GEORGIA INSTITUTE OF TECHNOLOGY
Engineering Experiment Station

PROJECT INITIATION

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Project No.: A-1452
Project Director: George D. Woodard, Jr.
Sponsor: Atlantic Building Systems, Inc.
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Assigned to Industrial Development Division

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SPONSOR: Atlantic Building Systems Inc.

TERMINATION EFFECTIVE: October 15, 1972

CHARGES SHOULD CLEAR ACCOUNTING BY: All charges have cleared

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THE MARKET FOR WELDED STEEL TUBING
IN ELEVEN SOUTHERN STATES

By

Harvey Diamond

Industrial Development Division
ENGINEERING EXPERIMENT STATION
Georgia Institute of Technology

September 1972
THE MARKET FOR WELDED STEEL TUBING IN ELEVEN SOUTHERN STATES

Purpose and Procedure

As large segments of the U. S. metalworking industries "go southern;" the changes in regional demand for specific steel products become of great interest and importance to local metal fabricators and suppliers. One of these products, welded steel tubing, is the prime consideration of this report. The purpose of the study is to quantify, by state, the market potential for welded steel tubing in a selected southern area and to determine which shapes and size ranges (up to 5" O.D.) are most called for and ordered by tube purchasers in the Southeast.

The study area, delineated on Map 1, includes the present sales area of the project sponsor, Atlantic Building Systems, Inc., plus bordering states within practical shipping distances from its production facilities.

A survey questionnaire pertaining to welded steel tubing purchase requirements was mailed to manufacturing companies believed to be consumers of steel tubing in the eleven-state area. (See Appendix 1.) Requested information included annual tonnage purchased, grade of steel, shape and size, source of purchase, and mode of delivery.

The mailing list for the survey was prepared and furnished by the sponsor and was composed entirely of companies in the metal industries (SIC 25 and 33-39) and metal distributors (SIC 5091). The recipient firms were chosen without regard for size or worth, with plant employment ranging between two and 5,000 persons. Questionnaires were sent to 1,396 potential consumers of welded steel tubing.

Findings

The 408 questionnaire responses represented more than 29% of the entire mail-out. Individual state returns varied in number from 9 from Mississippi to 74 from North Carolina and in percentage response from 17% for Alabama to 40% for Virginia.

Volumes of welded steel tubing purchased annually by replying companies ranged in tonnage from nil to 4,000 tons. In order to cull small volumes used primarily for in-house consumption, only firms which reported purchasing 20 tons or more of welded steel tubing annually were considered for collation and analysis. This group consisted of 204 manufacturing plants. (See Map 2 for state location and Appendix 2 for identification.)
Map 1

STUDY MARKET AREA FOR WELDED STEEL TUBING

UNITED STATES

0 100 200 300 MILES
Map 2

NUMBER OF PLANTS PURCHASING WELDED STEEL TUBING
IN THE SOUTHERN STUDY AREA
The total volume of welded steel tubing purchased yearly by the 204 companies was 56,400 tons.

Hot rolled steel is the most popular grade steel tubing handled by fabricators and distributors in the study area. Questionnaire returns from participating companies show the following:

- Hot rolled: 174 (85%)
- Cold rolled: 72 (35%)
- Galvanized: 23 (11%)
- Others (e.g. stainless, alloy): 11 (5%)

Responses to the survey indicate strongly that the purchasing source for steel tubing is dependent on annual volume requirements. Only three of the 51 companies which rely only upon wholesale distribution consume more than 100 tons per year. Purchases by source for all 204 firms are fairly even with mill 53, metal service center 51, and both mill and service center 100.

Trucks are the type carriers most frequently used for steel tubing transportation in the South. Returns reveal that 94 companies order in truckloads, 5 in carloads, 41 in both truckloads and carloads, and 64 in less-than-carload.

The 204 companies acknowledging purchases of welded steel tubing constitute 14.6% of the total survey listing and are located throughout the eleven-state study area. Table 1 gives percentages of questionnaire response and annual purchased volumes by state.

<table>
<thead>
<tr>
<th>State</th>
<th>Number of Survey Recipients</th>
<th>Welded Steel Tubing Buyers No.</th>
<th>Purchased Volume (in tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>146</td>
<td>13</td>
<td>2,335</td>
</tr>
<tr>
<td>Arkansas</td>
<td>63</td>
<td>13</td>
<td>3,230</td>
</tr>
<tr>
<td>Florida</td>
<td>218</td>
<td>22</td>
<td>10,471</td>
</tr>
<tr>
<td>Georgia</td>
<td>164</td>
<td>31</td>
<td>10,724</td>
</tr>
<tr>
<td>Kentucky</td>
<td>87</td>
<td>14</td>
<td>2,822</td>
</tr>
<tr>
<td>Louisiana</td>
<td>80</td>
<td>8</td>
<td>1,510</td>
</tr>
<tr>
<td>Mississippi</td>
<td>46</td>
<td>4</td>
<td>435</td>
</tr>
<tr>
<td>North Carolina</td>
<td>227</td>
<td>32</td>
<td>4,635</td>
</tr>
<tr>
<td>South Carolina</td>
<td>103</td>
<td>21</td>
<td>6,340</td>
</tr>
<tr>
<td>Tennessee</td>
<td>169</td>
<td>28</td>
<td>12,150</td>
</tr>
<tr>
<td>Virginia</td>
<td>93</td>
<td>18</td>
<td>1,745</td>
</tr>
<tr>
<td>Totals</td>
<td>1,396</td>
<td>204</td>
<td>56,397</td>
</tr>
</tbody>
</table>
Of the companies returning affirmative questionnaires, 52 firms purchase 300 tons or more of welded steel tubing annually. The locations of these plants, 17 of which are metal service centers, are depicted by a buying volume symbol on Map 3.

In addition to information on tonnage, steel grade, source, and transportation mode, the questionnaires requested specific data regarding shape and diameter size of each firm's tubing requirements. Compilation of the returns indicates that of the volumes purchased, 14,926 tons were round and less than 5" O.D., 13,794 tons were square and less than 4" O.D., and 4,215 tons were rectangular and less than 2" x 5" and 3" x 4" O.D. Of the other known sizes, 9,288 tons were reported to be larger than the ranges set forth in the questionnaire. A complete description of the collated size and shape data is given in Table 2.

### Table 2
SHAPE AND SIZE BREAKDOWN OF WELDED STEEL TUBING PURCHASES

<table>
<thead>
<tr>
<th>SHAPE AND SIZE RANGE</th>
<th>WALL GAUGE</th>
<th>TONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Round</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5/16&quot; O.D. - 3/4&quot; O.D.</td>
<td>.020&quot; -.049&quot;</td>
<td>799</td>
</tr>
<tr>
<td>7/8&quot; O.D. - 1 1/4&quot; O.D.</td>
<td>.020&quot; -.049&quot;</td>
<td>4,032</td>
</tr>
<tr>
<td>1 3/8&quot; O.D. - 2&quot; O.D.</td>
<td>.020&quot; -.095&quot;</td>
<td>3,370</td>
</tr>
<tr>
<td>2 1/4&quot; O.D. - 3&quot; O.D.</td>
<td>.028&quot; -.134&quot;</td>
<td>4,826</td>
</tr>
<tr>
<td>3 1/8&quot; O.D. - 4&quot; O.D.</td>
<td>.042&quot; -.165&quot;</td>
<td>1,175</td>
</tr>
<tr>
<td>3 1/8&quot; O.D. - 5&quot; O.D.</td>
<td>.170&quot; -.250&quot;</td>
<td>724</td>
</tr>
<tr>
<td>Square</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/2&quot; - 3/4&quot;</td>
<td>.049&quot; -.065&quot;</td>
<td>662</td>
</tr>
<tr>
<td>1&quot; - 2&quot;</td>
<td>.049&quot; -.120&quot;</td>
<td>6,894</td>
</tr>
<tr>
<td>2 1/8&quot; - 3&quot;</td>
<td>.120&quot; -.188&quot;</td>
<td>2,484</td>
</tr>
<tr>
<td>3&quot; - 4&quot;</td>
<td>.188&quot; -.250&quot;</td>
<td>3,754</td>
</tr>
<tr>
<td>Rectangular</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/2&quot; x 1&quot; - 1 1/2&quot; x 3&quot;</td>
<td>.035&quot; -.120&quot;</td>
<td>812</td>
</tr>
<tr>
<td>2&quot; x 3&quot; - 2&quot; x 4&quot;</td>
<td>.083&quot; -.188&quot;</td>
<td>1,463</td>
</tr>
<tr>
<td>2&quot; x 5&quot; - 3&quot; x 4&quot;</td>
<td>.083&quot; -.250&quot;</td>
<td>1,940</td>
</tr>
<tr>
<td>Other (wall gauge different than above)</td>
<td></td>
<td>2,845</td>
</tr>
<tr>
<td>Other (size greater than 5&quot; O.D.)</td>
<td></td>
<td>9,288</td>
</tr>
<tr>
<td>Unknown</td>
<td></td>
<td>11,329</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>56,397</td>
</tr>
</tbody>
</table>

5
Map 3
LOCATION OF PLANTS PURCHASING LARGE VOLUMES
OF WELDED STEEL TUBING IN THE SOUTH

- 300 tons to 499 tons
- 500 tons to 999 tons
- 1000 tons to 1999 tons
+ 2000 tons and over
Because 39 of the firms participating in the survey operate at least partially on a wholesale distribution level, conceivably some of these tonnages were counted by more than one responding company. Therefore, it would be misleading and unrealistic to use this total as a definitive volume of demand. A more reasonable and valid consumption figure would be obtained by subtracting the tonnage purchased by the metal service centers (16,500 tons) from the total volume reported. This would leave a balance of almost 40,000 tons which can be used as a basis for estimating a total market volume for the study area.

In making a projection of total consumption, it was assumed that the respondent companies were representative of all steel tubing users in the area. The combined employment of all the manufacturing companies on the survey mailing list was considered the upper limit of the projection equation, with other known factors being the total employment for all plants returning questionnaires and the total tonnage consumption of steel tubing by the same responding companies.

Using the above data the annual market for welded steel tubing in the eleven-state study area was estimated to be approximately 125,000 tons, a figure equal to 8% of the total U. S. demand.
Appendix 1

QUESTIONNAIRE

WELDED STEEL TUBING

1. Do you purchase welded steel tubing? Yes ___  No ___

2. Your requirements consist of Hot rolled________  Cold rolled______
                   Galvanized________  Other________

3. Do you purchase your requirements from a mill ( ), a service center ( ),
or both ( )?

4. Do you purchase in truckloads ( ), carloads ( ), both truckload and car-
load quantities ( ), or less-than-truckloads only ( )?

5. Approximately how many tons or feet per year do you purchase? __________

6. Your requirements consist of the following size groups:

<table>
<thead>
<tr>
<th>SHAPE AND SIZE RANGE</th>
<th>WALL GAUGE</th>
<th>% of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Round</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5/16&quot; O.D. - 3/4&quot; O.D.</td>
<td>.020&quot; - .049&quot;</td>
<td></td>
</tr>
<tr>
<td>7/8&quot; O.D. - 1 1/4&quot; O.D.</td>
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<td>.042&quot; - .165&quot;</td>
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</tr>
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<td>3 1/8&quot; O.D. - 5&quot; O.D.</td>
<td>.170&quot; - .250&quot;</td>
<td></td>
</tr>
<tr>
<td>Square</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/2&quot; - 3/4&quot;</td>
<td>.049&quot; - .065&quot;</td>
<td></td>
</tr>
<tr>
<td>1&quot; - 2&quot;</td>
<td>.049&quot; - .120&quot;</td>
<td></td>
</tr>
<tr>
<td>2 1/8&quot; - 3&quot;</td>
<td>.120&quot; - .188&quot;</td>
<td></td>
</tr>
<tr>
<td>3&quot; - 4&quot;</td>
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<td></td>
</tr>
<tr>
<td>Rectangular</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/2&quot; x 1&quot; - 1 1/2&quot; x 3&quot;</td>
<td>.035&quot; - .120&quot;</td>
<td></td>
</tr>
<tr>
<td>2&quot; x 3&quot; - 2&quot; x 4&quot;</td>
<td>.083&quot; - .188&quot;</td>
<td></td>
</tr>
<tr>
<td>2&quot; x 5&quot; - 3&quot; x 4&quot;</td>
<td>.083&quot; - .250&quot;</td>
<td></td>
</tr>
</tbody>
</table>

Other sizes not included in the above size ranges _______% of total

Please list particular sizes not shown in the size range above.
Appendix 2
COMPANIES PURCHASING LARGE VOLUMES OF WELDED STEEL TUBING IN THE SOUTH

ALABAMA
Birmingham
Marc Steel Company, Inc.
Rohn Vulcan, Inc.
Vulcan Trailer Manufacturing Company

Dothan
Hedstrom Company

Elba
Dorsey Trailers, Inc.

Gadsden
Majors Iron Company, Inc.

Montgomery
Alabama Engineering & Supply Company
Burt Boiler Works, Inc.
Sabel Steel Service, Inc.

Pelham
Odom Steel & Sales, Inc.

Stevenson
Stevenson Iron & Steel Company, Inc.

Tuscaloosa
Cain Steel & Supply Company
Tuscaloosa Fabricator & Supply Company

ARKANSAS (con't.)
Little Rock
AMF, Inc.
Bemberg Iron Works
Ceco Corporation
Toll Manufacturing Company, Inc.

Mountain Home
Metal Specialties Company

North Little Rock
Bradbar Manufacturing Corporation

Paragould
Wonder State Manufacturing Company

Searcy
Searcy Steel Company

West Memphis
Delta Steel and Construction Company

FLORIDA
Clearwater
Standard Fabricated Products

Dania
Montgomery Pipe & Tube Company, Inc.

Fort Lauderdale
American Metal Fabricators, Inc.
Jackson Steel Company, Inc.
Port Everglades Steel Corporation

Hialeah
Anvil Metals, Inc.
Lyn-Rand Metal Fabrications

Jacksonville
Fab All Metals
FLORIDA (con't.)

Jacksonville
Owen Steel Company of Florida
Wonderland Products, Inc.

Miami
Dales Welding, Inc.
Davomor Industries
World Iron & Pipe of Florida

Orlando
Caulley Steel & Aluminum Company
Modern Welding Company, Inc.

St. Petersburg
Downing Forge, Inc.
J. W. Appley & Son, Inc.

Tampa
E-Z Way Products, Inc.
Industrial Supply Corporation
O'Neal Steel Inc.
Southern Truck Body Corporation

Winter Haven
Wells Products, Inc.

GEORGIA (con't.)

Chamblee
Trimble House Corporation

Conyers
Clark Manufacturing Company, Inc.

Columbus
Muscogee Iron Works, Inc.

Douglas
Fab Tec Inc.

Dalton
J. M. Feigherty Company, Inc.
Manly Jail Works, Inc.

Gainesville
Gainesville Iron Works, Inc.

Hapeville
Saratoga Conveyor Corporation

Hartwell
L H P Corporation

Macon
Lo Metal Products Company

Marietta
Damar, Inc.

Midville
Cowart Iron Works, Inc.

Norcross
Stevens Steel Supply Company, Inc.

Tifton
Cooksey Iron & Metal Company, Inc.
Locke Manufacturing Company

Tucker
State Ornamental Iron Works

Warrenton
Jebco, Inc.

GEORGIA

Albany
Martin Lewis Steel, Inc.

Arlington
Sunshine Metal Products Company, Inc.

Atlanta
Artistic Ornamental Iron Company
Atlas Ornamental Iron Works
Breman Steel Company, Inc.
Georgia Central Corporation
Georgia Steel Supply Company
Hubbell Metals Inc.
Rosenfeld Steel Company, Inc.
Southern Cross Industries, Inc.

Augusta
Augusta Iron & Steel Works, Inc.
McAlush Steel Products, Inc.
Ornamental Iron Fabricators

Carrollton
Acme Iron & Metal Company, Inc.
KENTUCKY

Allen
R & S Truck Body Company, Inc.

Buckner
Clayton & Lambert Manufacturing Company

Cadiz
Hoover Ball & Bearing Company

Erlanger
Kinnaird Body Works, Inc.

Florence
Litton Industrial Systems, Inc.

Hopkinsville
Sabel Metal Company, Inc.

Louisville
General Electric Company
Kyana Sheet & Iron Corporation
Louisville Ladder Company
Murphy Manufacturing Company
Neiller-La Vielle Supply Company
Queen Products Company, Inc.
Service Erection & Machine Company

Simpsonville
Lear Siegler, Inc.

LOUISIANA

Baton Rouge
Webre Steel Company

Lafayette
Lafayette Steel Service, Inc.

Metairie
W & A Engineers, Inc.

New Orleans
Metal Service Corporation
Standard Steel of New Orleans

LOUISIANA (con't.)

Shreveport
Red River Machine Works, Inc.
Steel Sales & Service, Inc.

Youngsville
Southern Structures, Inc.

MISSISSIPPI

Bay St. Louis
Coast Services, Inc.

Clarksdale
KBH Corporation

Jackson
Rankin Fabricators, Inc.

Winona
Anel Engineering Industries

NORTH CAROLINA

Asheville
Dave Steel Company, Inc.

Charlotte
ABC Machinery Corporation
Jim Myers & Son, Inc.
Pneumafil Corporation

Conover
Timmerman Manufacturing, Inc.

Gastonia
Chavis Textile Manufacturing, Inc.
Colman-Cocker Company
Fiber Controls Corporation
Owen Steel Company of North Carolina
Witten Metal Products Company, Inc.

Greensboro
Debnam & Hughes, Inc.
Edgecomb Steel Company
J. D. Wilkins Company
Williams Steel Company, Inc.
NORTH CAROLINA (con't.)

High Point
Akron Spool & Manufacturing Company

Lincolnton
Cronland Warp Roll, Inc.

Lexington
Proctor & Schwartz, Inc.

Marion
Combustion Engineering, Inc.

Matthews
Davis Steel & Iron Company

Monroe
McCoy-Ellison, Inc.
ORO Manufacturing Company

Rocky Mount
Williams Manufacturing Company, Inc.

Salisbury
Colonial Steel Corporation

Sanford
Bracken Steel Company, Inc.

Southern Pines
Trimble Products, Inc.

Stanley
Gaston County Dyeing Machine Company

Statesville
Thonet Industries, Inc.

Washington
J. A. Hackney & Sons, Inc.

Weldon
Howell Steel Service, Inc.

Wilmington
Queensboro Steel Corporation

NORTH CAROLINA (con't.)

Winston-Salem
Carolina Steel Corporation
RJR Archer Inc.

SOUTH CAROLINA

Anderson
Singer Company
Traco Steel Inc.

Cayce
Owen Miscellaneous Metals, Inc.

Columbia
Browning Engineering Manufacturing
Owen Steel Company, Inc.

Florence
Aluminum Ladder Company, Inc.
Southeastern Steel Company

Greenville
Edgcomb Steel Company
Greenville Steel & Foundry Company
J. M. Tull Industries, Inc.
Metal Products Corporation
Rodrigue Manufacturing Company, Inc.
South Carolina Steel Corporation
Steel Heddle Manufacturing Company

Greer
Southern Machinery Company

Hardeeville
B & L Manufacturing Company

Laurens
Byars Machine Company, Inc.

Loris
Hardee Manufacturing Company

Mauldin
Crompton & Knowles Corporation

Spartanburg
Piedmont Iron Works, Inc.
SOUTH CAROLINA (con't.)
Sumter
B. L. Montague Company

TENNESSEE
Athens
Seaton Iron & Metal Company

Chattanooga
Corley Manufacturing Company, Inc.
Ernest Holmes Company, Inc.
Stainless Metal Products, Inc.
W. L. Jackson Manufacturing Company, Inc.

Clarksville
41-A Products, Inc.

Crossville
Phillips Industries, Inc.

Gallatin
Cosco Business Furniture, Inc.

Greeneville
Metals Engineering Corporation

Johnson City
Mor-Flo Industries Corporation

Knoxville
Myers-Whaley Company
Towe Iron Works, Inc.

Manchester
M C A Sign Company, Tennessee

Memphis
Bluff City Manufacturing Company, Inc.
Cawthon Steel Company, Inc.
Jones & Laughlin Steel Corporation
National Manufacturing Company, Inc.
Southern Steel Supply Company, Inc.
Tri State Iron Works, Inc.
Tube Benders, Inc.

Millington
John C. Gilliland

TENNESSEE (con't.)
Nashville
Guide Industries
Jones & Laughlin Steel
Nashville Bridge Company
Rogers Manufacturing Company
Tennessee Steel & Supply Company

Pulaski
Denbo Scrap Materials, Inc.

Waynesboro
Wayne Metal Fabricators, Inc.

VIRGINIA
Bluefield
Platnick Steel & Engineers, Inc.

Bristol
Black Diamond Enterprises, Inc.

Charlottesville
Associated Steel Products, Inc.

Crozet
Acme Visible Records, Inc.

Fairfax
Weston Company, Inc.

Herndon
Union Iron Works Company

Lorton
Hallmark Iron Works, Inc.

Lynchburg
Montague-Betts Company, Inc.

Martinsville
Martinsville Iron & Steel Company

Norfolk
Globe Iron Construction Company, Inc.
Tidewater Steel Company, Inc.
VIRGINIA (con't.)

Richmond

Accent Ornamental Iron Company
Beauchamp Martin Gay & Company
Cruickshanks Iron Works Company
Steel Service Inc.

Roanoke

Al-Steel Fabricators, Inc.
Fabricated Metals Industries, Inc.
Roanoke Iron & Bridge Works