



## C&S: The prospects get rosier

When carloadings take the kind of plunge they took in 1975, cash flow all but dries up; and when cash flow diminishes, so does the enthusiasm of railway managers for buying any except the most essential new equipment. That was the story of railroads in 1975—and it was a story with a sad ending for many railroad suppliers.

For suppliers in the communications and signaling field, the end result was a drop of about 40% in new orders. Shipments remained high, because the builders were working off enormous backlogs accumulated in 1974. As the sales manager of one major C&S supplier put it at year-end: "Production has been terrific; it's the forecasts that have been keeping us up nights."

Now the forecasts are starting to look rosier—so much so that at least two major suppliers in the field are predicting that industry-wide shipments in 1976 will at least equal those of 1975 despite the drop-off in new orders during most of '75. By one estimate, railroad C&S shipments last year—excluding computers—were in the \$300-million neighborhood. A forecast from a company that has been more often right than wrong in the past calls for a 5% "real growth" this year.

● **The ConRail factor.** One reason for the expected turnaround is the emergence of a new railroad in the Northeast and the Midwest—ConRail. Penn Central started shutting off all orders in June of 1975. It's expected that ConRail is going to need

and get about \$30 million worth of C&S equipment and materials for delivery in 1976—"nothing fancy, no new systems; just basic hardware," as one builder who will be competing for the business puts it.

General Railway Signal President G.E. Collins, in an interview with *Railway Age*, summed up the review-and-outlook picture in the C&S field in terms that would seem to apply to many other companies as well:

"The year 1975 was an excellent year in terms of shipments and sales, but a very bad year in terms of new orders. Our backlog was pretty much eaten up in 1975. In 1976 we will be dependent on new orders. Orders pretty much reflect the railroads' operating results, and these results were bad for most of 1975. It also happened to be an off year for transit due to the cyclicity of the business, and to the very bad year that New York City experienced. [The New York City Transit Authority is possibly the world's biggest single purchaser of transit equipment and materials of all kinds.]

"But the railroads have many deferred projects that they need to get going on as operating results continue to improve. We look for 1976 to show a distinct improvement in orders. We see some modest improvement in the first half, and more as the year progresses."

● **Enter MARTA.** Collins points out that a new rail transit system—MARTA in

Atlanta—will become a factor in the 1976 market. MARTA requested bids in December for an automatic train control system. "There are 15 miles of double track line to be signaled and 37 stations to be built and controlled," notes Collins. Contracts are expected to be awarded this spring.

Most other suppliers polled by *Railway Age* are similarly optimistic.

Anaconda Wire & Cable's Konrad Loebel expects "an increase of new orders in 1976 over 1975, particularly in the second half of 1976. In our case, most orders are for immediate delivery." Bayly Engineering Ltd. Marketing Manager D.L. McPherson expects an increase of 20% to 30% in orders.

Extel Corp.'s Arnold E. Jacobs, manager, applications engineering, is optimistic across the board: "We expect an increase of 20% in deliveries and new orders as a result of completion of major facilities expansion and introduction of the next generation of product line." At General Cable Corp., Advertising Manager John Cavanaugh thinks new orders will be up by 12% to 14%.

The marketing manager for another major C&S equipment supplier reports: "We enter 1976 with a good backlog. We anticipate that, in terms of orders, '76 will get off to a modest start but will show an upward trend later in the year."

Kerite's Vice President W.A. Edwards says, "Our deliveries should be a little

higher than 1975, and our new orders should also be greater than in 1975."

A major storage battery manufacturer says increased productivity will enhance deliveries and predicts a 30% increase in new orders.

Harmon Industries President Robert E. Harmon notes that while his own company's capabilities have never been greater, or its finances stronger, some hard-pressed railroads are reluctant to purchase much-needed crossing protection systems. (For a close-up view of crossing-protection prospects, see p. 21).

New and improved product lines are on the way from several suppliers. A sampling:

—A new generation of signal cables incorporating recently established guidelines for low-smoke and low-toxicity requirements is under development by Anaconda's Anaconda-Continental Division.

—A new product line of automatic electronic communications teleprinters is planned by Extel.

—New products featuring low-cost microwave are indicated by Farinon Electric's E.G. Hall, vice president-marketing.

—A complete industrial line of pocket plate nickel-cadmium storage batteries will be introduced by McGraw-Edison.

—Addition of a new grade crossing protection product package is reported by Clifton H. Sass, Jr. of National Electric Control Co.

—The recently acquired telephone product lines of Wescom, Inc. are expected to generate a great deal of interest in the railroad market, according to Virginia Bender, advertising manager.

Some comments on ConRail's emerging role in the C&S market:

—Anaconda's Loebel: "We do believe ConRail will require larger quantities of signal and communications cables, particularly, on the lines to be electrified or re-electrified at 25 KV-ac."

—Extel's Jacobs: "Integration of information and data base should require extensive additional communications equipment."

—General Cable's Cavanaugh: "Much old and obsolescent equipment now in plant should be replaced with upgrading as the goal. ConRail should have compatible equipment from end to end which it will not have with present facilities on the lines involved."

—GRS's W.D. Maynard: "For ConRail to be economically feasible—and for it to furnish railway customers the services they want—existing signaling systems will require very substantial changes and additions. In particular, the controls

## 1976 C&S Budgets

(with percentages for equipment)

### 20 Selected Railroads

| Railroad              | Signaling        | Communications     |
|-----------------------|------------------|--------------------|
| Amtrak . . . . .      | —                | \$8,225,000 (n.a.) |
| BAR . . . . .         | \$ 126,000 (75%) | 163,000 (85%)      |
| B&LE . . . . .        | 369,800 (50%)    | 366,600 (22%)      |
| B&M . . . . .         | 3,000,000 (75%)  | 150,000 (33%)      |
| BN . . . . .          | 9,000,000 (60%)  | n.a.               |
| Clinchfield . . . . . | 210,000 (10%)    | 195,000 (5%)       |
| D&H . . . . .         | 1,515,000 (58%)  | 154,490 (72%)      |
| D&RGW . . . . .       | 380,000 (60%)    | 1,050,000 (80%)    |
| FEC . . . . .         | 1,109,653 (75%)  | n.a.               |
| Frisco . . . . .      | 2,700,000 (55%)  | 347,000 (80%)      |
| ICG . . . . .         | n.a.             | 8,585,758 (17%)    |
| LIRR . . . . .        | 2,408,000 (54%)  | 3,192,500 (58%)    |
| L&N . . . . .         | 3,000,000 (60%)  | 1,750,000 (75%)    |
| MC . . . . .          | 150,000 (60%)    | 5,000 (100%)       |
| Milw. . . . .         | 1,079,000 (60%)  | 578,000 (54%)      |
| MP (System) . . . . . | 1,090,000 (60%)  | 401,000 (80%)      |
| NW . . . . .          | 961,000 (60%)    | 8,800,000 (70%)    |
| RF&P . . . . .        | 400,000 (25%)    | 1,000,000 (75%)    |
| SCL . . . . .         | 14,000,000 (60%) | 782,000 (85%)      |
| Union . . . . .       | 225,000 (70%)    | 129,800 (0.9%)     |
| UP . . . . .          | n.a.             | 1,450,000 (70%)    |

### Transit Systems

| System          | Signaling        | Communications  |
|-----------------|------------------|-----------------|
| BART . . . . .  | 698,000 (30%)    | \$603,000 (60%) |
| MBTA . . . . .  | 5,000,000 (30%)  | 3,500,000 (50%) |
| NYCTA . . . . . | 10,000,000 (25%) | 500,000 (25%)   |
| PATH . . . . .  | 1,962,000 (17%)  | 746,000 (41%)   |
| PATCO . . . . . | 1,500,000 (n.a.) | —               |
| SEPTA . . . . . | 1,176,000 (31%)  | 300,000 (n.a.)  |
| WMATA . . . . . | 3,000,000 (30%)  | 1,600,000 (40%) |

of various interlockings will need consolidation, car class yards will need upgrading, and train control will play a much more important role if higher passenger train speeds are to be attained."

—Kerite's Edwards: "I am sure there will be a great increase in new signaling and communications equipment due to deferred maintenance."

—McGraw-Edison's W.A. Melroy: "New signaling and communications equipment...will be necessary in order to upgrade and modernize these systems to the acceptable standards which bankrupt railroads have not been able to maintain."

—Prodelin Inc.'s R.C. Huntington, general sales manager: "We feel ConRail will have to acquire extensive communications

equipment in order to function with any efficiency at all."

—A major supplier of equipment used in C&S networks believes ConRail will require extensive acquisitions, if they can afford it.

Dissenters to the view that ConRail will be a factor in the '76 market are Farinon, Siemens, and Western-Cullen. WABCO sees a return to normal of the PC-NYC years of the past.

● **Railroad plans.** Many railroads have not yet completed their C&S spending plans, and some budgets that have been completed (see table, p. 17) are subject to change.

A sampling of C&S projects:

—BN's program includes the addition

of 165 miles of CTC, principally in the southern coal corridor between Lincoln, Neb., and Edgemont, S.Dak.

—SCL will install 90 miles of CTC between Dover, S.C., and Hamlet, N.C. Also in SCL's plans are 125 new highway crossing signal installations.

—Chessie will complete construction of a \$7.8-million microwave network in the first half of this year. The network's 45 stations, covering 850 route miles, will offer 670 separate channels.

—FEC plans test installations of strobelights for highway-crossing warning devices. FEC also has scheduled an additional 41 miles of CTC, and installation of 40 automatic crossing warning devices. ■

## RAILROAD COMMUNICATIONS INSTALLED IN 1975

| Railroad             | Radio Units | Intercommunications |                          | Channelizing Equipment     |           | Telephone |                    | Computer 1/0 units | ACI Scanners | Microwave Stations |
|----------------------|-------------|---------------------|--------------------------|----------------------------|-----------|-----------|--------------------|--------------------|--------------|--------------------|
|                      |             | No. of Systems      | Loudspeakers & Telephone | Carrier Units Terms & Rep. | Data Sets | Exchanges | Stations Available |                    |              |                    |
| Alaska               | 110         | 2                   | 22                       | 37                         | 25        | —         | —                  | 13                 | —            | —                  |
| Amtrak               | 144         | 17                  | 23                       | —                          | —         | —         | —                  | 106                | —            | —                  |
| Atlanta & St. A. Bay | 12          | —                   | —                        | —                          | —         | —         | —                  | —                  | —            | —                  |
| A&WP                 | 1           | —                   | —                        | —                          | —         | —         | —                  | —                  | —            | —                  |
| B&LE                 | 40          | —                   | —                        | —                          | —         | —         | —                  | 8                  | —            | —                  |
| B&M                  | 75          | —                   | 30                       | 2                          | —         | —         | —                  | —                  | 1            | —                  |
| BC                   | 52          | —                   | —                        | 228                        | 11        | 3         | 190                | —                  | —            | 7                  |
| BN                   | 975         | —                   | —                        | —                          | 12        | 1         | —                  | —                  | —            | —                  |
| CN                   | 1580        | 20                  | 160                      | —                          | —         | 1         | 25                 | 47                 | —            | —                  |
| CP Rail              | 500         | —                   | —                        | —                          | —         | —         | —                  | —                  | —            | —                  |
| Chessie System       | 380         | 3                   | 17                       | —                          | —         | 2         | 262                | —                  | 2            | 30                 |
| CMStP&P              | 77          | 1                   | 20                       | 40                         | 6         | 1         | 12                 | 20                 | —            | —                  |
| Clinchfield          | 10          | —                   | —                        | —                          | —         | —         | —                  | —                  | —            | —                  |
| D&H                  | 22          | —                   | —                        | —                          | —         | —         | —                  | —                  | —            | —                  |
| D&RGW                | 101         | 1                   | —                        | 15                         | —         | —         | —                  | —                  | —            | 21                 |
| EL                   | —           | —                   | —                        | —                          | —         | 1         | 8                  | —                  | —            | —                  |
| FEC                  | —           | —                   | —                        | —                          | —         | —         | —                  | —                  | —            | —                  |
| Frisco               | 126         | —                   | —                        | 14                         | —         | —         | —                  | —                  | —            | —                  |
| Georgia              | 2           | —                   | —                        | —                          | —         | 1         | —                  | —                  | —            | —                  |
| ICG                  | 123         | —                   | —                        | 7                          | 44        | 1         | 200                | —                  | —            | 10                 |
| LI                   | 1           | 24                  | —                        | —                          | —         | —         | —                  | —                  | —            | —                  |
| LV                   | 32          | —                   | —                        | —                          | 25        | —         | 30                 | —                  | —            | —                  |
| L&N                  | 625         | 14                  | 217                      | 6                          | 7         | 1         | 130                | 5                  | —            | 7                  |
| Maine Central        | 121         | —                   | —                        | —                          | —         | —         | —                  | —                  | —            | —                  |
| MKT                  | 30          | —                   | —                        | —                          | —         | —         | —                  | —                  | —            | —                  |
| MP System            | 173         | —                   | 10                       | 25                         | 427       | 2         | 120                | 417                | —            | 2                  |
| N&W                  | 483         | —                   | —                        | —                          | —         | 4         | 700                | —                  | —            | 12                 |
| Ont. Northland       | 67          | —                   | —                        | 10                         | —         | —         | —                  | —                  | —            | —                  |
| PC                   | 467         | 1                   | 60                       | 2                          | —         | 16        | 80                 | —                  | —            | —                  |
| PRSL                 | —           | 1                   | 8                        | —                          | —         | —         | —                  | —                  | —            | —                  |
| PS                   | 8           | —                   | —                        | —                          | —         | —         | —                  | —                  | —            | —                  |
| QNS&L                | 25          | —                   | —                        | 24                         | —         | 2         | 20                 | —                  | —            | 2                  |
| RF&P                 | 6           | —                   | —                        | —                          | —         | —         | —                  | —                  | —            | —                  |
| SCL                  | 36          | 1                   | 6                        | 3                          | —         | —         | —                  | —                  | —            | —                  |
| Soo Line             | 1           | —                   | —                        | 6                          | —         | 1         | 40                 | —                  | —            | —                  |
| Southern             | 215         | —                   | 5                        | 464                        | 9         | 1         | 100                | —                  | —            | 20                 |
| SP                   | 189         | —                   | —                        | —                          | —         | —         | —                  | 13                 | —            | 6                  |
| Texas Mexican        | 4           | —                   | —                        | —                          | —         | —         | —                  | —                  | —            | —                  |
| TP&W                 | 2           | —                   | —                        | —                          | —         | —         | —                  | —                  | —            | —                  |
| Union                | —           | —                   | —                        | —                          | —         | —         | —                  | 1                  | —            | —                  |
| UP                   | 130         | —                   | —                        | 20                         | 16        | —         | —                  | 1                  | —            | 4                  |
| WP                   | 5           | —                   | 12                       | 12                         | —         | —         | —                  | 5                  | —            | —                  |

## RAILROAD SIGNALING INSTALLED IN 1975

| Railroad             | Highway Grade Crossings Protected by |                                | Block Signals & Traffic Control |          |                |         |                         | Safety Detectors | Misc. Signal Units |
|----------------------|--------------------------------------|--------------------------------|---------------------------------|----------|----------------|---------|-------------------------|------------------|--------------------|
|                      | Flashing-light Signals               | Flashing-light Signals & gates | Road Miles                      | Switches | Electric Locks | Signals | Train Stops Cab Signals |                  |                    |
| Alaska               | 5                                    | —                              | —                               | —        | —              | —       | —                       | —                | —                  |
| Atlanta & St. A. Bay | 5                                    | —                              | —                               | —        | —              | —       | —                       | —                | —                  |
| A&WP                 | —                                    | 1                              | —                               | —        | —              | —       | —                       | —                | —                  |
| B&A                  | 1                                    | —                              | —                               | —        | —              | —       | —                       | —                | —                  |
| B&LE                 | —                                    | 2                              | —                               | —        | —              | —       | —                       | 1                | —                  |
| B&M                  | 4                                    | 9                              | 7.6                             | 5        | 1              | 11      | —                       | —                | 1                  |

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# RAILROAD SIGNALING INSTALLED IN 1975 (Continued)

| Railroad       | Highway Grade Crossings Protected by |                                | Block Signals & Traffic Control |          |                    |         |                         | Safety Detectors | Misc. Signal Units |
|----------------|--------------------------------------|--------------------------------|---------------------------------|----------|--------------------|---------|-------------------------|------------------|--------------------|
|                | Flashing-light Signals               | Flashing-light Signals & gates | Road Miles                      | Switches | Electric Locks     | Signals | Train Stops Cab Signals |                  |                    |
| BC             | 4                                    | —                              | —                               | —        | —                  | —       | —                       | —                |                    |
| BN             | 48                                   | 33                             | 20.7                            | 5        | 4                  | 32      | —                       | 18               | 5                  |
| CN             | 120                                  | 10                             | 77                              | 32       | 10                 | 116     | —                       | 12               | —                  |
| CP Rail        | 88                                   | 8                              | —                               | 4        | 6                  | 8       | —                       | 2                | —                  |
| Chessie System | 33                                   | 15                             | 17                              | 3        | 11                 | 15      | —                       | —                | —                  |
| C&IM           | 1                                    | —                              | —                               | —        | —                  | —       | —                       | —                | —                  |
| CMSTP&P        | 32                                   | 11                             | 4                               | 3        | —                  | 4       | —                       | 11               | 48                 |
| Clinchfield    | 2                                    | 1                              | —                               | —        | —                  | —       | —                       | 12               | —                  |
| D&H            | —                                    | 4                              | —                               | —        | ITCS Control Point |         | —                       | 1                | —                  |
| D&RGW          | 3                                    | 1                              | 109                             | 11       | 16                 | 90      | —                       | 41               | 11                 |
| EL             | 3                                    | 7                              | 28                              | —        | —                  | 13      | —                       | —                | —                  |
| FEC            | 2                                    | 11                             | —                               | —        | —                  | —       | —                       | —                | —                  |
| Frisco         | 29                                   | 13                             | —                               | 12       | 6                  | 4       | —                       | 1                | 11                 |
| Georgia        | —                                    | 10                             | —                               | —        | —                  | —       | —                       | —                | —                  |
| GB&W           | 6                                    | —                              | —                               | —        | —                  | —       | —                       | —                | —                  |
| ICG            | —                                    | —                              | —                               | —        | —                  | —       | —                       | 5                | —                  |
| LV             | 2                                    | 3                              | 59                              | 6        | 8                  | 38      | —                       | —                | —                  |
| LI             | —                                    | 34                             | 3.5                             | 2        | —                  | 4       | —                       | —                | —                  |
| L&N            | 48                                   | 15                             | —                               | —        | —                  | —       | —                       | 26               | —                  |
| Maine Central  | 2                                    | —                              | —                               | —        | —                  | —       | —                       | —                | —                  |
| MKT            | 17                                   | 3                              | —                               | —        | —                  | —       | —                       | —                | —                  |
| MP System      | 52                                   | 33                             | —                               | 7        | —                  | 13      | —                       | 23               | —                  |
| N&W            | 27                                   | 22                             | 21                              | 12       | 21                 | 62      | —                       | 2                | —                  |
| Ont. Northland | 2                                    | —                              | —                               | —        | —                  | 3       | —                       | 10               | —                  |
| PC             | 26                                   | 11                             | 23.5                            | 30       | 8                  | 32      | —                       | 9                | 3                  |
| PRSL           | —                                    | 2                              | —                               | —        | —                  | —       | —                       | —                | —                  |
| QNS&L          | —                                    | —                              | —                               | —        | —                  | —       | —                       | 1                | 8                  |
| RF&P           | —                                    | —                              | —                               | 1        | —                  | 3       | —                       | —                | —                  |
| SCL            | 35                                   | 78                             | 43                              | 4        | 16                 | 44      | —                       | 3                | 10                 |
| Soo Line       | 16                                   | 4                              | —                               | —        | —                  | —       | —                       | —                | 2                  |
| Southern       | 97                                   | 115                            | —                               | 14       | 40                 | 15      | —                       | 12               | —                  |
| SP             | 57                                   | 257                            | —                               | —        | —                  | —       | —                       | 71               | —                  |
| Texas Mexican  | 1                                    | —                              | —                               | —        | —                  | —       | —                       | —                | —                  |
| TP&W           | 4                                    | —                              | —                               | —        | —                  | —       | —                       | —                | —                  |
| UP             | 10                                   | 33                             | 117                             | 47       | 60                 | 246     | 52                      | 15               | 47                 |
| Vermont        | 3                                    | —                              | —                               | —        | —                  | —       | —                       | —                | —                  |
| WP             | 10                                   | 11                             | —                               | 1        | —                  | 3       | —                       | —                | —                  |

# TRANSIT SIGNALING INSTALLED IN 1975

|                                             | Highway Grade Crossings Protected by |                                | Block Signals & Traffic Control |          |                |         |                         | Safety Detectors | Miscellaneous Signal Units |
|---------------------------------------------|--------------------------------------|--------------------------------|---------------------------------|----------|----------------|---------|-------------------------|------------------|----------------------------|
|                                             | Flashing-light Signals               | Flashing-light Signals & gates | Road Miles                      | Switches | Electric Locks | Signals | Train Stops Cab Signals |                  |                            |
| BART                                        | —                                    | —                              | —                               | 177      | —              | —       | —                       | —                | —                          |
| MBTA                                        | 2                                    | —                              | —                               | 136      | 1              | 115     | 13                      | —                | —                          |
| Montreal Urban Comm. Transit Commission ... | —                                    | —                              | 1                               | 1        | 2              | 1       | —                       | 3                | —                          |
| NYCTA                                       | —                                    | —                              | 3¼                              | 38       | —              | 149     | 149                     | —                | 8                          |
| PATH                                        | —                                    | —                              | —                               | —        | —              | 19      | 15                      | —                | 2                          |
| WMATA                                       | —                                    | —                              | 5                               | 66       | 1              | 90      | —                       | —                | —                          |

# TRANSIT COMMUNICATIONS INSTALLED IN 1975

|        | Intercommunications |                |                           | Channelizing Equipment      |           | Telephone |                    | Computer 1/0 units | ACI Scanners | Microwave Stations |
|--------|---------------------|----------------|---------------------------|-----------------------------|-----------|-----------|--------------------|--------------------|--------------|--------------------|
|        | Radio Units         | No. of Systems | Loudspeakers & Telephones | Carrier Units Terms. & Rep. | Data Sets | Exchanges | Stations Available |                    |              |                    |
| BART   | 5                   | —              | —                         | —                           | —         | —         | —                  | —                  | —            | —                  |
| MBTA   | 150                 | 15             | 250                       | —                           | —         | 1         | 400                | —                  | —            | —                  |
| NYCTA  | 95                  | 1              | 500                       | —                           | —         | —         | —                  | —                  | —            | —                  |
| PATCO  | —                   | —              | —                         | 4                           | —         | —         | —                  | —                  | —            | —                  |
| PATH   | 4                   | 1              | 50                        | 2                           | —         | —         | 50                 | —                  | —            | —                  |
| SEPTA  | 3                   | 1              | 40                        | —                           | 3         | —         | 1,000              | —                  | —            | —                  |
| SIRTOA | 6                   | 1              | —                         | 4                           | —         | —         | —                  | —                  | —            | —                  |
| WMATA  | 60                  | 26             | 1,000                     | 144                         | 12        | 1         | 1,200              | —                  | —            | —                  |