

**PROCEEDINGS OF THE FIRST INTERNATIONAL
ALUMINUM EXTRUSION TECHNOLOGY SEMINAR - 1969**

March 3-5, 1969 New Orleans, Louisiana, U.S.A.

To Use Table Of Contents: Click on a [blue paper title](#) below to view that paper. To return to this Table of Contents, click PREVIOUS MENU in the bookmarks at left.

(1969)

[The Market for Aluminum Extrusion, Present and Future](#)

Norbert Kirchdorfer

Reynolds Metals Company

(1969)

[Evaluating Extrusion Plant Operations](#)

Robert T. Ferguson

Aluminum Company of America

(1969)

[Extrusion Press Selection](#)

Paul G. Mayer

Baldwin's-Lima-Hamilton Corp.

(1969)

[Recent Developments in Melting and Liquid Aluminum Transfer Equipment](#)

A.D. Smith and T.W. Foster

Kaiser Aluminum & Chemical Corp.

(1969)

[Aluminum Melting and Scrap Reclamation by Induction](#)

Joseph Fowles

Ajax Magnathermic Corporation

(1969)

[Metallics, the Engineering Concept of Moving Metal Like Water](#)

Fenton C. Koch

The Carborundum Company

(1969)

[D.C. Vertical Casting of Aluminum Extrusion Ingot](#)

Andre Allier

Pechinery Enterprises

(1969)

[Horizontal Casting of Extrusion Ingot](#)

Lowden Simonson and John Herd
Reynolds Metals Company

(1969)

[The Influence of Alloying Elements and Homogenizing Treatment on the Extrudability of Wrought Aluminum Alloys](#)

Gunther Scharf
V.A.W. Research Laboratories

(1969)

[How the Properties and Microstructure of 6063 Alloy Extrusions Depend Upon Fabricating Practice](#)

E.C. Beatty
Kaiser Aluminum & Chemical Corp.

(1969)

[Extrusion of 5083 Alloy](#)

Karl F. Braeuninger
Dow Chemical Company

(1969)

[The Metallurgy of Press Heat-Treatable Al-Zn-Mg Extrusion Alloys](#)

R.F. Ashton
Reynolds Metals Company

(1969)

[The Physical Metallurgy of Al-Mg-Si Alloy Billet Preheat Treatment](#)

J.C. Fister and M.J. Pryor
Olin Mathieson Chemical Corporation

(1969)

[Panel Discussion C Billet Heating](#)

Induction Heating of Aluminum Billets for Extrusion

J.E. Suhrer

Ajax Magnethermic Corporation

Gas Heating of Aluminum Billets for Extrusion

John W. Nelson

Granco Equipment, Inc.

The Cutting of Aluminum Logs into Billets

R.L. Hibbard and W.F. Larson

(1969)

[Computer Simulation of Temperature Rise During Extrusion](#)

A.I. Kemppinen

Reynolds Metals Company

(1969)

[Hard Alloy Precision Extrusions](#)

W.C. Rotsell

Harvey Aluminum

(1969)

[Homogenizing Furnace Design and Construction](#)

Del F. Davis

Lanly Company

(1969)

[Recent Advances in Extrusion Presses](#)

Alex Zeitlin

Bliss/Barogenics, Inc.

(1969)

[Speed Measurement and Regulation on Hydraulic Rod and Tube Extrusion Presses](#)

Bernhard Haverkamp

Schloemann A.G.

(1969)

[European Oil-Hydraulic High-Pressure Pumps for Extrusion Presses](#)

Hans Brukardt

Excentra GmbH

(1969)

[The Design of Extrusion Dies and Tools](#)

C.O. Stockdale, Jr.

Aluminum Company of America

(1969)

[Design and Manufacturing of Aluminum Extrusion Dies](#)

Carl DeBuigne

Ajax Magnethermic Corporation

(1969)

[Aluminum Extrusion Tooling, Where Do We Stand?](#)

Dennis D. Huffman

(1969)

[Improved Steels for Highly Stressed Extrusion Dies and Their Heat Treatment](#)

Dr. Max Kroneis

(1969)

[Metallurgical Aspects of Press Heat Treatment](#)

Carl V. Lynch

Aluminum Company of America

(1969)

[Super Quenching of Aluminum Extrusions](#)

W.S. Peterson and J.E. Dore

Olin Aluminum

(1969)

[Hydrostatic Extrusion](#)

H.K. Slater

United Kingdom Atomic Energy Authority and

E.J. Averill

Fielding & Platt, Ltd.

(1969)

[Extrusion Packaging](#)

Extrusion Packaging C An Overview

John Beasley

The William L. Bonnell Company, Inc.

Overpacking and Underpacking C Enemies of Profit

Robert Miller

Packing Engineer, Aluminum Company of America

(1969)

[The Extrusion Process From the Press Through the Saw](#)

Russell Race

Clark Automation, Inc.

(1969)

The Effects of the Metallurgical Structure on the Mechanical Properties and Appearance of Anodically Treated Extrusions

K.R. Gustafson and E.F. O'Mara

Revere Copper and Brass, Inc.

**PROCEEDINGS OF THE SECOND INTERNATIONAL
ALUMINUM EXTRUSION TECHNOLOGY SEMINAR - 1977**

November 15-17, 1977 Atlanta, Georgia, U.S.A.

To Use Table Of Contents: Click on a [blue paper title](#) below to view that paper. To return to this Table of Contents, click PREVIOUS MENU in the bookmarks at left.

BILLET PROCESS

(1977)

[Dynamic Vacuum Treatment of Molten Aluminum Alloys](#)

Aksel Aarflot and Frantisek Patak
Aardal OG Sunndal Verk

(1977)

[Casting and Handling of Extrusion Billets in a Reduction Plant Casthouse](#)

Andre X. Aller
Aluminum Pechiney

(1977)

[Wastewater Control in Aluminum Extrusions](#)

J.D. Reynolds
Kaiser Aluminum and Chemical Corp.

(1977)

[Control Methods for Extrusion Forge Press and Melting Furnace Fumes](#)

Maurice W. Wei
Aluminum Company of America

(1977)

[Melt Loss and Melt Conservation](#)

Carson L. Brooks
Reynolds Metals Company

(1977)

[Alumax Salt Recovery and Dross Recovery Systems in Aluminum Melting](#)

William C. Shirley
Apex International Alloys, Inc.

(1977)

[An Alternative to Chlorine Fluxing of Aluminum:
The SNIF Process](#)

C. Cawthorn and W.C. Rotsell
Martin Marietta Aluminum

(1977)

[An Alternative to Chlorine Fluxing of Aluminum: The SNIF Process](#)

A.G. Szekely
Union Carbide Corporation

(1977)

[Ceramic Foam](#) A Unique Method of Filtering Molten Aluminum Alloys

J.E. Dore
Consolidated Aluminum Corp.
J.C. Yarwood
Olin Corporation

(1977)

[Types of Billet Production Facilities](#) Remelt Plant Operation

James R. Ogle
Wells Aluminum Corp.

(1977)

[Melting Aluminum and Aluminum Alloys](#)

A.L. Stewart and J.G. McCubbin
Aluminum Company of Canada, Ltd.

(1977)

[Vertical DC Casting with Particular Comment on Mould Lubrication and Cooling](#)

J.G. McCubbin and N.B. Bryson
Aluminum Company of Canada, Ltd.

(1977)

[Some Developments on the Field of Aluminum Billet Processing and Extrusion Finishing
Equipment](#)

F.W. Elhaus
F.W. Elhaus KG

(1977)

[Degassing and Filtering Methods](#)

M. L. Redhair

Alcoa Technical Center

BILLET EQUIPMENT

(1977)

[Advancements in Heating and Homogenizing Equipment](#)

Robert Ross

Sunbeam Equipment Corp.

(1977)

[Combustion Equipment and Fuels](#)

Richard L. Bennett

North American Manufacturing Company

(1977)

[Fundamentals of Aluminum Remelt Furnace Design](#)

O.H. Warwick

Warwick Furnace Company

EXTRUSION PROCESS

(1977)

[Conform & LinexBTwo Continuous Aluminum Extrusion Machines](#)

William G. Voorhes

Wanskuck Co.

(1977)

[Indirect Extrusion](#)

R. Pickens

Texas Extrusion Corporation

(1977)

[Process Equipment's Growth with The Aluminum Industry](#)

Neil C. Hikade

Clark Automation, Inc.

(1977)

[Factors Contributing to Surface Finish Quality of Aluminum Extrusions](#)

Melvin E. Molitor

Wells Aluminum Corp.

(1977)

[Extrusion Packaging](#)

Robert G. Keizur

Kaiser Aluminum and Chemical Corp.

(1977)

[Controlling Extrusion Plant Costs](#)

Terry L. Waugh

Kaiser Aluminum and Chemical Corporation

(1977)

[Study on the Indirect Extrusion Process of Aluminum Alloy](#)

Hiroaki Yokobayashi, Tadashi Chiba and Junichiro Morooka

Niitetsu Curtainwall Corp.

(1977)

[Development of Scrap Extrusion Reformation and Utilization Process](#)

Toshiro Takahashi

Riken Light Metal Research Industry Co., Ltd.

(1977)

[Development of Cleaning Plate Extrusion Method](#)

Yoshiyuki Kobayashi and Shigeru Okaniwa

Nippon Light Metal Research Laboratory, Ltd.

(1977)

[Warm Hydrostatic Extrusion of High Strength Aluminum Alloys](#)

Masahiro Seido

Hitachi Cable, Ltd., Research Laboratory

Sadahiko Mitsugi, Dietrich Oelschlagel

Hitachi Akim'itsu Kobayashi Cable Ltd., Toyoura Works

(1977)

[Extrusion Packaging](#)

Eugene Willingham

The William L. Bonnell Co.

(1977)

[Aluminum Sawing Selection Considerations](#)

H. Dana Baldwin II

Oliver Machinery Co.

EXTRUSION EQUIPMENT

(1977)

[Development and Improvement in Extrusion Press of Non-ferrous Metal](#)

Akira Asari

Kobe Steel, Ltd.

(1977)

[Press Alignment](#)

E.J. Anthofer

Kaiser Aluminum and Chemical Corp.

(1977)

[The Billet Heater](#)

C.B. Gentry

Granco Equipment Co.

(1977)

[Induction Heating of Non-ferrous Billets](#)

James E. Suhrer

Ajax Magnathermic Corporation

(1977)

[Efficiency in Billet Heating](#)

John W. Nelson

Oliver Machinery Company

(1977)

[Stretching-Detwisting System for Extruded Aluminum Bars, Tubes and Sections](#)

A.I. Nussbaum

Loma Machine Mfg. Co. Inc.

(1977)

Recent Advances in Puller Technology: The Advantages and Operation of
an Extrusion Puller Powered by Linear Motors

J.A. Edwards

Edwards of Enfield, Ltd.

(1977)

Automatic Regulation of Extrusion Speed

Richard Strauss

Wean United, Inc.

(1977)

Programmable Extrusion

Richard Cole

Farrell Company Division, USM Corporation

(1977)

Sutton Press Maintenance and Safety Features

Joseph A. Kurtak

Sutton Engineering Co.

(1977)

Extrusion Press Installations for the Metal Industry: Survey of Developments Since 1957

Dieter Veltjens and K.H. Schneck

Schloemann-Siemag, Inc.

(1977)

Texas Presses—the Next Generation of Extrusion Presses

R. Pickens

Texas Extrusion Corp.

(1977)

Texas Presses—the Next Generation of Extrusion Presses

R.W. Pickens

Texas Presses, Inc.

(1977)

Indirect Extrusion

R.W. Dickens

Texas Presses, Inc.

(1977)

[Japanese Techniques in Machinery Design and Metal Processing](#)

David L. Kurtak

Nissho-Iwai American Corporation

(1977)

[Energy and Efficiency Hydraulic Systems](#)

R.S. Carson

The Oilgear Company

BILLET TECHNOLOGY

(1977)

[How Billet Structures Affect Extrusion Performance of 6061 Alloy](#)

E.C. Beatty

Kaiser Aluminum and Chemical Corporation

(1977)

[A Practical Method for Evaluating Grain Refinement](#)

A.R. Burkart, G.M. Farrior and D.C. Brillhart

Kawecki Berylco Industries, Inc.

(1977)

[Billet Surface Conditions and Internal Structures](#)

M.L. Redhair

Alcoa Technical Center

EXTRUSION TECHNOLOGY

(1977)

[Medium Strength AlZnMg-AlloysCExperience of Extrusion and Extruded Products in Sweden](#)

Erik Lindstrand

Granges Aluminum

(1977)

[Isothermal Transformation Characteristics of Several 6XXX Series Alloys](#)

J. Crane, D.V. Gullotti, W.C. Setzer

Consolidated Aluminum Corp.

Olin Metals Research Laboratory

(1977)

[AA6205 High Impact Strength Extrusion Alloy](#)

W.C. Seizer, P.R. Sperry
Consolidated Aluminum Corporation

(1977)

[Aluminum Alloys for Bright Anodized Bumpers](#)

Scott Hoover and Paul Browand
Reynolds Metals Company

(1977)

[Current Series and New AA 6000 Series Alloys](#)

R.W. Hains
Alcan Canada Products, Ltd.
W.G. Barry
Aluminum Company of Canada, Ltd.

(1977)

[Precipitation Aging](#)

R.W. Hains
Alcan Canada Products, Ltd.

(1977)

[Influence of Copper, Manganese and Chromium Additions on Extrudability of AlMgSi-Alloys](#)

G. Lang and A.F. Castle
Vereinigte Metallwerke Ranshofen-Berndorf AG

(1977)

[Quench Sensitivity Considerations in Developing an Air Cooled AlMgSi Alloy for Construction Purposes](#)

A. Maitland and A. Ried
Swiss Aluminum, Ltd.

(1977)

[Recent Development of 7003 Extrusion Alloy](#)

Y. Baba and H. Yoshida
Sumitomo Light Metal Industries, Ltd.

(1977)

[Applying Torsion Testing to Determine Pressure and Temperature Distribution in the Extrusion Process](#)

Haavard Giestland and Sverre Brandall

The Foundation of Scientific and Industrial Research at the University of Trondheim

(1977)

[The Influence of Aluminum Alloy Casting Structures on Homogenizing and Extrudability](#)

Gunther Scharf and Edgar Lossack

V.A.W. Vereinigte Aluminum-Werke AG Research Laboratories
Bonn, West Germany

(1977)

[QC Tests for Strength and Related Quality Characteristics](#)

Stanley F. Collis

Aluminum Company of America

(1977)

[A Text of Extrudability](#)

L.F. Mondolfo

Syracuse University

A.R. Peel

Revere Copper and Brass, Inc.

(1977)

[The Application of Limit Diagrams to Extrusion Process Control](#)

Dr. Terry Sheppard

Imperial College of Science and Technology

(1977)

[Factors Affecting the Physical Characteristics of Aluminum Magnesium Silicon Alloy Extrusions](#)

F.O. Traenkner

National Aluminum

EXTRUSION DIES

(1977)

[Hot Work Tooling Materials](#)

Howard Glick

Moczik Tool and Die Works, Inc.

(1977)

[Hot Work Tooling MaterialsB](#)

[Processing and Metallurgy for Hot-Extrusion Applications](#)

Dr. R.S. Cremisio

Rescorp International

J.W. Pridgeon and D.W. Mills

Ajax Forging and Casting Co.

(1977)

[Making the Die](#)

Kenneth Wingerter

Moczik Tool & Die Works, Inc.

(1977)

[Abrasive Flow Finishing, Aluminum Extrusion Dies](#)

Larry Rhoades

Extrudehone Corp.

(1977)

[Material Selection for Containers and Tools for the Extrusion of Aluminum](#)

Walter Schepp

Edelstahlwerke Buderus AG

(1977)

[Tool Components](#)

James Cain

Lake Park Tool and Machine Company, Inc.

(1977)

[Die Layout and Design](#)

Cliff Lotzenhiser

Anaheim Extrusion Company, Inc.

(1977)

[Automated Design of Extrusion Dies by Computer](#)

Vijay Nagpal

Carl F. Billhardt

Taylan Altan

Battelle Columbus Laboratories

Roger Gagne

U.S. Army Materials and Mechanics Research Center

(1977)

[Practices, Problems and Corrective Measures in Extrusion Press Tooling](#)

Compiled by CHoward Glicken

Moczik Tool and Die Works, Inc.

(1977)

[Process Factors to Consider Before Modifying the Die](#)

Compiled by CHoward Glicken

Moczik Tool and Die Works, Inc.

(1977)

[Die Corrections for Changing Flow Characteristics](#)

Luis Bello

Garbell Tool & Die Company, Inc.

(1977)

[Handling and Maintenance of Extrusion Tooling](#)

Terry and Wayne Cockburn

Mid South Extrusion Die Company, Inc.

(1977)

[Extruding by Other Methods](#)

T.W. Schmidt

Reynolds Metals Co.

(1977)

[Good Extrusion Tooling Practices](#)

Compiled by CHoward Glicken

Moczik Tool and Die Works, Inc.

(1977)

[Additional Charts, Tables, Drawings and Illustrations](#)

Compiled by CHoward Glicken

Moczik Tool and Die Works, Inc.

[1977 Glossary](#)

**PROCEEDINGS OF THE THIRD INTERNATIONAL
ALUMINUM EXTRUSION TECHNOLOGY SEMINAR - 1984**

April 24-46, 1984 Atlanta, Georgia, U.S.A.

To Use Table Of Contents: Click on a [blue paper title](#) below to view that paper. To return to this Table of Contents, click PREVIOUS MENU in the bookmarks at left.

(1984)

[ET '84 Overview](#)

R. I. Werner

R.D. Werner Co., Inc.

6000 SERIES ALLOYS TECHNOLOGY & FRACTURE TOUGHNESS

(1984)

[Rationalization of Structural Aluminum Magnesium-Silicide Extrusion Alloys](#)

W. Gordon Barry

Alcan International Limited

Kingston Laboratories

(1984)

[Medium Strength AlMgSi Alloys for Structural Applications](#)

P. Schwellinger

H. Zoller

A. Maitland

Swiss Aluminium Ltd.

(1984)

[Correlation of Microstructure in 6xxx Extrusion Alloys with Process Variable and Properties](#)

Phillip R. Sperry

Consolidated Aluminum Corporation

(1984)

[The Effect of Composition and Homogenization Treatment on Extrudability of AlMgSi Alloys](#)

Oddvin Reiso

Metallurgical Research and Development Centre

Ardal og Sunndal Verk a.s.

(1984)

[Correlation Between Properties of Extrusion Billets, Extrudability and Extrusion Quality](#)

Johann Langerweger
Profilex AG

(1984)

[Notch Sensitivity in Wrought AlMgSi Alloys](#)

Dr.-Ing. Gunther Scharf
Dr.-Ing. Barbara Grzemba
Vereinigte Aluminium-Werke AG

(1984)

[The Influence of Silicon Content and Copper, Iron and Manganese Additions on the Relationship Between Structure and Toughness in Aluminum-Magnesium-Silicon Alloys](#)

D.W. Evans
J. Aucote
Coventry Polytechnic

(1984)

[Combination Effect of Mn and Zr Additions on the Properties of AlMgSi Alloys](#)

Koichi Ohori
Yo Takeuchi
Harutoshi Matsuyama
Mitsubishi Aluminum Co., Ltd.

(1984)

[Properties of 6106 and 6005A Extrusion Alloys](#)

Alexandre Annenkoff
Daniel Marchive
Cegedur Pechiney

(1984)

[Recent Developments in Intermediate and High Strength 6xxx Series Alloys](#)

Viola R. Walters
Aluminum Company of America
E.C. Franz
Edmund Franz Metallurgical Consultants

(1984)

[Press Quenching of Aluminum Alloys](#)

Robert W. Hains

Alcan Canada Products Ltd.

(1984)

[Precision and Accuracy of Several Hardness and Tension Test Methods](#)

Robert I. Werner

R.D. Werner Co., Inc.

METALLURGICAL TECHNOLOGY

(1984)

[Modeling of the Aluminum Forward Extrusion Process](#)

Auvo I. Kemppinen

Formerly with Consolidated Aluminum

(1984)

[Temperature Changes in the Extrusion of Aluminum Alloys](#)

A.F. Castle

Service Extrusion Consultants

(1984)

[Metallurgical Aspects of Direct and Indirect Extrusion](#)

Terry Sheppard

Imperial College of Science and Technology, Royal School of Mines

(1984)

[A New AlZnMg Extrusion Alloy with Improved Corrosion Resistance](#)

G. Höllrigl

H. Bichsel

H. Zoller

Swiss Aluminium Ltd.

(1984)

[Aluminum Extrusion Alloy 7129B Properties and Characteristics](#)

G. Navrotski

H.E. Oliver

Reynolds Metals Company

(1984)

[Design of 7029 for Bright Finish Applications](#)

Gary Navrotsky

Reynolds Metals Company

PROCESS TECHNOLOGY

(1984)

[Remelt Furnace Burner Evaluation](#)

John A. Passeri, Jr.

Reynolds Metals Company

(1984)

[Induction Heating of Light Metal Logs](#)

Hans Troger

Otto Junker GmbH

(1984)

[A Mathematical Model of an Extrusion Preheater](#)

Ampere A. Tseng

John J. Mills

Stephen H. Maslen

Martin Marietta Laboratories

(1984)

[Comparing the Extrudability of Conventional and Air SlipJ Cast 6xxx Alloy Billet](#)

John P. Faunce

J.M. Watts

Martin Marietta Laboratories

(1984)

[Technology for the Production of Insulated Extrusion Profiles for the Building Industry](#)

Dr.-Ing. Walter Hueck

Eduard Hueck Lüdenscheid

(1984)

[The Treatment and Disposal of Spent Die Etch Solution](#)

David A. Landau

Turner Engineering Company, Inc.

(1984)

[Monitoring of Heat Treatment and Spray Quenching Processes by Computer](#)

Eleanor E. Croze

James A. Scott

Aluminum Company of America

(1984)

[Future Aerospace Needs for Aluminum Hard-Alloy Extrusions](#)

R.V. Carter

W.E. Quist

Boeing Commercial Airplane Company

DIE PREPARATION, FIXED DUMMY & NITROGEN

(1984)

[Automatic Die Polishing](#)

Thomas Kohut

Extrude Hone Corporation

(1984)

[Material Flow at Die](#)

H. Valberg

A.W. Hensen

J.O. Løland

SINTEF, Division of Materials and Processes

(1984)

[Fixed Dummy Block: Use of Design Efficiency](#)

W. Wuermeling

CLECIM

(1984)

[The Effects of Nitrogen in Liquid and Gaseous Form on Aluminum Extrusion Productivity](#)

Thomas J. Ward

James F. Heffron

Air Products and Chemicals, Inc.

Richard M. Kelly

Gary A. Jones

R.D. Werner Co., Inc.

(1984)

[Extrusion Cooling and Inerting Using Liquid Nitrogen](#)

Ronald J. Selines

Frank Lauricella

Union Carbide Corporation-Linde Division

Patrick Cienciwa

Carmen Goff

Temroc Metals, Inc.

TOOL STEEL, STEEL HEAT TREATMENT & SURFACE TREATMENT OF EXTRUSION DIES

(1984)

[State and Development of Tooling Materials](#)

Kurt E. Haberfellner

Fred M. Schindler

Vereingte Edelstahlwerke

(1984)

[Tool Steel Development for Aluminum Extrusion](#)

Jan-Åke Gavén

Lars-Åke Norström

Uddeholm Tooling

(1984)

[Fluidized Beds for Aluminum Extrusion Die Heat Treating](#)

Robert Staffin

Procedyne Corp.

(1984)

[Ionitriding An Established Heat Treat Process to Increase the Life of Aluminum Extrusion Dies](#)

Wolfgang Rembges

Graham T. Legge

Midland-Ross Corporation

(1984)

[Tungsten Carbide Uses in the Aluminum Extrusion Industry](#)

Robert P. Mehnert, Carney Avedesian, John C. Weinrich

Federal Carbide Co.

(1984)

[Developments in Die Heater Design](#)

Bryan Emes

Mechatherm Engineering Limited

USING COMPUTERS FOR EXTRUSION DIE MANUFACTURING (CAM) AND DIE RECORD KEEPING

(1984)

[Die Storage and Die Record Keeping](#)

Johnie L. Adams

Magnode Corporation

(1984)

[Computerized Die Record Keeping](#)

James H. Foy

Foy, Inc.

(1984)

[Establishing the Technical Data of Aluminum Extrusion Die Using Wire E.D.M.](#)

Noriyasu Ishikawa

Mitsubishi International Corp.

(1984)

[High Technology Extrusion Die Manufacturing](#)

Russell N. McWilliams

McWilliams Machinery Sales, Inc.

(1984)

[Computerized Numerical Control Manufacturing of Extrusion Tools](#)

Luis E. Bello

Garbell Tool & Die Co., Inc.

(1984)

[Modern European Die Making](#)

Roger E. Flory

Service Aluminum Company, Ltd.

(1984)

Experience Using Liquid Nitrogen for Die Cooling

H. Brodbeck

MG Industries, Gas Products Division

MANAGEMENT, CONTROL & PRODUCTIVITY

(1984)

ET '84 Overview

R.I. Werner

R.D. Werner Co., Inc.

(1984)

Modern Automated Extrusion Handling System from Press Runout to Stacker

Charles L. Stewart

AMX Automation, Inc.

(1984)

The Significance of the New Extrusion Handling Technology for the World's Extrusion Industries, with Particular Reference to Pullers and Other Automated Systems, Including Stackers

James A. Edwards

Edwards of Enfield, Limited

(1984)

Small Plant Management Performance through People

James T. Owen

Kaiser Aluminum & Chemical Corp.

(1984)

Maintenance Control The Program Everybody Wanted

George E. Feldman

B.G. Wolford

Reynolds Metals Company

(1984)

Overview of a Fully Automated Extrusion Plant

Mikio Kobayashi

Sumitomo Light Metal Industries, Ltd.

ADVANCEMENT IN EXTRUSION PROCESSES & MATERIALS

(1984)

[The Extrusion of Aluminum and Its Alloys by the CONFORM Process](#)

Clifford Etherington

Harold Keith Slater

UKAEA, Springfields Nuclear Laboratories

(1984)

[Pultruded CompositesCThe Case Against Aluminum Extrusions](#)

Jeff Martin

Joseph E. Sumerack

Pultrusion Technology, Inc.

(1984)

[Investigation of Some Steps in the Production of Al-Mg₂S: Extrusions with High Quality](#)

Jurgen Baumgarten

J. & A. Erbsloh GmbH and Company

(1984)

[The Modern European Aluminum Extrusion Plant](#)

S.F. Jenkins

L.A. Spooner

Roger Beard

Fielding & Platt, Ltd.

(1984)

[Novel Indirect Rod and Tube Extrusion Press Line for Aluminum](#)

Franz-Josef Zilges

SMS Hasenclever Maschinenfabrik GmbH, Düsseldorf

(1984)

[Engineering Computer System from Customer to Extrusion Tool](#)

Gene Gambill

Martin Marietta Aluminum, Inc.

(1984)

[Recent Technology of Indirect Extrusion](#)

Akira Asari

Tatsuhiko Noyori

Masakazu Ueda

Hiroaki Kawamoto

Ikuo Mizoguchi

Kobe Steel, Ltd.

Akiyoshi Ohata

Minobu Sukimoto

Showa Aluminum Corporation

PRESS EQUIPMENT ADVANCES FOR PRODUCTIVITY

(1984)

[Modern Extrusion Press and Billet Shear Design and Technology](#)

Joseph A. Kurtak

Sutton Engineering Company

(1984)

[Recent Advances in the Control and Power of Extrusion Presses](#)

Robert A. Jarasek

The Oilgear Company

(1984)

[Extrusion Press Refurbishment](#)

Leslie Spooner

Fielding & Platt Limited

(1984)

[Alignment of the Extrusion Press](#)

Howard W. Freese

Farrel Company

(1984)

[Updating and Retrofitting Older Extrusion Presses](#)

Ted A. Best

Jack Murphy

The R.L. Best Co.

(1984)

[Bent Axis Axial Piston Pumps and 2/2 Way Cartridge Valves](#)

Jaap van den Heuvel

Rexroth Corporation

TECHNOLOGY HEATING & SHEARING ADVANCES

(1984)

[Dynamics of Log Furnace/Shear/Puller Combination](#)

Charles B. Gentry

Granco-Clark, Inc.

(1984)

[Improvement to the Productivity of an Extrusion Press Through Modern Billet Shears](#)

Jean-Pierre LeMoine

CLECIM

(1984)

[Improvements in Hot Billet Shearing](#)

Friedrich W. Elhaus

Elhaus Industrieanlagen GmbH

(1984)

[Flame Impingement CJet Convection Design for High Efficiency Billet/Log Preheating](#)

John C. Bugai

Granco-Clark, Inc.

(1984)

[Heating Billets Efficiently Using Natural Gas](#)

John W. Nelson

Belco Industries Incorporated

(1984)

[Advances in the Design of the Induction Billet Heating Installation](#)

M. Barry Evans

John A. Wood

Banyard Metalheat Limited

(1984)

[Induction Heating of Billets](#)

Kenneth G. Webley

Ajax Magnethermic Corporation

AUTOMATED MATERIAL HANDLING FOR PRODUCTIVITY

(1984)

[State of the Art Extrusion Handling Equipment](#)

David L. Kurtak

Ube Industries (America), Inc.

(1984)

[Stretcher Design and Equipment for Automatic Operation](#)

Paul Truninger

Truninger AG

(1984)

[The Exciting Double Puller from Norway](#)

B. Smith

C.G. Gentry

Ingenior Smith A/S

(1984)

[Aspects and Equipment for Productive Extrusion Handling](#)

Friedrich W. Elhaus

Elhaus Industrieanlagen GmbH

(1984)

[Extrusion PullerCThe Key to Run-out Automation](#)

Jean-Pierre Lemoine

Jean-Louis Henot

CLECIM-Press Division

(1984)

[Stacker for Automatic Loading of Sections into Racks](#)

Paul Truninger

Truninger AG

(1984)

[Integrated Plants for Extrusion of Aluminum Sections](#)

Alfred Steinmetz

SMS Hasenclever Maschinenfabrik GmbH, Düsseldorf

(1984)

[Methods for the Improvement of Quality, Productivity and Competitive Position](#)

Howard S. Gitlow

Paul T. Hertz

University of Miami

SCRAP PREPARATION AND FURNACE

(1984)

[Use of Coreless Induction Furnaces for D.C. Casting of Billet](#)

Kenneth C. Hagerman

PIMALCO

(1984)

[Development of a Continuous Melting Furnace for Aluminum](#)

David Barnes

Joe Bass

Southwire Company

(1984)

[High Temperature Recuperators for Aluminum Melting Furnaces](#)

P.G. LaHaye

R. Woodward

S. Young

Hague International

(1984)

[Convective Heating and Revised Controls Improve Melters' Productivity and Efficiency](#)

John S. West

Hauck Manufacturing Co.

(1984)

[An Efficient Automated Scrap Handling System for Primary and Secondary Scrap](#)

John F. Loudis

International Baler Corporation

BILLET CASTING

(1984)

[Cast House Modernization](#)

James A. Kennedy

The William L. Bonnell Company, Inc.

(1984)

[Design and Operation of Alcan Arvida's New Billet Production Center](#)

I.C. Smith

Alcan Smelters and Chemicals, Ltd.

(1984)

[Automating the D.C. Casting Process](#)

Eric Marsden

Ascast Corp.

(1984)

[Application of New Hot Top Process to Production of Extrusion and Forging Billet](#)

Shigeru Yanagimoto

Ryota Mitamura

Showa Aluminum Industries K.K.

(1984)

[Hot Top Billet Casting Employing a Graphite "Air Bearing" Casting Surface](#)

Frank E. Wagstaff

Richard J. Collins

Wagstaff Engineering Inc.

(1984)

[Comparison of Types of Burners Used in Aluminum Melting](#)

James R. Ogle

Warwick Furnace Company

QUALITY CONTROL, DEGASSING, FILTRATION

(1984)

[Forced Circulation of Molten Aluminum Utilizing Electromagnetics](#)

Kenneth J. Exton

M & T Manufacturing Company

(1984)

[Use of Telegas Instrument in Quality Control](#)

Douglas A. Granger

Aluminum Company of America

(1984)

[Reynolds 4MJ System Capabilities and Applications](#)

Thomas L. Mansfield

Reynolds Metals Co.

(1984)

[MINT Improves Hard Alloy Extrusion Quality](#)

G.E. Stein

J. E. Dore

C. C. Manzonelli

Consolidated Aluminum Corporation

(1984)

[In-Line Refining With SNIF](#)

Roger N. Dokken

Union Carbide Corporation

(1984)

[Energy Conservation in a Large Aluminum Melter](#)

Charles A. Licht

Charles Licht Engineering Associates, Inc.

(1984)

[Saving Energy Safely When Heating Aluminum](#)

Richard Reed

North American Mfg. Co.

REFRACTORIES, BURNERS, ENERGY & FUEL

(1984)

[Aluminum Furnace Large Block Refractory Linings](#)

M. A. Schnake

D.A. Ehrhardt

A.P. Green Refractories Co.

(1984)

[Selection and Use of Aluminum Contact Refractories](#)

Harry E. Miller

Kaiser Aluminum & Chemical Corporation

(1984)

[Fuel Consumption Data for a Gas-Fired Log Homogenizer](#)

Robert H. Ross

Sunbeam Equipment Corporation

(1984)

[Biomass Fuel: An Economical Alternative for Aluminum Melting Furnaces](#)

David F. Brashears

Joe T. Mollick

General Combustion Corporation

(1984)

[Continuous Homogenizing of Logs](#)

Friedrich W. Elhaus

Elhaus Industrieanlagen GmbH

(1984)

[Homogenizing of Extrusion Ingots in a Continuous Furnace](#)

William Reynolds Solaini

J.T. Thorpe Inc.

SAWING, HOMOGENIZING, BILLET HANDLING

(1984)

[Cutting Aluminum Billets and Extrusions on Band Machines](#)

Arthur R. Meyers

DoAll Company

(1984)

[Recent Developments in Billet Casting and Sawing Systems](#)

A.I. Nussbaum

Loma Machine Mfg. Co., Inc.

(1984)

[Sawing Technology Today and Tomorrow](#)

Roger D. Postema

Oliver Machinery Company

(1984)

[Computer Controlled Billet Stacking](#)

Francis F. McFall

Spurgeon Company

(1984)

[Sound Quality Control Procedures in Billet Casting](#)

Heinz O. Titze

Consolidated Aluminum

MICROPROCESSOR APPLICATION IN THE EXTRUSION PROCESS

(1984)

[The Application of Microprocessor-Based Programmable Logic Controllers to the Aluminum Extrusion Process](#)

Roger Beard

Leslie A. Spooner

Brian C. Billingham

Fielding & Platt Limited

(1984)

[Automated Extrusion Plants Come of Age in Europe](#)

Fritz Thurnheer

Norsk Hydro-Aluminiumwerk Nenzing GmbH

(1984)

[Microcomputer Control of Billet Shearing at the Press After Homogenization and the Effects on the Metallurgical Properties of Products](#)

Shinji Ohmura

Yoshihiro Mizutani

Kimio Komatsu

Tadashi Furuya

Nippon Light Metal Co., Ltd.

(1984)

[The Control and Monitoring of the Aluminium Extrusion Process](#)
[The State of the Art in the Mid 1980s](#)

Frank Kelly
Frank Kelly Systems, Ltd.

(1984)

[Computerized Extrusion Production Control Systems](#)

James H. Foy
Foy, Inc.

(1984)

[Extrusion Press Control by Micro-Computer Assistance and Automatic Billet Handling System](#)

Masahiro Iwata
Furukawa Aluminum Co., Ltd.

GENERAL PLANT AUTOMATION

(1984)

[Getting Started in Programmable Controllers](#)

Rodney Wirtz
Kaiser Aluminum & Chemical Corp.

(1984)

[Computer Assisted Packing of Extrusions](#)

James D. McKay
R. D. Werner Co., Inc.

(1984)

[Computerized Shipment Planning of Extrusions and Drawn Tube](#)

R. David Rice
Nelson L. Martin
Aluminum Company of America

(1984)

[Basics of Robotics](#)

Ray Hinson
Robot Systems, Inc.

(1984)

[The Extrusion Process, Technically and Ergonomically Obsolete](#)

Mar Boers

Boal Aluminum

SAFETY & ENVIRONMENT

(1984)

[Extrusion Press Safety](#)

J.R. Faassen

R.P. Teets

Aluminum Company of America

(1984)

[Aluminum Forming Effluent Limitations as Applied to the Extrusion Industry](#)

Morgan E. Kommer

Aluminum Company of America

Jack H. Goldman

The Aluminum Association, Inc.

(1984)

[A Lock Out/Tag Out Procedure That Works](#)

Rodney Wirtz

Kaiser Aluminum and Chemical Corp.

(1984)

[Aluminum Extrusion Sawing Noise Reduction](#)

John S. Stewart

Noise Control Services, Inc.

(1984)

[Reclamation of Aluminum Finishing Sludges: Liquid Aluminum Production](#)

F. Michael Saunders

Georgia Institute of Technology

(1984)

[Evaluating Clothing Materials for Molten Metal Exposures](#)

B.J. Sasser

Reynolds Metals Company

[1984 Glossary](#)

PROCEEDINGS OF THE FOURTH INTERNATIONAL ALUMINUM EXTRUSION TECHNOLOGY SEMINAR - 1988

April 11 - 14, 1988 Chicago, Illinois, U.S.A.

To Use Table Of Contents: Click on a [blue paper title](#) below to view that paper. To return to this Table of Contents, click PREVIOUS MENU in the bookmarks at left.

(1988)

[ET '88 Overview](#)

Robert I. Werner

R.D. Werner Co., Inc.

BILLET PLANT OPERATIONS ADVANCED PLANT AND PROCESSING

(1988)

[Raw Material Blending System](#)

Jeffery T. Bopp and Rodney C. Lee

Nichols - Homeshield

(1988)

[An Advanced Scrap to Extrusion Billet Conversion Facility](#)

Wolf D. Breit

Deeside Aluminium Limited

SAWING AND DROSS COOLING

(1988)

[Aluminum Sawing Advances](#)

Arthur R. Meyers

DoAll Company

(1988)

[Dross Cooling](#)[How to Reduce Your Metal Loss](#)

Barry J. Davies and J. Philip McMahon

MFS Metallurgical Inc.

SAFETY, QUALITY CONTROL, DEGASSING AND FILTRATION

(1988)

[Causes and Prevention of Molten Aluminum-Water Explosions](#)

Seymour G. Epstein

The Aluminum Association, Inc.

(1988)

[A New In-Line Aluminum Treatment System Using Non-Toxic Gases and a Gas Permeable Vessel Bottom](#)

Debabrata Saha, James Heffron and J. Scott Becker

Air Products and Chemicals, Inc.

(1988)

[Reactive Gas Blanketing for Molten Aluminum-Lithium Alloys or Pure Lithium.](#)

J.S. Becker, J.M. Curran and Z. Zurecki

Air Products and Chemicals, Inc.

(1988)

[AGA Mix 14C Practical Implementation of Aluminum Degassing](#)

Timothy P. Rack and Ronald Corns

AGA Gas, Inc.

(1988)

[Improving Extrusion Quality Through Molten Metal Degassing and Filtration](#)

David V. Neff

Metaullics Systems

(1988)

[The METAULLICS MULTICAST Filtration System as Used at the Longview Reduction Plant of Reynolds Metals Co.](#)

Harry Olson

Reynolds Metals Company

BILLET CASTING

(1988)

[Recent Advances in Extrusion Billet Casting Equipment](#)

A.I. Nussbaum

LOMA Machine Manufacturing Company

- (1988)
[Automated D.C. Casting for Aluminum Extrusion Plants](#)
Warren J. Nelson
Reynolds Metals Company
- (1988)
[An Enhanced Cooling Technique for Air Cushion Hot Top Billet Casting](#)
Frank E. Wagstaff
Wagstaff Engineering
- (1988)
[Impact of Airslip Technology on Billet Production and Quality at Dubai Aluminium Company Limited](#)
Clive M. Taylor
Dubai Aluminium Company Limited
- (1988)
[Developments in 6000 Series Alloy Billet Technology](#)
C.J. Heathcock, J.D. Cooke and S.A. Nugent
Comalco Research Centre
- (1988)
[Billet Improvements Made Through Mould Developments](#)
David T.T. Auchterlonie and C. Lloyd Radford
Alcan Smelters and Chemicals Ltd.
- (1988)
[Relative Influence of the Different Steps of the Billet Fabrication on the Productivity and Quality of Extrusions](#)
Alexandre Annenkoff
Pechiney
- (1988)
[Modern Efficient Techniques of Handling Scrap Aluminum Extrusions](#)
Raymond Sloan
Sloan Metal Company Inc.

BURNERS AND ENERGY EFFICIENCY

- (1988)
[Heat Reclamation Case Histories on Aluminum Melters](#)
Olney Dekker
North American Manufacturing Company
- (1988)
[Pulse Burner Control for Aluminum Furnaces](#)
Tony Martin
Hauck Manufacturing Company
- (1988)
[PYRETRON, a Variable Gas/Oxygen/Air Combustion System for Aluminum Melting](#)
Gregory M. Gitman
American Combustion, Inc.
- (1988)
[Melting Efficiency with a Ceramic Recuperator](#)
E. Steve Baughn and Jim Clarkson
Southwire Company
- (1988)
[Current European Technology Affecting Costs and Production in Melting and Billet Heating Operations](#)
Adam E. Glotnis
Gasmac Incorporated

REFRACTORIES

- (1988)
[Ultra Low Cement Castable Technology: How to Cast a Brick Lining](#)
Allen R. Davis
A.P. Green Industries, Inc.
- (1988)
[Gunned Plastic Linings for the Aluminum Furnace](#)
D.A. Ehrhardt and P.D. McConnell
A.P. Green Refractories Co.

(1988)
[The Evolution of Refractories for Molten Aluminum Containment and Installation Techniques](#)
Alex H. Harvey
Plibrico Company

(1988)
[Heat Insulating Refractories for Molten Aluminum Contact](#)
Steven R. Schenck
Rex Roto Corporation

(1988)
[Ceramic Application in Cast House Units](#)
V.L. Hammersmith
Permatech, Inc.

(1988)
[Refractory Advances for Aluminum Melting Furnaces](#)
J.M. McCollum
Harbison-Walker Refractories

AUTOMATED PLANT OPERATING EXPERIENCE AND PRODUCTIVITY

(1988)
[Productivity Improvement Through Scrap Reduction](#)
Guy Bessey
CLECIM

(1988)
[A Just-In-Time Program That Works](#)
James S. Sanderson
Kaiser Aluminum & Chemical Corporation

(1988)
[The Extrumax System: A New Dimension in the Extrusion Process, A New and Optimal Way to Extrude Sections](#)
G.A. Oude Ophuis
Extrumax Systems & Consultancy

(1988)

[Optimization Not Necessarily Automation](#)

L.D. Elliott

SAPA Aluminium Extrusions

(1988)

[Experience with the Automated Press Line of Hydro Aluminum Nenzing](#)

Ing. Herbert Höller

Hydro Aluminium Nenzing

(1988)

[Extrusion Processing Equipment Developed from the Extruder's Point of View](#)

Mario Bertoli and Domenico Bertoli

METRA S.p.a.

Bruno Marinelli and Annibale Mensi

OMAV S.p.a.

(1988)

[Automated Heat Treating System as Part of the Modern Extrusion Plant](#)

John C. Bugai

Granco Clark, Inc.

David J. Dombrowski

R.D. Werner Co., Inc.

COMPUTERIZED EXTRUSION PLANTS

(1988)

[Computer Integrated Manufacturing Press Information Systems](#)

P.J. Schipper

Kaiser Aluminum & Chemical Corporation

(1988)

["CIEM": Computer Integrated Extrusion Manufacturing](#)

John C. Bugai

Granco Clark, Inc.

(1988)

[Control the Automated Extrusion Process with the Supervisory Computer](#)

Charles B. Gentry

Granco Clark, Inc.

- (1988)
[Management Information, Control and Diagnostics in Automated Aluminum Extruding](#)
A.W. Barrett
Edwards of Enfield Ltd.
- (1988)
[Setting of Extrusion Parameters by Support of a Computer](#)
Sverre Andreas Brandal
Hydro Aluminum a.s., R&D-Centre
- (1988)
[Production Control of Extrusion Plant by Non-Stop Computer System and CAD/CAM for Die Design and Manufacturing](#)
Yoshinari Oki
Sankyo Aluminum Industry Co., Ltd.
Tetsurou Toumi
Toyama Light Metal Industry Co., Ltd.

EXTRUSION PRESSES

- (1988)
[Optimized Extrusion Press Control](#)
Scott L. Ziegenfuss
The Rexroth Corporation
- (1988)
[New Control Concepts Improve Extrusion Press Productivity](#)
Jack Hayes
The Oilgear Company
- (1988)
[The Automated Plant: What Should We Demand of the Press?](#)
Jeffery P. Dziki
SMS Sutton Inc.
- (1988)
[The Modernization of Extrusion Press Control](#)
Frank Kelly
Frank Kelly Systems Limited

(1988)

[Development of Multi-Type Extrusion Press](#)

Masakazu Ueda, Hidehiro Tsuzuki, Tomiharu Matsushita, and Kazuyuki Kita
Kobe Steel, Ltd.

(1988)

[New Revolver-Type Extrusion System for Aluminum Alloy Billets](#)

Dr. Ing. Giancarlo Cristiani
Danieli: Engineering Division

STRETCHER SAFETY

(1988)

[Stretcher Jaw Guard for an Extrusion Press](#)

Colin C. Ward
Kaiser Aluminum and Chemical Corporation

FINISH SAW

(1988)

[Advanced Extrusion Saws and Gauging Systems](#)

M. Dana Baldwin, II
Oliver Machinery Company

**AUTOMATED HANDLING SYSTEMS, PULLERS, STRETCHERS, SAWS, STACKERS,
AND AGING SYSTEMS**

(1988)

[Automatic Handling System](#)

Guy Bessey
CLECIM

(1988)

[Evaluation of Automatic Stackers](#)

Paul Truninger
Truninger AG

(1988)

[An Extruder's Overview of Automation: Using In-House Know How to Design and Build a Functional Handling System](#)

Garland R. Mills

Wells Aluminum Corporation

(1988)

[Double Puller](#)

Randy V. Britton

Tifton Aluminum Co.

(1988)

[The Current Progress of Automated Aluminium Extruding and Its Implications for Management](#)

J.A. Edwards

Edwards of Enfield Ltd.

(1988)

[New Extrusion Press and Handling Table for Factory Automation System](#)

David L. Kurtak

UBE Industries (America), Inc.

(1988)

[Multipuller Handling System for Fast Revolver-Type Extrusion Presses](#)

Dr. Ing. Giancarlo Cristiani

Danieli, Engineering Division

BILLET HEATERS/HOT SHEARS

(1988)

[Recent Technology of Hot Log Shearing](#)

Guy Bessey

Clecim

(1988)

[The Furnace Integrated "Quick Cycle" Log Shear](#)

Bryan Emes

Mechatherm Engineering Limited

ROBOTS

(1988)

[Robot Ingot Handling](#)

David M. Geyer and Gerry J. Dail, P.E.
Aluminum Company of America

EXTRUSION PROCESS

(1988)

[A New Extrusion Process for Aluminum Tubing](#)

Tatsuro Matsuoka, Toshio Watanabe and Hirokaku Yamaguchi
Furukawa Aluminum Co., Ltd.

(1988)

[New Aluminium Hard Alloys Extrusion Process Through Indirect Presses](#)

Guy Bessey
Clecim Company

(1988)

[Indirect Extrusion: Why Would You Want It?](#)

Irvin A. Schmit
Cressona Aluminum Company

(1988)

[Extrusion Control in Manufacturing Profiles of Complex Shapes](#)

Kan-Takemura
Kyushu Fuji Sash Corporation

EXTRUSION PLANT MAINTENANCE MANAGEMENT AND PRESS REFURBISHMENT

(1988)

[Expert System Basics with an Extrusion Press Application](#)

Rodney Wirtz
Kaiser Aluminum and Chemical Corp.

(1988)

[Successful Maintenance Management in an Extrusion Plant](#)

Colin C. Ward
Kaiser Aluminum and Chemical Corp.

(1988)

[Eliminating Downtime](#)

Mar Boers

Boal Aluminium

(1988)

[Ultrasonic Inspection of Extrusion Press Tie Rods](#)

Oliver G. Worton

West Penn Testing Laboratories, Inc.

(1988)

[The Rigorous Requirements of Installing an Automated Extrusion Plant](#)

Gabe Caponera

Taft Contracting Company, Inc.

(1988)

[Modernizing Older Extrusion Presses](#)

James Pope

R.L. Best Company

DIE CORRECTION

(1988)

[The Contribution of the Die to Surface Quality](#)

Gary W. Dion

Nova Tool and Die, Inc.

(1988)

[Die Design and Die Correction as Affected by Pullers](#)

Gunar Bilén

ProfilGruppen AB

(1988)

[Die Correction, Weld Plate and Pocket Dies](#)

William J. Mason

Wells Aluminum Corporation

DIE MAKING TECHNOLOGY

(1988)

Die Design and Construction in Europe

Alan Castle, Roger Flory and John Gagg

Service Aluminium Co. Ltd. & Service Extrusion Consultants

(1988)

Surface Finishing with Abrasive Flow Machining

Tom Kohut

Extrude Hone Corporation

(1988)

Extrusion Die Making in the United States

Luis E. Bello

Garbell Tool and Die Co., Inc.

(1988)

Die Making in the Nineties

Jan Aalberts and Wim H. Philipsen

Aalberts Industries N.V.

(1988)

High Technology of Extrusion Die Manufacture

Gary W. Dion

Nova Tool and Die, Inc.

(1988)

Advances in Die Making with CNC EDM

Jack Harbison

Nova Tool and Die, Inc.

(1988)

New High Performance EDM Wires Offer Die Shops Significant Productivity Improvements

Dr. D.S. Tomalin

Composite Concepts, Inc.

DIE COOLING TECHNIQUES

(1988)

[Improved Cooled Dies for Increasing Aluminum Extrusion Productivity](#)

Robert J. Fiorentino and E. Garland Smith, Jr.
Battelle-Columbus Division

(1988)

[Efficient Use of Liquid Nitrogen for Aluminum Extrusion Die Cooling and Inerting](#)

Michael A. Marchese and John J. Coston
Union Carbide Corporation-Linde Division

(1988)

[Pressure Swing Adsorption Reduces Aluminum Extrusion Production Cost](#)

George J. Waite
Kaldair Inc.
Francis D. Gutowski
The Analytix Group

(1988)

[PSA Nitrogen for Shrouding Aluminum Extrusions](#)

Dale C. Miller and Steven G. Ruoff
Air Products and Chemicals, Inc.
Robert H. Maynard
Three Rivers Aluminum Company (TRACO)

NITRIDING

(1988)

[Plasma Nitriding Extends Die Life](#)

Sidney Dressler
SECO/Warwick

(1988)

[Benefits of Nitrogen Addition for Increased Wear Resistance of Aluminum Extrusion Dies by Ion Nitriding](#)

R.O. Denton
Sun Steel Treating Inc.

NITROCARBURIZING

(1988)

[Ferritic Nitrocarburizing: A "New" Surface Treatment for Aluminum Extrusion Dies](#)

Timothy A. McLaughlin

Can-Eng Manufacturing Ltd.

(1988)

[The Fluidized Bed Nitriding of Aluminum Extrusion Dies](#)

Joseph Poliseo

Procedyne Corporation

DIE STEELS

(1988)

[A New Hot-Work Steel for Improved Tool Performance in Aluminum Extrusion](#)

Odd Sandberg

Uddeholm Tooling AB, Technology Center

(1988)

[A New Hot-work Die Steel for Aluminum Extrusion Tooling](#)

Thomas J. McCaffrey

Carpenter Technology Corporation

FIXED DUMMY BLOCKS

(1988)

[The Fixed Dummy Block](#)

Guy Bessey

Clecim

(1988)

[Fixed Dummy Block Extrusion](#)

Alan F. Castle

Service Extrusion Consultants

SHOP OPERATIONS

(1988)

Evaluation of Die Cleaning Process at R.D. Werner Co., Inc.

Michael McManus

McManus Engineering Company

(1988)

Procedures for Proper Receipt of Extrusion Dies

Johnie L. Adams

Magnode Corporation

SPL SESSION C: Al-Li ALLOYS

(1988)

Experience on the Extruding of Aluminum-Based Advanced Materials

Wolf-Dieter Finkelburg and Gunther Scharf

Vereinigte Aluminium-Werke AG, Leichtmetall-Forschungsinstitut

(1988)

Extrudability and Performance of Al-Li-Cu-X Alloys

Michael H. Skillingberg and Richard F. Ashton

Reynolds Metals Company Metallurgy Laboratory

(1988)

Effect of Processing Variables on the Properties of Al-Li-Cu-Mg-Zr Alloys AA2091 & AA8090
Produced By Extrusion

T. Sheppard, M.J. Tan, Dr. H.M. Flower and A.K. Mukhopadhyay

Royal School of Mines, Imperial College

(1988)

An Experimental Design to Determine the Effects of Extrusion Variables on the
Microstructure and Properties of an Al-2.6Li-0.09Zr Alloy

T.H. Sanders, Jr.

School of Materials Engineering, Georgia Institute of Technology

B.M. Hillberry

School of Mechanical Engineering, Purdue University

A.F. Grandt, Jr.

School of Aeronautical and Astronautical Engineering, Purdue University

STATISTICAL PROCESS CONTROL AND QUALITY CONTROL

(1988)

[Use of Statistically Designed Experiments in an Extrusion Plant](#)

Viola R. Bird

Aluminum Company of America

(1988)

[Statistical Process Control Application to the Aluminum Extrusion and Drawn Tube Process](#)

Robert F. Wolf

Aluminum Company of America

(1988)

[Alcoa-Vernon Works' Quality Project Teams](#)

William J. Boyle

Aluminum Company of America

(1988)

[Why Waste Time Experimenting?](#)

Robert W. Hains

Alcan Extrusions

(1988)

[SPC Reduces Scrap in an Aluminum Extrusion Plant](#)

Nicholas P. Demos

Demos Associates

(1988)

[Special Features of Process Defects in Aluminum Alloy Extrusions](#)

A.K. Das

Hindustan Aeronautics Limited

(1988)

[The Material Flow in the Extrusion of Hollow Aluminum Sections Through Hollow Dies](#)

I. Duplancic

Fakulete Electrotehnike, Strojarstva i Brodogradnje

J. Prjin

SOUR Industrije Aluminija

EXTRUSION TECHNOLOGY AND TEMPERATURE MEASUREMENT

(1988)
[Estimation Optimal Speed/Temperature Parameters to Maximize Hot Extrusion Exit Speed](#)

Wojciech Misiolek

The (Cracow) Academy of Mining and Metallurgy, (Currently with) Lehigh University

Jozef Zasadzinski

The (Cracow) Academy of Mining and Metallurgy

(1988)
[Numerical Simulation of Two-Dimensional Hot Extrusion of Aluminum](#)

G.E. Macey and M. Salim

Alcan International Limited

(1988)
[Study of Electrical Conductivity of an Al-Mg-Si Alloy](#)

S.K. Mehrotra, U. Ghosh and S.K. Mukherjee

Bharat Aluminium Co. Limited

(1988)
[Measuring Internal Temperatures of Aluminum Extrusions](#)

M.L. Mester

The Aluminum Association, Inc.

A.H. Kahn and H.N.G. Wadley

National Bureau of Standards

(1988)
[Extrusion Temperature Measurement with a Radiation Thermometer](#)

E.R. Pickering

Reynolds Metals Company

(1988)
[ReflectanceCRatio Radiation Thermometry Applied to Aluminum Samples: Status Report](#)

G.D. Nutter

Instrumentation Systems Center, College of Engineering, University of Wisconsin-Madison

(1988)

[Evaluation and Extension of the Spectral-Ratio Radiation Thermometry Method](#)

G.J. Dail and M.G. Fuhrman
Aluminum Company of America

D.P. DeWitt
School of Mechanical Engineering, Purdue University

SPL SESSION A: DIE LINES, SURFACE TEARING AND METAL FLOW

(1988)

[The Effect of Billet Preheating Practice on Extrudability of Al-Mg-Si Alloys](#)

Oddvin Reiso
Hydro Aluminum a.s.

(1988)

[Die Temperatures in Aluminium Extrusions](#)

Martin Lefstad
The Foundation for Scientific and Industrial Research, Norwegian Institute of
Technology

(1988)

[Simulation of Hot Tearing of Aluminum Alloys](#)

O. Lohne
SINTEF, Division of Metallurgy
N. Ryum
The Norwegian Institute of Technology (NTH) Department of Metallurgy

(1988)

[Surface Formation in Al-Extrusion \(Direct Extrusion\)](#)

Henry Valberg
University of Trondheim
The Norwegian Institute of Technology Department of Materials and Processes

(1988)

[Physical Simulation of Metal Extrusion by Means of Model Materials](#)

Henry Valberg
University of Trondheim
The Norwegian Institute of Technology Department of Materials and Processes

(1988)

[The Origin of Surface Defects During Extrusion of AA6063 Alloy](#)

Dr. T. Sheppard and Dr. M.P. Clode

Department of Materials, Royal School of Mines, Imperial College

(1988)

[Analysis of Metal Flow and Recrystallization Behavior in Extrusion and Application of the Results to Commercial Production](#)

Shigeyuki Kikuchi and Minobu Sukimoto

Showa Aluminum Corporation

Kenji Nakanishi

Faculty Engineering, Kagoshima University

(1988)

[Control of Metal Flow in Extrusion Dies](#)

Dr. Rudolph Akeret and Dr. Werner Strehmel

Swiss Aluminium Ltd.

BILLET TECHNOLOGY AND WELDABILITY

(1988)

[Aluminum Quality Evaluation Using High Resolution Image Analysis](#)

R.N. Dokken, T.G. Kinisky and K.B. Reuter

Copyright 1987

Union Carbide Corporation

Tarrytown Technical Center

Tarrytown, NY

(1988)

[Melting and Casting Facilities, Using a Simulation Model to Select the Best Size and Configuration](#)

Thomas H. Howell

Aluminum Company of America

Richard A. Penington

Arthur Andersen & Company

(1988)

[How Casting Methods Can Affect the Quality of 6063 Extrusion Billets](#)

Dr. Johann Langerweger

Profilex AG

(1988)

[Billet Consistency Via Quality Control and Comparative Evaluations](#)

Clark H. Weaver

Alcan Smelters and Chemicals Ltd.

(1988)

[Compositional Factors Affecting Weldability of Extruded Aluminum Alloys](#)

C.E. Cross

IMAC Research and Consulting

D.L. Olson

Center for Welding and Joining Research, Colorado School of Mines

(1988)

[Influence of Cast Structure on Extrusion of Aluminum Alloys](#)

B.K. Agrawal, Sr. and J.P. Singh

Hindustan Aluminium Corporation Ltd.

(1988)

[Theory and Application of Liquid Stabilized Plasma Technology and Its Application on Thermo-Deposited Bodies Resistant to Molten Aluminum and Zinc](#)

Jorge A. Morando

Plasmafusion, Inc.

Werner Schultz

Vereinigte Aluminium-Werke AG, Leichtmetall-Forschungsinstitut

MARKETING

(1988)

[Market TrendsCEurope, Japan and North America](#)

John Bridgeman

Extrusion Division of British Alcan Aluminium plc

(1988)

[Merging Marketing and Technology](#)

David T. Wilson

Institute for the Study of Business Markets, Penn State University

(1988)

[Marketing Planning](#)

Michael J. Ott

Extrusion Division, Reynolds Metals Company

(1988)

[Aerospace Materials for the Twenty-First Century](#)

Dr. Peter Cannon

Rockwell International Corporation

DESIGN AND DEVELOPMENT

(1988)

[The Advantages of Aluminum Extrusions Compared with Some Competitive Materials and Methods of Forming](#)

Joseph J. Despoy, Richard M. Kelly and James D. McKay

R.D. Werner Co., Inc.

(1988)

[The Industrial Designer's Role in New Product Development and How to Support That Activity for Improved Sales of Extrusion](#)

Emerson J. Purkapile

Banka Mango Design, Inc.

(1988)

[Tolerances for Extruded Products](#)

E.T. Mackay

Grumman Olson, Engineering

THE CUSTOMER'S PERSPECTIVE

(1988)

[What's in the Box?](#)

Austin R. Baer

Roton Corporation

FINISHING OF EXTRUSIONS

(1988)

[Designing an Automated Extrusion Anodizing Facility](#)

Glenn C. Schoener

Walgren Company

(1988)
[Correlation Between Extrusion Practices and Appearance of Anodized 6063 Alloy Extrusions](#)
John P. Faunce
Easco Aluminum

(1988)
[Powder Coatings and Their Market Advantages](#)
Dr. Richard J. Higgins
Powder Coatings Services Group, International Paint plc

(1988)
[Polyester Powder Coating Systems for Architectural Aluminum in Europe](#)
Dr. E. Bodnar and H.-J. Alfort
VP-Vereinigte Pulverlack GmbH

BAR CODING

(1988)
[Bar Coding and Data Collection for Manufacturing and Distribution Industries](#)
Barry I. Rothschild
Barrot Consultants, Incorporated

(1988)
[Bar Code Standards for the Aluminum Industry](#)
John Dickinson
The Aluminum Association, Inc.

INTERACTIONS

(1988)
[Advances in Computer Technology for Customer Communication](#)
James H. Foy
Foy Inc.

(1988)
[Electronic Data Interchange \(EDI\) in the Aluminum Industry](#)
Donald H. Spiegel
Aluminum Company of America
and
Chairman, Aluminum Customer Communication System Committee
The Aluminum Association

(1988)

[Aluminum Extrusions, A Highly Competitive Market: How Can Technology Help?](#)

Victor R. Johnson

Indal Aluminum Division, Indal, Inc.

(1988)

[Package Design for Aluminum Extrusion Products](#)

John Pesek

Cupples Products Division, H.H. Robertson Company

(1988)

[Curving of Aluminum Extrusions](#)

Brian Geary

Versaform Corporation

(1988)

[Precision Cutting and Marketing of Metals to Increase Profits](#)

Kenneth E. Forman

Metl-Saw Systems, Inc.

SPL SESSION B: CONFORM

(1988)

[Aluminum Extrusions by CONFORM](#)
[An Update on Development Experience at the Springfields Laboratories of the U.K. Atomic Energy Authority](#)

Harold Keith Slater and Peter Michael Coon

UK Atomic Energy Authority

(1988)

[Recent Developments in CONFORM and CASTEX Continuous Extrusion Technology](#)

Dr. Johann F. Langerweger

Profilex AG

Brian Maddock

Holton Machinery Ltd.

(1988)

[Metallurgical Considerations for Quality Improvements of CONFORM Aluminum Products](#)

Dr. Uday Sinha

Southwire Company

Dr. E. Henry Chia

Georgia Research Institute

(1988)
[The Technical Development of a New Extrusion Company Solely Using Conform Machines](#)
Dr. R.D. Parkinson
Continuous Extruded Products, Inc.

(1988)
[Present Capability and Future Potential of the CONFORM/CONKLAD Universal Machine](#)
Roy Molyneaux
Babcock Wire Equipment Ltd.

PRINT ONLY

(1988)
[Aluminum Extrusion Sawing Noise Reduction Program Third Year Report](#)
John S. Stewart
Noise Control Services, Inc.

(1988)
[Selecting the Proper CAD/CAM Solution for Designing and Manufacturing Aluminum Extrusion Dies](#)
Steve Runkel
Harris Corporation, Computer Services Division

(1988)
[Precision and Accuracy of Several Hardness and Tension Test Methods Revisited](#)
Robert I. Werner
R.D. Werner Co., Inc.

[1988 Glossary](#)

**PROCEEDINGS OF THE FIFTH INTERNATIONAL
ALUMINUM EXTRUSION TECHNOLOGY SEMINAR - 1992**

May 19 - 22, 1992 Chicago, Illinois, U.S.A.

To Use Table Of Contents: Click on a [blue paper title](#) below to view that paper. To return to this Table of Contents, click PREVIOUS MENU in the bookmarks at left.

(1992)

[Overview "ET '92" 5th International Aluminum Extrusion Technology Seminar](#)

Viola R. Bird

Aluminum Company of America

Vice-Chairman, ET '92

James E. Bird Materials Scientist and Consultant

(1992)

["Total Quality Management": Survival and Success in Today's Extrusion Industry](#)

Richard G. Holder

Reynolds Metals Company

(1992)

[Major Product Developments Influencing Worldwide Extrusion Consumption](#)

Ivar Hafsett

Hydro Aluminium

(1992)

[Aluminium and Ecology in the European Aluminium Association](#)

Ralph-Eric Frankenfeldt

Alusuisse-Lonza Services Ltd., Switzerland

BILLET CASTING

(1992)

[Recent Advances in Vertical Direct Chill Casting Equipment for Extrusion Billet Production](#)

A.I. Nussbaum

Loma Machine Manufacturing Company

(1992)

[Innovations in Hard Alloy Hot Top Casting Systems](#)

Robert B. Wagstaff and J. Martin Ekenes

Wagstaff Engineering Inc.

(1992)

[Modular Mould System for Casting Extrusion Ingots](#)

David T.T. Auchterlonie
Alcan Smelters and Chemicals, Ltd.
Neil B. Bryson, Guy LeBlanc
Alcan International, Ltd.
Vincent J. Newberry
Alcan Rolled Products

(1992)

[Study of Al-Ti-B-R_e Alloys as Grain Refiners of Aluminum and Its Alloys](#)

Liu Jin Hui, Lin Feng and Lin en Kui
Fujian Research Institute of Metallurgical Industry
Fuzhov, P.R. of China

(1992)

[Production of High Strength Aluminum Alloys with WAGSTAFF MAXICASTJ System](#)

J.A. Brock and R.R. Avery
Aluminum Company of America

(1992)

[Development of High Speed Horizontal Continuous Casting in 6063 Billets and Billet Quality](#)

Makoto Arase, Norio Ohhatake, and Yoshitaka Nagai
Yoshida Kogyo K.K.

(1992)

[Billet Casting: Methods for Improving Quality](#)

Simon Turcotte
Aluminerie de Becancour Inc.

SAFETY AND GENERAL OPERATIONS

(1992)

[Quality Improvements in an Aluminum Extrusion Billet Casting Facility](#)

Matthew J. Schwarz
Wells Aluminum Corporation

(1992)

[Implementing Purchased Scrap into an Aluminum Operation](#)

R.J. McHale and D.W. Sites
Cressona Aluminum Co.

(1992)

[Molten Aluminum-Water Explosions: An Update](#)

Seymour G. Epstein

The Aluminum Association, Inc.

(1992)

[Safety and Health Issues in Scrap Charging](#)

D.C. Pierce

Reynolds Metals Company

F.R. Hubbard

IMCO Recycling, Inc.

REFRACTORIES AND MODELING OF CASTING PROCESS

(1992)

[Materials for Casting Equipment](#)

Virginia L. Hammersmith

Permatech Inc.

(1992)

[Mathematical Modeling of Heat Transfer and Thermal Stresses in Aluminum Billet Casting:
Influence of the Direct Water Cooling Conditions](#)

Hallvar G. Fjær

Institutt for Energiteknikk, Kjeller, Norway

Einar K. Jensen

Elkem a/s Research, Kristiansand, Norway

Aasbjørn Mo

Senter for Industrieforskning, Oslo, Norway

METAL TREATMENT

(1992)

[Prediction of the Microstructure of DC Cast 6063 Billets and its Effect on Extrusion Processes](#)

Chris Devadas, Ivo Musulin, and Olaf Celliers

Comalco Research Centre

(1992)

[Method for Evaluating Grain Refiner Rod](#)

Donald J. DeBall

Alumax Extrusions, Inc.

Barbara Kidwell

AMAX Research & Development Center

(1992)

[Filtration Efficiency and Engineered Performance Improvements of Fully Sintered Reticulated Ceramics for Non-Ferrous Alloy Filtration](#)

L. Strom and J.W. Black

Hi-Tech Ceramics

R.I.L. Guthrie and C. Tian

McGill University

(1992)

[New In-Line Technology Combining Degassing and an Efficient Removal of Non-Metallic Inclusions by Gas Fluxing](#)

A.O. Aarflot

Hydro Aluminium

S.T. Johansen and K. Venås

SINTEF Metallurgy

(1992)

[Improvements in Extrusion Properties and Practice Through the Use the SNIF® In-Line Refining](#)

M. Bertolli and G. Bosetti

METRA S.p.A.

METAL TREATMENT AND HOMOGENIZING

(1992)

[PHOENICS Model for a Billet Homogenization Furnace](#)

Peter Cook and Ivo Musulin

Comalco Research Centre

(1992)

[The Hertwich Continuous Homogenizing System Operating at INESPAL, Aviles, Spain](#)

Dr. Placido Garcia

INESPAL/Aviles, Spain

Günther Hertwich

Hertwich Engineering, Austria

(1992)

[Improved Methods of Log Cooling](#)

Jack Mahoney

Seco/Warwick Corp.

DROSS HANDLING AND ENERGY ADVANCEMENTS

(1992)

[The Inert Gas Dross Cooler Experience and Applicability](#)

Michael J. Kelley

Metal Exchange Corporation

(1992)

[Energy and Materials Conservation by Approved Treatment of Drosses and Other Aluminum Wastes](#)

J. Philip McMahan

MFS Metallurgical Inc.

(1992)

[Dross Reclamation Technology Improves Recovery Rates and Eliminates Landfilling](#)

Richard D. Lindsay

Plasma Processing Corporation

(1992)

[Advances in Aluminum Melting and Heating Through Recent Improvements in Gas Technology](#)

John W. Bjerklie

Consolidated Natural Gas

Sergio Buccilli

Student, University of Rochester

HEAT TREATMENT AND QUALITY CONTROL

(1992)

[User Experience with Fluidized-Bed Nitriding and Nitrocarburizing of Extrusion Dies](#)

Ricardo Gonzalez

Cuprum Aluminio, Mexico

(1992)

[Failure in Extrusion Tooling, Causes and Methods of Avoiding Failures](#)

Wilfried A. Kortmann

Schmidt & Clemens GmbH & Co.

Edelstahwerk Kaiserau

(1992)

[The Evaluation of Some Surface Treatments for Aluminum Extrusion Dies](#)

Alison B. Mew and David M.M. Guyoncourt

BNF-FULMER, England

(1992)

[Statistical Process Control in the Extrusion Die Manufacturing Process](#)

Bob Wilson

Nova Tool & Die

HEAT TREATMENT AND OPERATING PRACTICES

(1992)

[A New Precipitation Hardening Steel for Aluminum Extrusion Dies](#)

Lennart Jonson, Lars-Åke Norström, and Odd Sandberg

Uddeholm Tooling AB, Hagfors, Sweden

(1992)

[Billet, Die and Container Lubricants](#)

James E. Dyla

Canton Lubricants Company

(1992)

[Economics of Nitreg Process Use in Nitriding of Aluminum Extrusion Dies](#)

Andrzej Czelusniak and Michel J. Korwin

Nitrex Metal Inc.

Yves Robert

Almex Aluminum Inc.

(1992)

[Plasma Nitriding, An Alternative Nitriding Method for Aluminum Extrusion Dies](#)

David Pye

Seco/Warwick Corporation

MODELING

(1992)

[Application of Numerical Simulations in Design of Extrusion Dies](#)

John Herberg, Kari Gundesø and Inge Skauvik

Hydro Aluminum a.s., Norway

(1992)

[System to Calculate Chambers and Feeds to Obtain a Minimum Single Bearing](#)

Primitivo Rodriguez

INALSA, Spain

Archie Rodriguez

Mass Global Inc., Miami

(1992)

[Bearing Length Calculation by Control of Metal Flow Pressure](#)

Jean-Pierre Hardouin

Hydro Aluminum Extrusion Services

(1992)

[Development of a "Coupled" System for the Design of Extrusion Dies and Processes](#)

Jay S. Gunaserkera Moss

Department of Mechanical Engineering, Ohio University

Dr. Yean-Jenq Huang

Youngstown State University

DIE TECHNOLOGY AND METAL CONTROL

(1992)

[Dead Metal Zones in Extrusion of Complex Shapes](#)

W.Z. Misiolek

Materials Engineering Department, Rensselaer Polytechnic Institute

R.M. Kelly

R.D. Werner Co., Inc.

(1992)

[Extrusion Welds - Quality Aspects Are Now Center Stage](#)

Rudolf Akeret

Alusuisse-Lonza Services Ltd.

(1992)

[Metal Flow in Direct, Indirect and Porthole Die Extrusion](#)

Henry Valberg and Roy Atle Groenseth
The University of Trondheim, Norway

(1992)

[Metal Flow During the Extrusion Process](#)

Chris Devadas and Olaf Celliers
Comalco Research Centre

DIE DESIGN

(1992)

[Design and Correction of Hollow Dies in Europe](#)

Luigi Ingraldi, Vincenzo Giacomelli and Mario Pedersoli
Compes S.p.A., Italy

(1992)

[Extrusion Die Design](#)

Pedro Tadeu Fontuora Machado
Aluminum Extrusion Consultant

(1992)

[The Application of CAD/CAM to Extrusion Die Design](#)

C.O. Stockdale
COSCAED, Inc.

(1992)

[CAD/CAM Systems for Extrusion Dies](#)

M.Y. Shridhara
Precision Dies and Tools Manufacturing Co., United Arab Emirates

MARKETING

(1992)

[A Vision of the Key Process in Our Extrusion Industry](#)[CA Contribution to Promote Discussion](#)

Mats Jonson
ProfilGruppen AB, Sweden

- (1992)
Indian Aluminium Extrusion Industry Opportunities and Prospects
Shiram C. Chokhari
Aluminium Industries Ltd.
- (1992)
The Structural Aspects of the Italian Extrusion Market The Associative Experience of AL-FIN
Maria Conserva
AL-FIN S.p.A., Italy
- (1992)
Showcasing a Commitment to Excellence Through The Aluminum Association's International Aluminum Extrusion Design Competitions
Terry J. White
T & S White Advertising & Public Relations
- (1992)
An Analysis of Cost Reduction Possibilities Through the Use of Electrotechnologies at a Typical Aluminum Extrusion Plant
Joseph E. Goodwill
Carnegie Mellon University
- (1992)
Six Sigma Safety Effort in a Restructured, Decentralized Aluminum Company
Chris Laszcz-Davis
Kaiser Aluminum and Chemical Corporation
- (1992)
Extrusion of Particulate-Reinforced Aluminum-Based Metal Matrix Composites
William Dixon
Duralcan USA
- (1992)
A Primer on Thermal Barrier Aluminum Technologies: Its History and Its Benefits
James M. Dunstan
Azon USA Inc.

TOTAL QUALITY MANAGEMENT

- (1992)
[Applications of Statistical Process Control and Continuous Improvement Philosophy in an Extrusion Plant](#)
W.C. Boatman
Reynolds Metals Company
- (1992)
[Practical Application of Statistical Process Control in the Aluminum Cast Shop](#)
Daniel B. Rogers
- (1992)
[Manufacturing Excellence in Extrusion](#)
Fritz Thurnheer
Hydro Aluminium Extrusion Group
- (1992)
[Total Quality Management in the Tight Tolerance Aluminum Extrusion Process](#)
Russ Calo and Steve Krame
Westinghouse Electric Corporation
John Karnauff
University of Virginia
- (1992)
[SARA Title III or the "Emergency Planning Right-to-Know Act of 1986"](#)
Virgil Zipperer
Novamax Technologies, Georgia
- (1992)
[Aluminium Standards and Data in Electronic Form](#)
Peter Pollak
The Aluminum Association, Inc.
- (1992)
[The Philosophy Behind Management Control Systems and the Achievement of an Extrusion Management Control System](#)
A.D. Steadman
Poseidon Systems Ltd., U.K.

(1992)

[The Implementation of Statistical Process Control](#)

Matthew J. Schwarz

Wells Auminum Corporation

PRODUCT QUALITY

(1992)

[Aluminum Lamp Posts: Corrosion Problems and Solutions](#)

Ali Mohamed Al Abbasi and Srimay Basu

Bahrain Aluminum Extrusion Company (BALEXO)

(1992)

[FMEA - Failure Mode and Effects Analysis for Extruding Shapes for Decorative Applications](#)

Dieter Brungs

Honsel-Werke AG

(1992)

[Product Liability Loss Prevention in the Small Extrusion Plant](#)

John A. Lullo

Kaiser Aluminum

(1992)

[Effect of Surface Defects in Light Press Aluminum Extrusions on Aerospace Manufacturing](#)

Eric Sorenson

Boeing Commercial Aircraft Group

HEALTH AND SAFETY ENVIRONMENT

(1992)

[Leachate Analysis of Aluminum Dross Resulting from Sulfur Hexafluoride Gas Fluxing](#)

Robert A. Schulz

AGA Innovation

James S. Pompos

AGA Gas, Inc.

(1992)

[The Packaging of Aluminum Extrusions](#)

A.F. Castle

Service Extrusion Consultants

(1992)

[Asset Dynamics: The Appraisal, Purchase and Sale of Second-Hand Machinery for the Aluminum Industry](#)

Christopher "Kip" Cole
CBC Group, Inc.

(1992)

[Aluminum and HealthCA Review of the Issues](#)

Seymour G. Epstein
The Aluminum Association, Inc.

TEMPERATURE TECHNOLOGY

(1992)

[Multispectral Radiation Method for Temperature Measurement of Aluminum Alloys](#)

G.J. Dail
Aluminum Company of America
M.A. Pellerin and D.P. DeWitt
Purdue University

(1992)

[MultiWavelength Radiometry for Aluminum Surface Temperature Measurement](#)

W.R. Barron
Williamson Corporation

(1992)

[Automatic Extruded Aluminum Temperature Monitoring](#)

H. Maru and S. Yamashita
Nippon Mining Co. Ltd.
John J. Cardarelli
Williamson Corporation

(1992)

[Aluminum Temperature Measurement Using Dual Spectral Infrared Thermometry](#)

Peter John Kirby
Land Infrared Inc.

FINISHING AND FABRICATION

- (1992)
[Automated Chemical Process Control in Aluminum Finishing](#)
Drew Johnston
Walgren Company
- (1992)
[Designing with Curved Extrusions](#)
W.E. Späth
Späth GmbH & Co., KG.
- (1992)
[Development in High Performance, High Durability Powder Coatings for Aluminum Building Profiles](#)
Dr. Richard J. Higgins
Courtaulds Coatings (Holdings) Ltd., England
- (1992)
[Cold Pressure Welding: A Process for Joining Aluminum Extrusions](#)
Franz J. Reinken
Honsel Werke AG, Germany

TEMPERATURE TECHNOLOGY

- (1992)
[Two-Step Electrolytic Coloring](#)
Mores Basaly
Novamax Technologies Inc.
- (1992)
[Remote Equipment Support Via Telephone Modem: Extruders Tap into their Supplier's Expertise](#)
David R. Jenista
Granco-Clark, Inc.
- (1992)
[Fluoropolymer Finishes for Architectural Aluminum](#)
Richard L. Stoneberg
PPG Industries, Inc.

(1992)
[Performance of Liquid and Powder Architectural Castings and Their Related Environmental Concerns](#)
Jack Allen, Steve Kiefer, and Victor T. Scaricamazza
Morton International, Inc.

EXTRUSION-6000

(1992)
[The Metallurgical Background to Problems Occurring During the Extrusion of 6XXX Alloys](#)
N.C. Parson, J.D. Hankin, and A.J. Bryant
Alcan International Limited

(1992)
[Selection of 6xxx Alloys Based on Extrudability, Properties and Final Usage](#)
Ivo Musulin
Comalco Research Centre
Dennis Dietz
Comalco Extrusions Australia

(1992)
[Helping the Customer](#)
T. Ramanan
Alcan Aluminum Corporation

(1992)
[Physical Metallurgy and Extrusion of 6063 Alloy](#)
Arvid N. Anderson
Aluminum Company of America

(1992)
[Microstructural Optimisation for Extrusion of 6063 Alloys](#)
R.A. Ricks, N.C. Parson, H.L. Yiu and S.A. Court
Alcan International Limited, England

(1992)
[The Influence of Small Mn Additions and Heat Treatment Practice on the Extrudability of AA 6005 Aluminum Alloy](#)
Lars-Otto Gullman, Stanislaw Zajac, and Anders Johansson
Swedish Institute for Metal Research

(1992)

Material Flow and Microstructural Development During Extrusion of AA6063

Dr. M.P. Clode

King's College, London

(1992)

Structural Profiles of 6000 Alloys Used in the Transport Industry: Properties and Production Cycles

M. Buratti and M. Sarracino

ALURES-ISML Novara

AUTOMATED PLANTS

(1992)

Extruding with 1990's Technology

Jack Gordon and Al Bartley

Purpose Extruded Aluminum, Inc.

(1992)

Automated Materials Handling in an Extrusion Plant

V. Bygrave, H. Becker, and K. Forester

Hydro Aluminum

(1992)

Automatic Handling Systems and New Equipment for Heavy-Duty Extruding

J.A. Edwards

Edwards of Enfield Ltd.

(1992)

Automation of a 5000-Ton Press

Dale A. Chambers, P.E.

Reynolds Metals Company

(1992)

Computer Simulation of Extrusion Press Operation Experience with CADEX, A New Computer Aided Process Optimizing System

Amit K. Biswas, Berthold Reppen and Alfred Steinmetz

SMS Hasenclever GmbH, Germany

(1992)

[A Modern Extrusion Plant Designed for a Wide Range of Production in Small Quantity Lots](#)

Seizo Washizuka, Norio Futakuchi, and Hitoshi Mukaiyama
Toyama Light Metal Industry Co., Ltd.

(1992)

[What is Really New on our New Press Line?](#)

Tore Fredrikson
SAPA GmbH

(1992)

[Intelligent Extrusion Process Controller: An Expert System Based Solution to Extrusion Plant Management](#)

Shrikant C. Raval
Intelligent Control Systems, Inc.

EXTRUSION PRACTICES

(1992)

[Controlling Aluminum Billet Preheat Temperature](#)

Thomas F. Larrick
Williamson Corporation
S. Yamashita
Nippon Mining Co. Ltd., Optonic Division

(1992)

[Temperature Control in Aluminum Extrusion](#)

Dr. A.F. Castle
Service Extrusion Consultants

(1992)

[Simulated Isothermal Extrusion](#)

James Kelly and Frank Kelly
Frank Kelly Systems

(1992)

[Extrusion Conditions and Metal Flow to Minimize Both Distortion and Variance of Cross Sectional Shape](#)

Yasushi Tashiro, Hideyo Yamasaki, and Noboru Ohneda
Showa Aluminium Corporation, Japan
Kenji Nakanishi
Kagoshima University, Japan

EXTRUSION PRACTICES AND EQUIPMENT

(1992)

[Aluminum ExtrusionCThe Other Way](#)

Peter Jones, Nigel Fuller, and Ed Buttress
Aluminum Shapes Ltd.

(1992)

[Extruded Properties of Metal Matrix Composites](#)

Malcom J. Couper and Michael J. Lee
Comalco Research Centre
Thomas G. Haynes III
California Consolidated Technology Inc.
Derek Greliche
Comalco Extrusions

(1992)

[Quality of Surface Layer of Extrusion by Indirect Extrusion](#)

T. Aiura and O. Takezoe
Kobe Steel Ltd.

(1992)

[Isothermal Extrusion Principles and Effect on Extrusion Speed](#)

Ivar Venås, John Herberg, and Inge Shauvik
Hydro Aluminium, Norway

EQUIPMENT

(1992)

[Recent Development in Aluminum Extrusion Presses](#)

Junzo Shibamoto and Mitsuo Ohno
MITSUI Engineering & Shipbuilding Co., Ltd.

(1992)

[A New Radical Radiant Extrusion Billet Heating Device](#)

H.W. Long

Non Ferrous Metal Technology

(1992)

[Automatic Extrusion Line with "Revolver" Press](#)

Eros Petris

Danieli & C. S.p.A.

(1992)

[Induction Billet Heaters with Hot Log Shears and Integrated Shock Heating System and Self-contained Induction Shock Heaters](#)

W. Johnen

Otto Junker

(1992)

[Modifications to the Extrusion Press and Handling System for Increased Reliability and Productivity](#)

Franco Gramaticopolo and Al Kennedy

OMAV

(1992)

[Extrusion Press with Moveable Ram Stem](#)

Domenico Bertoli and Annibale Mensi

OMAV S.p.A.

(1992)

[The Ultimate Extrusion Press Control System](#)

Frank Kelly

Frank Kelly Systems

(1992)

[The "Double Puller" Offers Three Major Advantages](#)

Charles B. Gentry

Granco Clark, Inc.

(1992)

[Ube Technical Features for Large Capacity Extrusion Presses](#)

H. Maeda, Chief Design Engineer

UBE Industries, Ltd.

(1992)

[Power and Control for the Modern Extrusion Press](#)

Jack Hayes

The Oilgear Company

(1992)

[Intelligent Hydraulic Expert for Extrusion Plants](#)
[CA Expert System for Extrusion Plant Hydraulic Systems Management](#)

Shrikant C. Raval

Intelligent Control Systems, Inc.

(1992)

[Improvements in Specialized Drawing and Processing Machinery](#)

Rudolf Bültmann

Bültmann KG

(1992)

[Condition Monitoring of Extrusion Presses](#)

S.M. Hoh

Poseidon Systems Ltd.

(1992)

[The Latest Control Technologies and Your Extrusion Plant](#)

Scott Ziegenfuss and Paul C. Stavrou

Rexroth Corporation

(1992)

[The Elimination of the De-Gas Cycle on Extrusion Presses](#)

Michael James Newman

Indalex Aluminum Ltd.

(1992)

[Upgrading Older Presses, What to Expect, What to Watch Out For!](#)

Jeffrey P. Dziki

Pollock Engineering Group

EXTRUSION TECHNOLOGY MODELING

(1992)
[Heat Transfer Model for Temperature Profile of Extruded Sections at the Extrusion Press Exit](#)
Van Hue Pham
Comalco Extrusions Australia

(1992)
[High Velocity Extrusion of Thin-Walled Aluminum Sections](#)
Sigurd Støren and Geir Grasmo
The Norwegian Institute of Technology

(1992)
[Numerical Modeling of Metal Extrusion Using Phoenics With Viscosity Varying in the Deformation Zone](#)
P.J. Richards and D. Bhattacharyya
University of Auckland

(1992)
[Modeling of Two Dimensional Extrusion](#)
G. Grasmo, K. Holthe, S. Støren and H. Valberg
The Norwegian Institute of Technology
R. Flatval, L. Hanssen, M. Lefstad, O. Lohne, T. Welo, and R. Ørsund
SINTEF, Light Metals Centre, Norway
J. Herberg
Hydro Aluminium, Norway

(1992)
[Physical Modeling of Microstructure Response in Aluminum Extrusion](#)
T.J. King, H.K. McGregor, W.Z. Misiolek, and R.N. Wright
Rensselaer Polytechnic Institute

(1992)
[Modeling of Temperature-Speed Parameters in Aluminum Extrusion](#)
J. Zasadzinski, W. Libura, and Jay Richert
Institute for Metal Forming and Physical Metallurgy
W.Z. Misiolek
Rensselaer Polytechnic Institute

(1992)
[Modeling of Precipitate Growth and Dissolution in Al-Mg-Si Alloys: Application to Processing of Extrusion Billets](#)

John A. Wert
Department of Materials Science, University of Virginia

(1992)
[Working of Metals by Simple Shear Deformation Process](#)

Vladimir M. Segal
Interstate Forging Industries, Inc.

ALTERNATE PROCESSES AND PROCEDURES

(1992)
[Extrusion of Bimetallic and Clad Tubes in Unequal Strength Alloys](#)

Melis S. Gildengorn
All-Union Institute of Light Alloys, Moscow

(1992)
[New Development in Conform Technology for Continuous Extrusion](#)

Martin Bridgewater and Brian Maddock
Holton Machinery Ltd.

(1992)
[Development Trends in Aluminum Alloy Extrusion Technology in the USSR](#)

Mikhail Z. Lokshin and Mikhail V. Kharitanovich
All-Union Institute of Light Alloys, Moscow

(1992)
[The Development of Microstructure and the Consolidation of RSP Aluminium Alloys in Conform Extrusion](#)

Dr. M.P. Clode
School of Physical Sciences and Engineering
King's College, London

METALLURGY

(1992)
[The Development of a Medium Strength Alloy Based on Aluminum-Lithium System](#)

S. Kumar, S. Ozbiten, T. Sheppard, and H.B. McShane
Imperial College of Science and Technology, London

- (1992)
[Increase in Extrusion Speed and Effects on Hot Cracks and Metallurgical Structure of Hard Aluminum Extrusions](#)
Hirokazu Yamaguchi
Furukawa Aluminium Company
- (1992)
[Extruded Aluminum Alloys Produced from the Powder Phase](#)
R. Dashwood and T. Sheppard
Imperial College of Science Technology and Medicine
- (1992)
[Tribomechanical Process on the Die Land Area During Extrusion of AA6063 Alloy](#)
Widia W. Thedja, Klaus B. Müller, and Dietrich Ruppin
Forshungszentrum Strangpressen
(Extension Research Center) Technische Universität Berlin
- (1992)
[Some Investigations on the Metal Flow During Extrusion of Al Alloys](#)
Wolf-Dieter Finkelnburg and Günther Scharf
Vereinigte Aluminium-Werke, FRG
- (1992)
[The Strain Gradient Effect on Microstructure and Properties of Extruded Aluminum Alloys](#)
Wojciech Libura and Jozef Zasadzinski
Academy of Mining and Metallurgy, Kraków
- (1992)
[Effect of Aluminium Alloy Ingot Structure on Extrudability](#)
B.I. Bondarev, V.G. Davydov, and V.V. Zakharov
All-Union Institute of Light Alloys, Moscow
- (1992)
[Flow of the Billet Surface in Aluminium Extrusion](#)
Martin Lefstad
SINTEF - Production Engineering, Norway
Oddvin Reiso
Hydro Aluminium, Norway
Vidar Johnsen
Elkem Aluminium, Norway

(1992)

[Microstructural Effects of Strontium on Cast 6000 Series Aluminum Alloys](#)

Francisco C. Dimayuga

Timminco Metals

Hasim Mulazimoglu and John E. Gruzleski

McGill University

Bernard Closset

Timminco S.A.

(1992)

[Formation of the Outer Surface Layers of the Profile in Direct and Indirect Extrusion](#)

Henry Valberg and Thorbjørn Loeken

(1992)

[High Silicon Alloy Extrusion](#)

Olaf C. Celliers, Ivo Musulin, and Scott J. Rogers

Comalco Research Centre

(1992)

[Effect of Process Parameters on the Properties of AlZnMg Alloy Extruded Hollow Shapes](#)

Igor Duplancic

University of Split, Yugoslavia

Jere Prgin

Menziken, Switzerland

EQUIPMENT

(1992)

[Process Benefits from the Modern Furnace/Log Shear](#)

John C. Bugai

Granco-Clark, Inc.

(1992)

[Optimal Log Length Calculation](#)

Ronald S. Reagan

University of Southern Mississippi

(1992)

[Proper Handling of Hydraulic Oil in the Extrusion Process](#)

Roger Lee Ferryman

Reynolds Metals Company

(1992)

[Aluminium Alloy Extrusion Process at Stable Deformation-Area Temperature with Intensive Cooling of Tools](#)

Leszek Gablankoski, Juliusz Senderski, and Jan Kialka

Institute of Non-Ferrous Metals - GLIWICE

Marek Janik

Czechowice Dziedzice

(1992)

[Extrusion Technology of AlMgSi Alloys](#)

Svetozar Blečić

Faculty of Metallurgy

Wojciech Libura and Józef Zasadzinski

Academy of Mining and Metallurgy

Zelimir Cerović

Alumine Combinat

(1992)

[Simultaneous Plastic Deformation of Composite Materials Containing Aluminum by Extrusion](#)

Romana Sliwa

Technical University, Poland

Jozef Zasadzinski

Academy of Mining and Metallurgy, Poland

[1992 Glossary](#)