuel. Completeness of combustion is given by $\emptyset$, ($= \eta \times 100$), and may reach

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94 - 98% although 75 - 80% is more usual. The combustion process is based fundamentally on turbulent mixing and molecular diffusion of air and fuel vapor. Stability of the flame and the rate of combustion strongly affect Ø; Thus rapid oxidation at 1800 - 2000°C with a nearly theoretical amount of air should yield continuous combustion. The mixing process at these temperatures is considerably slower than the rate of combustion. Combustion of cyclohexane in varying amounts of air is quoted as an illustration. Oxidation of hydrocarbons proceeds by a chain mechanism, without branching, and is accelerated by the products of pyrolysis, of which hydrogen is especially important owing to its rapid diffusion. Effects of the structural characteristics of the fuel are discussed. Fuels of higher molecular weight are less efficient due to their tendency towards cracking. Self-ignition is more likely in the case of paraffins than with aromatics and ignition is, therefore, more delayed in the case of the latter. Pre-ignition processes have not been fully investigated, but unfavorable reactions at that stage may

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lower the thermal efficiency. Laboratory measurements of Ø have been carried out, under high altitude conditions, for aviation spirit (boiling range 53 - 174°C). Effects of the air/fuel ratios on Ø have been investigated for kerosene, paraffin concentrate of boiling range 159 - 265°C and a mixture of aromatic (75.2%), cycloparaffins (11.4%) and paraffins (13.4%) boiling between 166 and 253°C. Values are given to show that the optimum air/fuel ratio is ~ 60, corresponding to a Ø of 98% for all the fuels considered. The aromatic fuels became considerably less efficient with high proportions of air. Design of the combustion chamber in relation to Ø is briefly mentioned, quoting Western sources, and experimental values of Ø are given for hydrocarbons fed into the experimental chamber by injection or evaporation. The effects of the chemical nature of the fuel on Ø appears to be more pronounced in the latter case, Ø decreasing in the order: paraffins > single ring cycloparaffins >cyclo-olefins > double ring cycloparaffins > single ring aromatics with a side-chain single ring aromatics > double ring aromatics. Proportions of

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the constituents and the boiling range also have an effect. In-complete combustion results in smoking and deposition of coke or in the elimination of soot and carbon particles in the exhaust gases. They physical nature of smoke is briefly described, showing that smoke is easily eliminated before coagulation into soot. Dehydrogenation of the fuel and polymerization of the carbon skeletons leads to coking. The effects of coke deposition on various parts of the engine are shortly described. Coking tendency is ultimately related to the design of the combustion chamber, degree of atomization, surface tension, viscosity and composition of the fuel and the amount and pressure of air. Coking increases with increased fuel density, b.p., and in the order: paraffins < cyclo-olefins < aromatics. These relation-ships are illustrated. Within each group, coking increases with decreased volatility and in general increases for the higher $\frac{C}{H}$ ratios. Smoke formation increases in the series n-paraffins < iso-paraffins < cycloparaffins < olefins < cyclo-olefins <

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di-olefin alkynes < n-alkyl benzenes. This is discussed and illustrated. Sulphur compounds increase coking, but not as mucy as the aromatics, which however do not exceed 25% in the usual fuels. The tendency towards the inclusion of a higher percentage of less volatile components into the American JP5 and JP6 fuels is mentioned. Improvement of combustion efficiency may partially alleviate this problem, especially during the pre-ignition and ignition stages. Western work in this field is shortly described. It is believed that suitable kerosene fuels without any additives can be produced. There are 19 figures, 8 tables and 24 references: 5 Soviet-bloc and 19 non-Soviet-bloc. The references to the four most recent English-language publications read as follows: J. Sharp, J. Royal Aeronautical Soc., 58, no 528, 813, (1954); V.F. Massa and B.B. Russel, U.S. Pat. 2,739,049, March 20, 1956; E.C. Aughes and O. Hook, Petrol Eng., 28, no. 7, 10, (1956); and I.B. Hinkamp and V. Hinzd, Ind. Eng. Chem., 47, no. 8, 1560,(1955).

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WISLICKI, Bogdan, mgr.

Combustion accuracy of fuel for turbine and ram-jet engines and its chemical composition. Techn lotn 16 no.8:171-178 Ag '61.

ACCESSION NR: AP3008291 P/0008/63/000/009/0233/0242

AUTHOR: Wislicki, Bogdan

TITLE: Some problems of the kinetics of chemical processes in the combustion chambers of aircraft turbine engines

SOURCE: Technika lotnicza, no. 9, 1963, 233-242

TOPIC TAGS: kinetics, aircraft turbine combustion chamber, heat transfer, aerodynamics, hydrodynamics, ignition, mass transfer

ABSTRACT: The author defines his paper as "a general introduction to the kinetics of the processes of the combustion of hydrocarbons under the combustion conditions in turbine engines," remarking that there has thus far been in Poland no exhaustive study of this subject from the viewpoint of the kinetics of chemical reactions at high speeds and around 2000C. Since the rate of combustion and its intensification are limited by the processes of heat and mass transfer, only a total conception of the problem gained by observing its kinetics, aerodynamics and hydrodynamics can explain a number of phenomena and establish their regularity.

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ACCESSION NR: AP3008291

There are sections entitled: "Chemical kinetics of combustion reactions", "Mechanism of chain self-ignition," "Mechanism of thermal self-ignition," and "Kinetics of chemical reactions in the flame." Original article has 19 figures and 44 numbered formulas.

ASSOCIATION: SITK, Warsaw

SUBMITTED: 00 DATE ACQ: 14Oct63 ENCL: 00

SUB CODE: AC NO REF SOV: 007 OTHER: 001

Card 2/2

MIELNIKOWA, Boleslawa, doc. inz.; WISLICKI, Bogdan, mgr.; KLEIN, Stanislaw, mgr.

Evaluation of fuels for turbojet engines. Inst lotn prace no.18: 19-33 '63.

WISLICKI, Bogdan, mgr

Combustion processes of hydrocarbon fuels in fluid flow engines. Techn lotn 19 no.6:142-149 Je '64.

Specific heat values of certain hydrocarbon fuels. Ibid.:2 of cover, 3-4 of cover

L 35616-65 EWT(d)/EWT(m)/EPF(c)/EWP(f)/EPR/T/EWA(c) Pr-4 P/2532/64/000/023/0022/0035
ACCESSION NR: AT5008297

AUTHOR: Wislicki, B. (Vislitskiy, B.) (Master of arts); Krzyzanowski, R. (Kzhizhanovskiy, R.) (Master engineer)

TITLE: Miniature combustion chamber for fuel testing

SOURCE: Warsaw. Instytut Lotnictwa. Prace, no. 23, 1964, 22-35

TOPIC TAGS: combustion chamber, fuel test, continuous combustion, vibration combustion

ABSTRACT: J. Wolfa of the Polish Aviation Institute has designed a small-size combustion chamber as a first step in a fuel combustion investigation in order to define the characteristics of fuel combustion with evaporation under conditions comparable to real engine operating conditions. The chamber, designed for visual observation of the combustion process, has been used for comparative study of B-70 gasoline and P-2 fuel at fuel flow rates from 0.2 to 1.5 kg/hr. The chamber's thermal efficiency as a function of air excess for the above fuels was determined. The tests conducted have demonstrated the usefulness of microchambers for the investigation of fuel combustion with evaporation. It has also been shown that by the use of diffusion of

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L 35616-65

ACCESSION NR: AT5008297

fuel vapors it is possible to intensify the vibrational combustion. A detailed description of the combustion chamber and test stand is presented. Orig. art. has: 4 formulas and 24 figures.

[AC]

ASSOCIATION: Instytut Lotnictwa, Warsaw (Aeronautics Institute)

SUBMITTED: 00Mar64 ENCL: 00 SUB CODE: FP

NO REF SOV: 007 OTHER: 019 ATD PRESS: 3220

Card 2/2

L 09026-67 EWP(t)/ETI IJP(c) JD/WB

ACC NR: AT6033638 SOURCE CODE: PO/2532/66/000/026/0042/0061

AUTHOR: Wislicki, Bogdan -- Vislitskiy, B. (Master of Arts) 29 23

ORG: Institute of Aviation, Warsaw (Instytut Lotnictwa)

TITLE: High efficiency laboratory fractionating column

SOURCE: Warsaw. Instytut Lotnictwa. Prace, no. 26, 1966, 42-61

TOPIC TAGS: fractional distillation, petroleum fuel, fuel oil, resistance thermometer, petroleum refining, laboratory fractionating column, petroleum fraction, electronic dephlegmation timer, temperature control/MET-42 temperature control unit

ABSTRACT: The author discusses an automatic, laboratory-type, packed fractionating column for distilling petroleum fuel oils and petroleum fractions under normal or reduced pressure, which he had designed, built, and tested. Maximum column efficiency is about 140 theoretical plates with 1.7-cm plate equivalent spacing, retardation is 0.71 milliliter liquid per plate, and a pressure drop of 0.142 mm H_2O per plate. The column can also be used on pilot plant scale for fractional distillation of liquids which do not corrode the packing material. Senior

Card 1/2 UDC: 66.048:665.52

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ACC NR: AT6033638

Technician Zdzislaw Kaminski of the Fuels Laboratory, Institute of Aviation, Warsaw collaborated in constructing the column. The "L" packing material was chosen, and the electronic timer for automatic dephlegmation control was planned and built by Dr. A. Maczynski, Institute of Physical Chemistry, PAN, Warsaw. The MET-42 differential temperature control unit and the precision resistance thermometer were built at Department C of Physics, Warsaw Polytechnic Institute according to the design by J. Czernik, Master of Engineering. The paper was approved by Dr. Andrzej Maczynski, Master of Arts. Orig. art. has: 32 figures, 12 tables, and 8 formulas. [Based on author's abstract]

SUB CODE: 11, 21/ SUBM DATE: 00Jun65/ ORIG REF: 003/ SOV REF: 006/ OTH REF: 006/

Card 2/2 nst

ABGAROWICZ, Franciszek, prof. dr; BURZYNSKI, Bohdan; WISLINSKA, Irena;
WITCZAK, Franciszek

Fattening of young cattle using ammoniated dry sugar-beet pulp with a differing content of nitrogen compounds in the rations. Zesz probl post nauk roln no.41:101-106 '63.

1. Katedra Zywienia Zwierzat, Szkola Glowna Gospodarstwa Wiejskiego, Warszawa. Kierownik: prof. F. Abgarowicz.

WISLINSKI, M.; STUDZINSKI, T.

Hematological studies on types of hemoglobin in sheep. Acta physiol.polon. 11 no.5/6:916-917 '60.

1. Z Katedry Fizjologii Zwierzat Wydzialu Weterynaryjnego W.S.R. w Lublinie. Kierownik: prof.dr. W.Holobut.
(HEMOGLOBIN)

I

POLAND/Chemical Technology. Chemical Products and Their Application Synthetic Polymers. Plastics H

Abs Jour: Ref Zhur-Khim., No 13, 1958, 45111.

Author : Wisliski Tadeusz.
Inst :
Title : Bonding of Non-Metals. Part II. Technology of Bonding. Part III. Bonding Flaws and Fundamentals of Bonding Control.

Orig Pub: Techn. lotnicza, 1956, 11, No 4, 106-116; No 6, 167-173.

Abstract: II. A review. The technology of preparation of adhesives and of their application to non-metallic surfaces are considered. Detailed description of clamping procedures, heating during bond formation, and methods for shortening the period of setting.

Card : 1/2

POLAND/Chemical Technology. Chemical Products and Their Application. Synthetic Polymers. Plastics H

Abs Jour: Ref Zhur-Khim , No 13, 1958, 45111

III. Consideration of flaws arising at the surfaces being bonded, and of their causes; fundamentals of quality control of bonded articles and of determination of the characteristics of adhesives.

Card : 2/2

WISLICKI, T.

Metal gluing. Pt. 2. (To be contd.)

p. 146 (Technika Lotnicza. Vol. 12, no. 5, Sept./Oct. 1957. Warszawa, Poland)

Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 2,
February 1958