Cost Research At PRICE

Making Technology an Issue

Presented BY

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PRICE

Knowledge Base Challenge

- Manufacturing Complexity Electronic (MCPLXE)
- Integration and Test (INTEGE / INTEGS)
- Specification and Detail (PLTFM)
- PRICE HL Major Update
- PRICE M Major Update
- Machinability Index
- Fiber Optic

Custom Tables in PRICE Suite 99

- Clients will have the ability to create custom tables viewable from the Models
- PRICE Systems will supply results of cost research in new table format in PES 99
- Incremental results will be available on the Web

Specific Case Study

- Machinability Index
  - Knowledge Base Parameters
  - Material Classes
  - Manufacturing Process
  - Calibration
- Fiber Optics
  - Commercial
  - Mil - Specification

Machinability Research Knowledge Base Parameters

- Material
- Specification
- UNS Number
- Hardness - Rockwell
- Hardness - Battelle
- Product Form
- Condition
- Machining Process
  - Turned
  - Milled
  - Welded

Study Material Classes

- Age Hardened Stainless Steel
- Austenitic Stainless Steels
- Stainless Steels - Cast
- Iron-Base Super Alloys
- Aluminum Alloys - Wrought
- Aluminum Alloys - Cast
- Cobalt Alloys
- Magnesium Alloys - Cast
- Nickel Alloys
- Titanium Alloys
- Exotic Alloys

Data Collection

- Process Definition - Machining
  - Turned - 2” Dia. 1 Ft. Long, 1 Standard Pass (Bar, Forging
  - Milled - 1 Ft. Sq. 2” Thick, 1 Standard Pass (Plate, Forging)
  - Welded - 1 Ft. Long 2” Thick, 1 Standard Pass (Plate)
- Ground Rules and Process Descriptors
  - Cost of Labor & Raw Material
  - Description of Material Alloy - Length, Bar, Plate
  - Number of Standard Passes - Critical

Normalizing Data

- Platform - Commercial, Ground Based
- Production Lot Size - 100
- Calibration Type - AUCOST
- Learning Curve
  - Labor - 100%
  - Material 100%
- Material Index - 99
- Schedule - Unconstrained
- Rates and Factors - 1998 Model Defaults

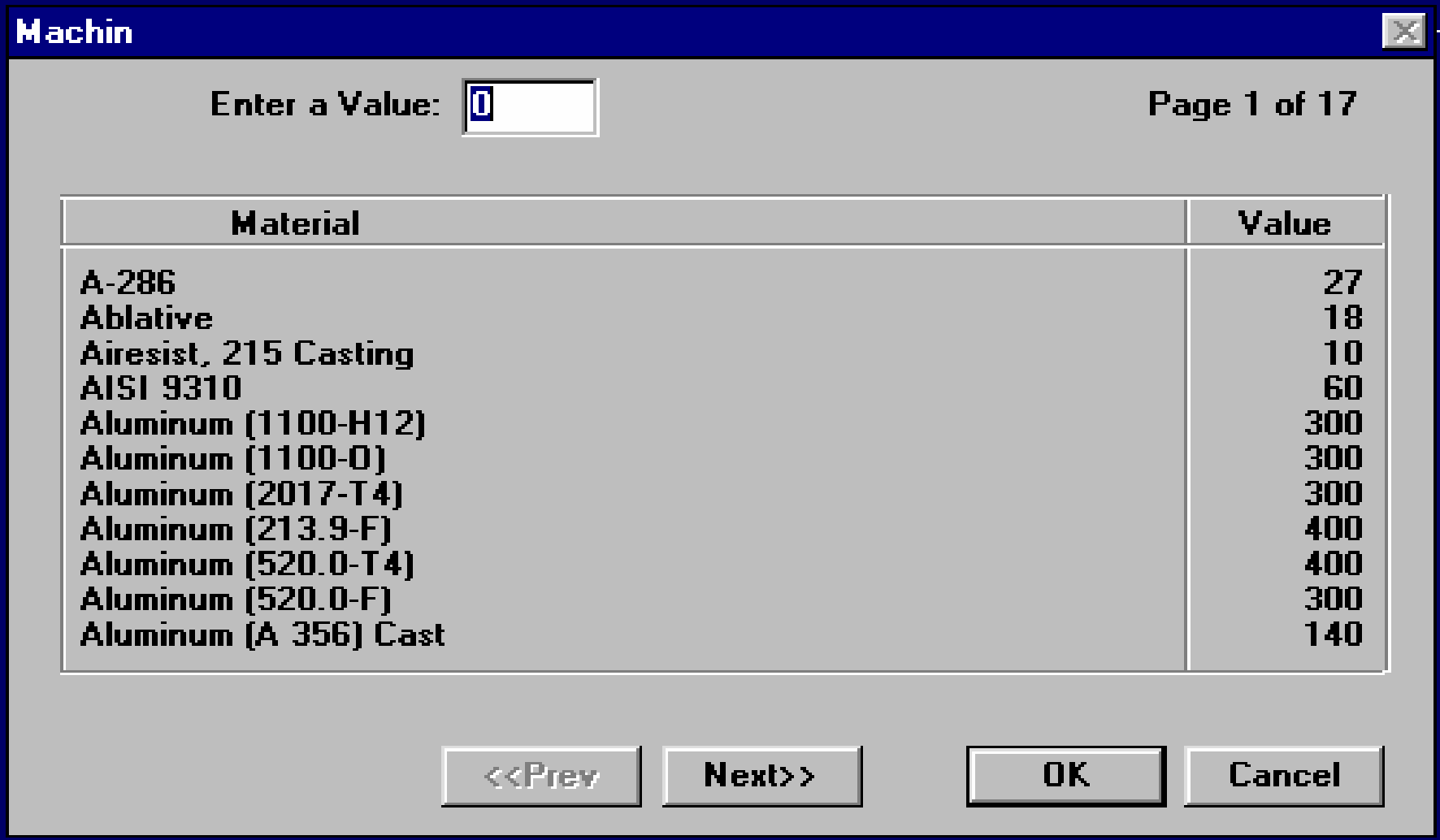
Material Class Weights By Manufacturing Process Descriptors

Material Class	Turned	Milled	Welded
Age Hardened Stainless Steels	11	82	82
Austenitic Stainless Steels	11	82	82
Stainless Steels – Case	11	82	82
Iron- Bas Superalloys	11	82	82
Aluminum Alloys – Wrought	4	29	29
Aluminum Alloys – Cast	4	29	29
Cobalt Alloys	13	95	95
Magnesium Alloys – Cast	2.7	19.8	19.8
Nickel Alloys	13	95	95
Titanium Alloys	6.5	49	49
Exotic Alloys	13	95	95

Calibration & Results

- 240 Material & Process Types Were Prepared
- Material Labor Process
  - Turned
  - Milled
  - Welded
- Added The Raw Material Cost
- Results = AUCOST
- Excel Interface Used For Analysis

Expanded “MACHIN” Tables



Conclusion - Machinability Index

- The materials knowledge base research serves to provide the PRICE user community new technology factors and process indicators.
- The PRICE Enterprise interface allowed the rapid transfer of data into and out of the PRICE-H Model.
- Future research will concentrate on analyzing the impact of the Material Index directly on the MCPLXS values.

"A global revolution is in process. Our method of handling information is changing from electrons and electronics to light beams and photonics. These changes are occurring more rapidly than at any time in the history of telecommunications." Donald B. Check, Director Opt-Electronics Research, Corning Incorpated.

Fiber Optic Research Knowledge Base Parameters

- Fiber Optic Cables
- Fiber Optic Connectors
- Fiber Optic Racks/Mounts
- Fiber Optics Test Equipment

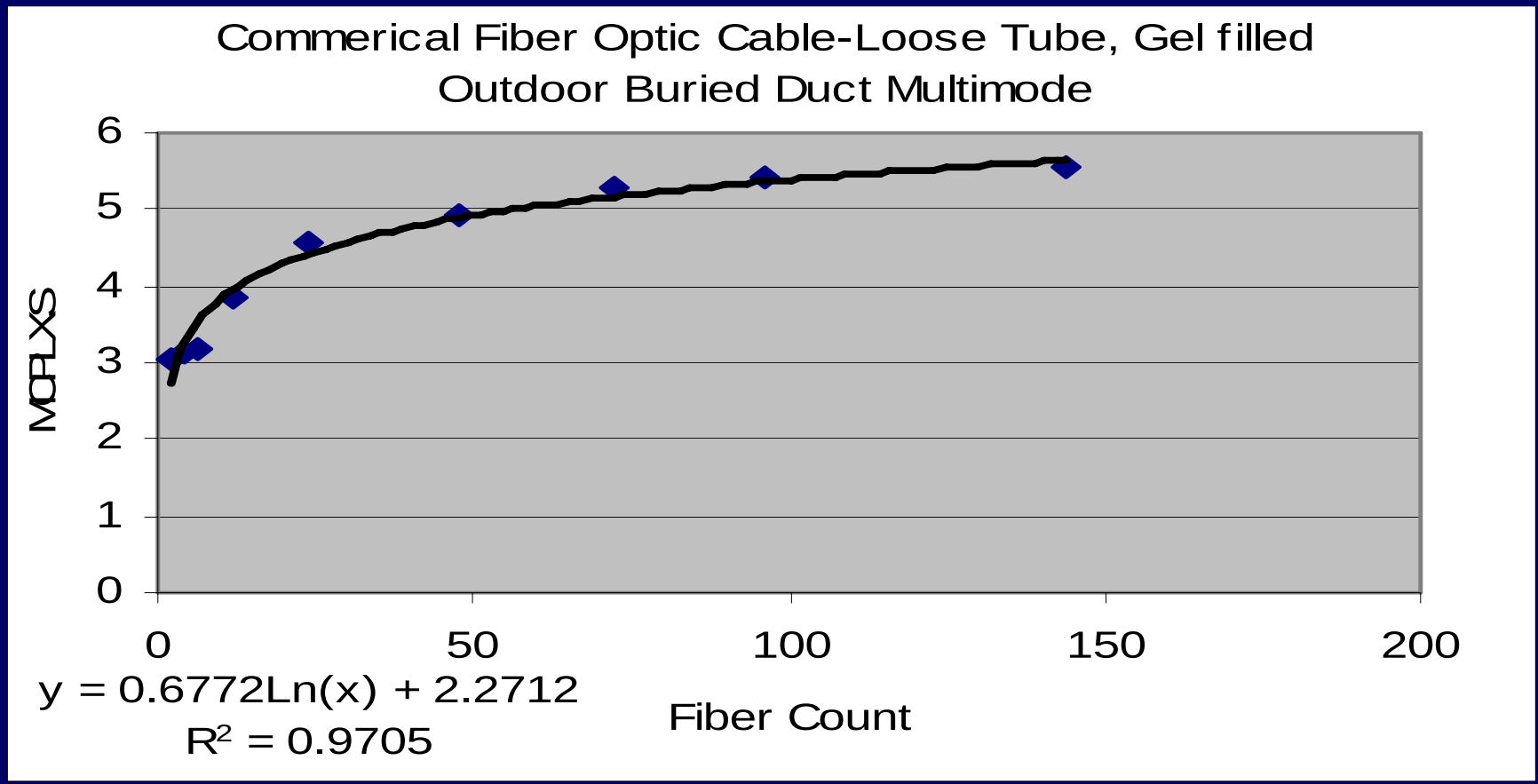
Research Continues to Expand

- Tactical Fiber Optics Deployment Systems
- Mil-Spec Cylindrical Fiber Optic Cables
- Application Specific Areas - Naval Shipboard, Satellite
- Other Area as Suggested

Cost / Complexity Relationship

Environment	• Riser/Plenum • Outdoor Aerial/Buried
Cable Type	• Interconnect • Breakout • Tight Buffered, Non-Breakout Style, • Loose Tube, Gel Filled
Fiber Count	Denotes the number of fibers in a cable. Drives cost and complexity.
Technology (Bandwidth)	• Single-Mode • Multimode

Fiber Optic Regression Analysis



Conclusion - Fiber Optic

- Fourteen trend line equations portray the fiber optic cable relationship. The majority of these equations showed a high correlated relationship between fiber count and MCPLXS.
- The results of this research will provide a rich database in which to find specific cable MCPLXS factors as well as trend-line equations to develop new fiber optic cable applications.
- As the technology revolution continues to change our world PRICE Systems is committed to maintaining and updating the PRICE Model to include the latest technological trends.

Our Commitment

As technology continues to evolve and change, PRICE Systems is committed to providing our clients with the highest degree of technical support to stay current. PRICE Systems will continue to expand this research and will make the results available to our registered clients in future upgrades.

DATA Wanted

Continuing Trends in Technology

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