

# MODERN RAILROADS

NOVEMBER 1960



## THE "NEW" NEW YORK CENTRAL

26th in Modern Railroads' series...

Private Enterprise at work





# The New York Central spits in winter's eye!

To a railroad, winter had always meant drifted snow, frozen switches and delayed trains. Then Central's imaginative research staff attacked Old Man Winter with a new weapon, the Snow Blower! A surplus jet engine from a B-36 hitched on to a caboose becomes a controlled hurricane swirling through icebound switchyards. In its wake, lights change from red to green, and that shipment to Boston you were worried about is on its way.

The Snow Blower is one of a host of ideas springing from Central's Technical Research Center. In this lab you'll find Central men utilizing nuclear energy, electronics, all the newest techniques, plus down-to-earth common sense to de-

velop faster, more efficient freight transportation. Most important, Central's research has one major objective . . . to provide our customers with faster schedules, consistent on-time performance, and continually better service.



ROAD TO THE FUTURE

This reprint from the November, 1960 issue of MODERN RAILROADS, without advertising, presents a comprehensive editorial and pictorial description of the "new" New York Central System. It is being distributed by the railroad as a matter of public information.



## THE NEW NEW YORK CENTRAL

26th in Modern Railroads' series, Private Enterprise at Work  
By Tom Shedd, Jr. Nancy Ford Charles W. Donnelly

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### The Front Cover

Three elements that typify the new New York Central appear on our fold-out front cover: Flexi-Van, Centralized Traffic Control, and mechanized track maintenance. The picture, by NYC photographer Ed Nowak, shows one of Central's Super-Van trains passing a mechanized force on the Syracuse division, west of Bergen, N.Y. Typical of Central's drive to become more efficient was its installation of CTC on this former four-track division, converting it to a high-speed two-track line.

The dieselized Super-Van train, operating literally at passenger train speed, is an example of the railroad's service mindedness. It is one of many new services through which the Central is moving to improve its competitive position. This entire issue of Modern Railroads is devoted to the achievements, plans and problems of this new New York Central. Here is another outstanding example of what vigorous railroad management can accomplish, working against severe handicaps.

"PRIVATE ENTERPRISE AT WORK"

# The New New York Central

## Building the Road to the Future

By Tom Shedd, Jr.—Nancy Ford—Charles W. Donnelly

Since the middle of 1954 the New York Central System has been in the throes of an unprecedented "face-lifting."

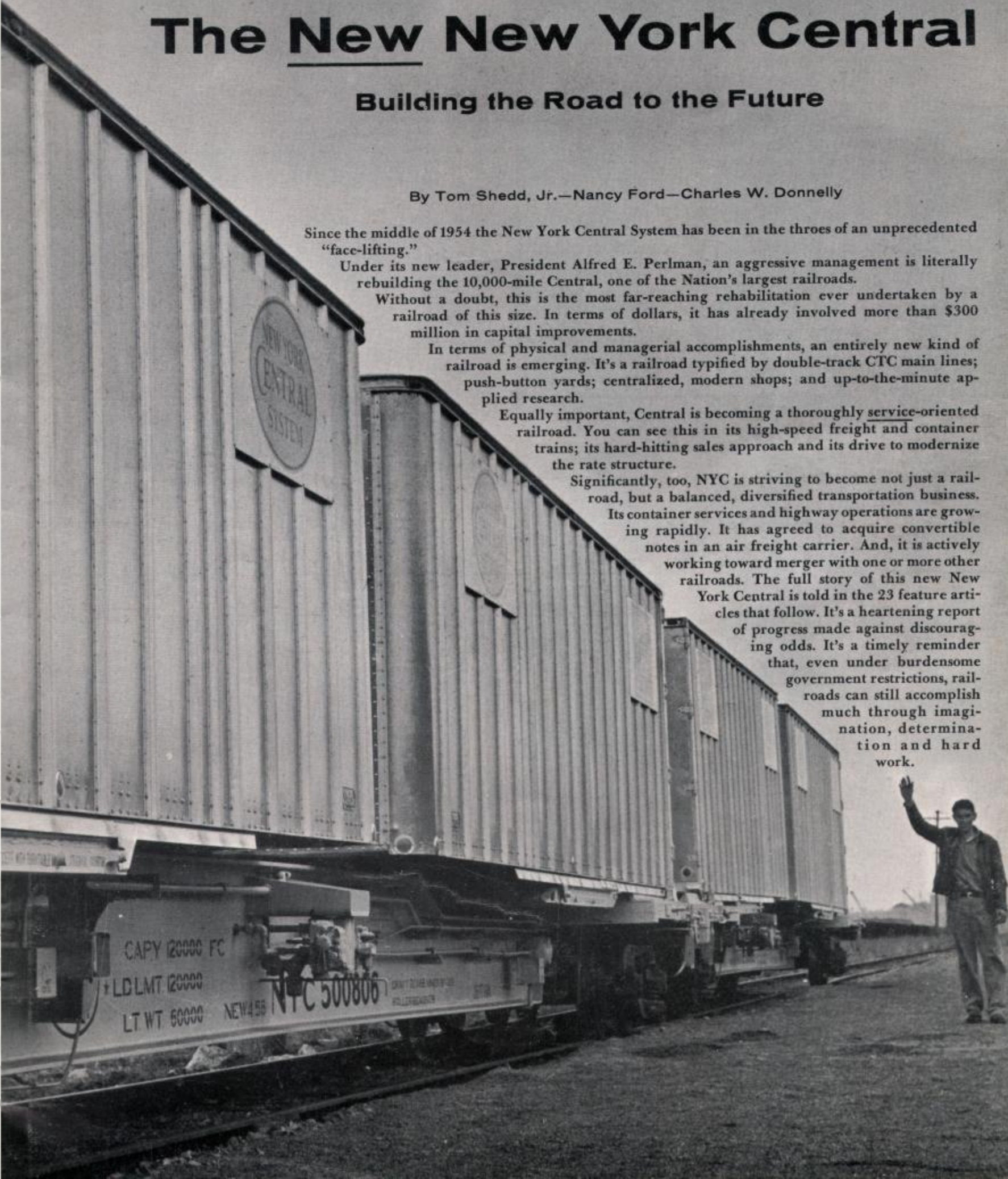
Under its new leader, President Alfred E. Perlman, an aggressive management is literally rebuilding the 10,000-mile Central, one of the Nation's largest railroads. Without a doubt, this is the most far-reaching rehabilitation ever undertaken by a railroad of this size. In terms of dollars, it has already involved more than \$300 million in capital improvements.

In terms of physical and managerial accomplishments, an entirely new kind of railroad is emerging. It's a railroad typified by double-track CTC main lines; push-button yards; centralized, modern shops; and up-to-the-minute applied research.

Equally important, Central is becoming a thoroughly service-oriented railroad. You can see this in its high-speed freight and container trains; its hard-hitting sales approach and its drive to modernize the rate structure.

Significantly, too, NYC is striving to become not just a railroad, but a balanced, diversified transportation business.

Its container services and highway operations are growing rapidly. It has agreed to acquire convertible notes in an air freight carrier. And, it is actively working toward merger with one or more other railroads. The full story of this new New York Central is told in the 23 feature articles that follow. It's a heartening report of progress made against discouraging odds. It's a timely reminder that, even under burdensome government restrictions, railroads can still accomplish much through imagination, determination and hard work.







ENROUTE to stockholders meeting, Mr. Perlman meets the press informally.



J. F. Nash  
VP-Operations



R. W. Minor  
Vice Pres.-Law



W. R. Grant  
VP-Finance



W. M. Hoffman  
VP-Frt. Sales



A. E. Baylis  
VP-Marketing



E. C. Nickerson  
VP-Pass.-Mdse.



J. B. Joynt  
VP-Mgmt. Planning



L. B. Fee  
VP-Employ. Rel.



H. F. McCarthy  
Vice Pres.-P&S



J. O. Boisi  
VP-Real Estate



L. W. Horning  
VP-Washington



Douglass Campbell  
Vice President



R. W. Carroll  
Secretary

## PROGRESS REPORT ON A REVOLUTION

Since mid-1954 a new, aggressive team has been  
driving to remake the New York Central . . . Here's  
the score to date

**I**N MID-1954, a new management moved into the New York Central Railroad, second largest rail carrier, revenue-wise, in the country. The change followed a bitter proxy fight led and won by the late Robert R. Young against the Vanderbilt interests.

A managerial revolution was promptly begun by the new owners, under the leadership of Alfred E. Perlman, President. (See Modern Railroads, February, 1956.) This issue is a further report on the achievements of that revolution, now in its sixth year. These are the highlights:

Plant improvement and modernization outlays of \$318 million . . .

A record reduction in debt totaling nearly \$122 million . . .

A slash in the deficit from passenger operations from \$52.3 million in 1957 to an estimated \$20 million in 1960 . . .

Introduction of a containerized freight service — "Flexi-Van" — expected to produce \$30 to \$35 million in new revenues next year . . .

Reorganization of the freight sales department for increased emphasis on tailored services and rates for customers, increased business for the railroad . . .

New operating practices, new services, new cost controls, new approaches to ratemaking . . .

Increased income from real estate operations . . .

A smoothly functioning executive team, with a good "second team" under development . . .

A start towards a merger . . .

This progress is notable. It is all the more notable considered in the light of the difficulties under which it was made, not the least of which were the poor business years of 1958 — a recession period; 1959 — marked by a long steel strike; and 1960 — marked by both steel and railroad strikes and a lower-than-expected level of freight loadings.

"Our next drive," declares Al Perlman, "will be toward twin goals — more ton-miles; more operating efficiency through mergers." He believes that the key to the former is better pricing of railroad services, and that the key to better pricing is improved knowledge of costs.

"Gross ton-miles in this country are increasing over-all," Mr. Perlman continues, "but the railroad share of ton-miles continues to slip. I think the big reason for this and the big increase in private trucking in particular is the railroads' pricing structure."

"On the New York Central," he adds, "we now know what our costs are, and with a reorganized freight sales department, we're going to do more market research, and go after all the business we can get. On the other hand, there must also be changes in regulatory attitudes toward the pricing of railroad services once costs are known. We must be permitted — as are other utilities — to quote volume rates to volume users of our services."

### Cooperation of Government, Labor Needed

Commenting on mergers which must be sought to obtain savings through elimination of excessive and duplicate facilities and permit more automation, the NYC President said:

"In this area, railroads must have the cooperation not only of government but of labor. Currently, labor is getting the lion's share of the productivity that results from capital outlays made to improve efficiency."

"I'm hopeful," he said, "that eventual conferences with the executives of unions over costly outmoded working rules will be fruitful. There are statesmen in railroad labor and I believe a fair agreement can be reached."

Central's \$318 million of capital outlays were, of course, planned to step up operating efficiency. Prominent in the program were new push-button freight classification yards. Four have been completed — at Buffalo, N.Y., Elkhart and Indianapolis, Ind., and Youngstown, O. A new yard is also scheduled for Detroit, and another

between Albany and Syracuse, with exact location not yet finalized. Modernization (largely through track re-arrangement) has been completed at Kankakee, Ill. and Toledo, O., yards, and is under way at Cleveland, Chicago, Rochester, and Rockport. With an upturn in business, savings from the new yards will multiply — they can handle much heavier freight volume faster with little added expense.

Typical of other improvements to the physical plant is the big program of centralized traffic control, which, as any railroader knows, provides the near-equivalent of double track operation on a single track, or four-track operation on two. Next year, when a few more segments are completed, the heavy density line between Chicago and New York will be "CTC," with double track instead of four. Total outlays this year for CTC will be \$7.5 million. This figure, plus expenditures planned up to and including 1965, will add up to a total of \$42.5 million, and CTC installations will be virtually complete.

"The \$42.5 million is a gross figure," says John F. Nash, Vice President-Operations, "and is before salvage and other savings. Net outlays are about half that total. Our return on net investment averages between 25 and 95 percent. Obviously, priority is given to the projects yielding the greatest return, or contributing the most to improved operation."

### Elimination of Obsolete Facilities Effects Savings

Through eliminating obsolete stations, both freight and passenger, substantial operating savings have been effected. Currently, the management is winding up an interesting station transaction at Syracuse, hopes to develop similar transactions at Cleveland and Albany. Central is selling its elevated passenger right-of-way in Syracuse to the State for a highway for several millions of dollars. The railroad's Lake (freight) line will be upgraded so that passenger trains can run over it, and a new passenger facility, tailored to present needs, will be built at a suitable location, and the existing station sold or leased. It will cost about \$2.3 million to make the change, but offsetting this will be funds from the sale of the elevated line plus some \$600,000 in salvage. Annual savings under the new arrangement will be substantial.

Central also has two lines at Cleveland. If it can arrange some disposition of its station facilities, which it owns (93 percent) with Nickel Plate (7 percent), it could run passenger trains over its Lake line and re-locate its station, trimming operating expenses substantially.

The company pruned out numerous unprofitable branch lines. Since 1956, and to date in 1960, 358 miles have been abandoned, at annual savings of \$2.1 million. (Nearly \$7 million also was realized through sale or salvage of facilities related to these lines.) Applications are also pending for four additional abandonments, involving about 60 miles. Applications are being prepared involving nine projects and over 178 miles.

Freight train-miles are now up slightly — 12,270,470 for the first six months of 1960 compared with 12,239,112 in the corresponding period of 1959. This reflects the addition of new fast services, including "Super-Van" trains.

On another front, Central has vastly improved its safety record. With every officer from the President to line supervisors interested in safety, injuries — as well as pay-outs for claims (which in some recent years exceeded Central's net income) — have been substantially reduced.

Central's new management switched to the "spot" method of repairing freight cars, more recently adopted it for locomotive repairs as well. Central is virtually 100 percent mechanized in its track and bridge maintenance and has switched from 127-pound rail to 136-pound rail of new design. There's more life in the head of this rail, although the web is the same. NYC is also welding into quarter-mile sections all new rail that's laid, for further maintenance savings.

Asked for comment on Central's current state of maintenance, Mr. Nash said the road has trimmed its track maintenance only slightly in this relatively poor traffic year. "Our gondolas and hoppers — in heaviest demand from shippers — are only 5.8 per-

CONTINUED



## All-embracing, three-way control system keeps rein on costs

cent bad order," he said; "our boxcars, 14.4 percent. We're not happy about the boxcar situation, but the figure is distorted somewhat by auto boxcars which aren't in demand. However, our locomotive repair situation is excellent, in addition to which we have some completely rebuilt ones in storage ready for winter operation."

One of management's toughest problems has been trimming expense ratios in the face of constantly rising wage costs. A graphic illustration of this is the comparison of 1954 payrolls with those of 1959. In the earlier year, when Central's employees numbered 84,977, total wage costs including payroll taxes were \$428.1 million. In 1959, employee count was down to 61,425, but the wage bill was \$428.3 million!

Currently, means must be found of absorbing an estimated \$14.7 million annual increase in payroll expenses under new contracts negotiated. "At times," muses John Nash, "you seem to run like hell to stand still."

The fact is, Central is making dents on its expense ratios, although periods of business recession tend to obscure the progress. Gross ton-miles per freight-train-hour, for example, have gone up substantially and continue to do so. In the first half of this year, this yardstick of efficiency stood at 59,169, compared with 56,548 in the corresponding period of 1959.

### Target: Lower Transportation Ratio

If Central's ratio of maintenance expenses to gross revenues can be held under 30 percent — where it has stayed consistently under efficiencies introduced by the new management — and the transportation ratio can be brought below 40 percent, Central can look forward to bringing an improved percentage of gross down to net. "A transportation ratio under 40 percent is our target, and we intend to hit it," declares Mr. Nash.

(In 1959, NYC's net income was \$8.4 million compared with \$4.0 million in 1958, when the road had the benefit of non-recurring income of \$13.7 million in the form of retroactive mail pay.)

In the area of financial management, Central has made extraordinary progress. While it was pouring \$318 million into capital improvements since 1954, it has also — in less than three years — retired \$121.8 million of debt, and pared heavy near-term maturities to manageable proportions. This was accomplished without any refunding operations; yet Central now has over twice as much cash (an estimated \$68 million Oct. 1) as was in the treasury in mid-1954.

Here's what happened:

When the year 1958 opened, Central's balance sheet showed total long-term debt outstanding of \$814.1 million, including 1958 maturities. This was exclusive, however, of \$166.4 million of obligations (which Central guarantees) of leased railroads, including such important lines as the Big Four, Michigan Central, and Boston & Albany. A balance sheet footnote, however, detailed ten-year maturities, including \$233.6 million for Central and its leased lines in the 1958-1962 period alone.

As of Oct. 1 this year, the debt of New York Central was down to \$718.5 million, although \$57.4 million in new debt was incurred meantime (in the form of new equipment obligations and the take-down of part of Central's \$40 million government-guaranteed borrowing to speed up its improvement program). Leased line debt was down to \$140.2 million. Central's total liability for its own and leased line obligations had been slashed by \$121.8 million. And as of Oct. 1, the \$233.6 million of near-term maturities had been chopped to \$74.4 million, largely through open market purchases of bonds at substantial discounts.

In addition, Central has segregated another \$8 million in cash, in a voluntary sinking fund, to apply against the remaining \$74.4 million. This fund, together with the cash the road generates an-

nually from depreciation of equipment alone (\$30 million) will virtually take care of this entire liability.

"After that," notes Walter R. Grant, Vice-President Finance, "except for installments due on equipment obligations and on the government-guaranteed loan, and a small bond issue of \$2.96 million in 1963, Central and its leased lines have no big bond maturities until 1977. We're over a hump."

Interestingly, Central is in the comfortable position of being able — even when it breaks even, i.e., has no net income — of being able to generate some \$65 million a year in cash. Annual plant and equipment depreciation charges approximate \$45 million. Real estate sales run about \$10 million; scrap sales not accounted for in operations add another \$10 million. (This cash flow approximates about \$10 a share annually.)

Central's fixed charges in 1955 were \$48.3 million. In 1959 they were \$42.0 million. Mr. Grant estimates them at \$41 million for 1960, expects them to come down another \$1.5 million in 1961, largely as the result of the reduction in debt.

The management continues its program of corporate simplification for tax and other savings, and by this year-end it is expected NYC's incorporation in Delaware will be completed, greatly minimizing the legal problems of operating in six different states.

Central has instituted a tight and all-embracing system of cost controls — of three major types. First is a budgetary system covering everything except production. "This system closely resembles that of a manufacturing company," comments Mr. Grant, who was imported from Studebaker-Packard Corp. "It covers everything but production costs." (Over \$100 million in expenses are controlled in this budget, covering such items as rent, stationery, utilities, travel, wages, and the like.)

Monthly reports are provided for every officer from the President to the division superintendent, itemizing not only the expenses of his own office but of the men reporting to him. A district manager's report, for example, includes expenses of the division superintendents reporting to him. These reports, which have nothing to do with Interstate Commerce Commission accounting, also print the "variation" from the budget. ("If an item is up, why?")

### Cost Information—A Pricing Tool

The second type of control is over the cost of manufacturing the product, which for a railroad is transportation service. There is cost control — and monthly reports — on passenger and freight trains, passenger and freight stations, and freight yards. There are separate weekly man-count reports, overtime control reports, inventory control reports, initial and final terminal delay control reports. "You name it — we've got it," declares Mr. Grant (See Accounting story).

Another phase of "product" control is the costing of individual freight shipments and of entire product "lines," i.e., Flexi-Van business, freight forwarder business, less-than-carload business. This cost information is providing the sales department with valuable pricing tools (See the Freight Sales story).

The third type of cost control is that over improvement projects, or capital outlays. The annual budget (which may be adjusted from month to month) is fixed before the fiscal year opens, following extensive staff meetings at which any officer recommending an expenditure must be prepared to "sell" and "defend" its importance.

Incidentally, Central's inventories of materials and supplies were cut from \$61.6 million in 1953 to \$48.6 million in 1954, and to \$22.3 million in 1959, thus freeing substantial amounts of cash for other corporate uses. This reduction was accomplished also through improved controls (See the story on Purchases and Stores). ■

## THE MAN FROM COLORADO

WHEN he can be corralled in his office high above one of New York's more colorful canyons, the graying, blue-eyed boss of the second largest rail "spread" in the country is discovered to be the same quiet, confident man he was when he arrived from the West six years and many problems ago. Usually, though, Alfred E. Perlman, President of the New York Central Railroad, is out on the property in his business car, riding herd on the myriad operations that make a great transportation system tick.

In the spring of 1954, Al Perlman was invited by railroad maverick Robert R. Young, a man he had never met, to come to the New York Central to modernize and streamline its properties, reorganize its personnel and operations.

Perlman was then Executive Vice President of the Denver & Rio Grande Western Railroad where he had enhanced his reputation as a bright young man of railroading through operating reforms that included introduction of off-track maintenance machines on a mountain railroad where "it couldn't be done." He pushed dieselization, backed the building of a research laboratory for "test-tube" railroading that produced millions of dollars in operating savings on the Rio Grande. (The Central now has a laboratory at Cleveland — a testimonial to Perlman's firm belief in railroad research.)

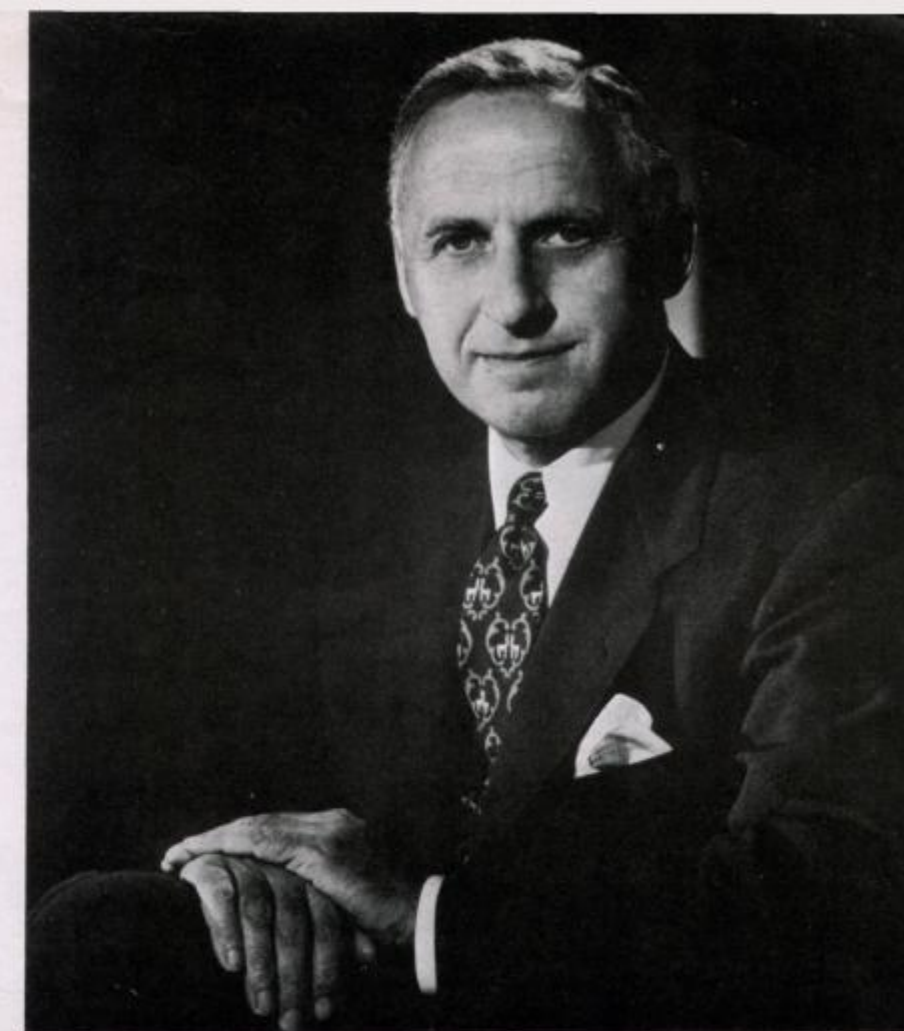
### Big Railroad, Big Problems

On the 10,300-mile Central Perlman found familiar problems, and some new ones — all of them tougher because of the sheer size of the system. Central's large and once-profitable passenger business, including commuter services, was producing deficits that were a severe drain on freight revenues. The Central plainly had too much plant — freight yards and other facilities were obsolete. The road suffered from excessive taxation, and there were heavy debt maturities looming.

Into these and other roadblocks the new chief executive officer charged with all the drive for which he is noted. The dramatic progress Central has made along the comeback trail can be credited to the brilliance of the man from Colorado and his smoothly functioning "young" executive team (average age, 46.)

Because he holds that "a machine is only as good as the man behind it," Mr. Perlman initiated a program of management development along with his modernization projects. "We're building a good backlog of management material," he says with obvious pride. "I consider this the No. 1 responsibility of any chief executive."

Since he was eight years old (he was born in 1902), Al Perlman has never wanted to be anything but a railroader. In his youth, he worked summers on several roads, earned a Bachelor of Science degree in Civil Engineering at Massa-



ALFRED E. PERLMAN, President of the New York Central since 1954.

chusetts Institute of Technology, then joined Northern Pacific as a draftsman.

After a year behind a drawing board, he decided that the way to get to the top was to start at the bottom, and he worked eight months as a track laborer. In 1925, he became Inspector of Icing Facilities at St. Paul, a year later was named Assistant Superintendent of Bridges and Buildings at Glendive, Mont. He was promoted to Roadmaster, served at several points until 1930 when NP sent him to Harvard Graduate School of Business Administration.

On his return, he became Roadmaster at Staples, Minn., and in 1934 was named an assistant on the staff of the Vice President of Operations. Later that year, the Reconstruction Finance Corporation borrowed him as consultant, to make studies of several ailing railroads, including the Rio Grande. He was then hired by the Burlington, where his first assignment was directing the rebuilding of flood-damaged lines in Colorado, Nebraska, and Kansas. In 1936, he joined the Rio Grande as Maintenance of Way Engineer; in 1941 was made Chief Engineer. In 1948 he became General Manager; in 1952, Executive Vice President.

### Diversification, Mergers Are "Musts"

Al Perlman still works long hours, still carries boots and denims in his office car. He is not over-awed by the problems of the Central or of the railroad industry "if we can be permitted as volume carriers to price our services competitively, based on costs." He also believes railroads must be permitted to diversify — "to give the shipping public maximum use of the nation's transportation plant."

Railroad mergers are a must, in his opinion, to permit further automation and efficiencies, "but shippers and investors must be permitted to share in the increased productivity that results."

And Al Perlman still loves railroading — "It's the greatest job in the world." ■





JOHN W. BARRIGER, President, Pittsburgh & Lake Erie.

## P&LE: Profits in Coal and Steel

CENTRAL'S entry into the busy Pittsburgh-Youngstown industrial district is via its important affiliate, the Pittsburgh & Lake Erie Railroad.

P&LE is relatively short (only 220 route miles, including 31 miles of trackage rights) but busy. Its main line from Youngstown to Pittsburgh is lined with factories and steel mills. No other railroad has such a concentration of heavy industry.

South of Pittsburgh, the important Youghiogheny Subdivision runs to Connellsville, Pa., where it connects with the Western Maryland Railway; and the Monongahela Subdivision goes to Brownsville, Pa., and connects with the Monongahela Railway. (These branches make up the Pittsburgh, McKeesport & Youghiogheny Railway, which is under lease to P&LE.)

Serving such a concentrated industrial complex, it's no wonder that P&LE ranks near the top in traffic density. Its revenue traffic of about 5½ million tons per mile of road in 1959 ranked seventh among 63 of the larger Class I railroads. On the 27½ mile stretch

between Aliquippa, Pa., and New Castle Junction, Pa., (a section shared with the B&O under a trackage rights agreement) density in 1957 totaled 20½ million revenue tons per mile. "There is very little mileage anywhere in the world that has a heavier density than this," says P&LE President John Barriger.

Almost from the start, P&LE has been under New York Central influence. William H. Vanderbilt, President of both the New York Central & Hudson River and the Lake Shore & Michigan Southern, subscribed for \$300,000 of P&LE stock when the road was still under construction in 1877. By the early 1880's he had bought enough additional stock to acquire working control of the P&LE for the Lake Shore. (The Lake Shore was absorbed by the NYC in 1914.) As of August 31, 1960, NYC owned 57.42 percent of the P&LE's 768,516 outstanding shares of common stock.

Unlike many railroads, P&LE has been a money-maker from the start. It has paid dividends each year since 1886—a total of nearly \$238 million over its corporate history. The current payout is at the rate of \$6.00 a year per share.

Like the New York Central, P&LE now has a massive physical improvement program in progress. Gateway Yard, its \$8½-million push-button yard near Youngstown has reduced the time required for cars to pass through that terminal by 40 percent. Mechanization of P&LE's M/W operations has brought a better standard of maintenance with fewer men and a reduced cost.

P&LE has also put CTC on large segments of its lines. This has permitted a substantial reduction in third and fourth track between Pittsburgh and Youngstown. Yard engines are already radioized; and car inspectors carry radio pack sets. Radio for road locomotives is planned for the future.

New York Central's Ten-Year Earnings Record, 1951-1960\*  
(Millions of Dollars)

	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960*
Freight Revs.	\$585.9	\$581.2	\$605.6	\$511.1	\$569.3	\$585.5	\$561.8	\$485.9	\$517.0	\$345.4
Pass. Revs.	122.8	124.3	117.1	106.6	100.7	98.6	88.5	78.2	69.7	45.9
All Other	98.2	101.4	102.6	91.0	92.7	96.3	91.3	94.8	102.4	65.8
Total Revs.	806.9	806.9	825.3	708.7	762.7	780.4	741.6	658.9	689.1	457.1
Net. Ry. Op. Inc.	40.0	49.8	63.2	33.0	73.9	58.3	29.5	11.8	24.0	10.4
Other Income	23.0	25.4	26.0	26.0	29.0	27.5	27.0	40.3	28.7	18.8
Total Income	63.0	75.2	89.2	59.0	102.9	85.8	56.5	52.1	52.7	29.2
Avail. for Fixed Chgs.	60.9	72.9	83.2	56.5	100.7	84.0	54.2	49.3	50.4	27.5
Fixed Chgs.	46.2	48.2	49.2	47.3	48.4	44.9	45.8	45.2	42.0	27.3
Net Inc.	14.7	24.7	34.0	9.2	52.3	39.1	8.4	4.1	8.4	.2
Earned Per Shr.	\$ 2.28	\$ 3.83	\$ 5.27	\$ 1.42	\$ 8.03	\$ 6.02	\$ 1.30	\$ .62	\$ 1.29	\$ .03
Dividends Declared						(C)	(B)			
Per Share	\$ .50	\$ .50	\$ 1.00	—	\$ 2.00	\$ 2.70	\$ 2.73	—	\$ .25	\$ .50
Ratios:										
Maintenance	33.1	34.6	33.9	31.6	28.8	28.4	29.8	28.1	29.4	30.5
Transportation	46.1	43.5	42.4	45.3	43.6	45.6	47.4	49.7	47.2	46.7
Total Operating	85.3	84.5	82.8	84.1	79.2	81.2	84.6	85.1	83.7	84.2
Freight Op. Ratio	75.1	73.8	71.8	74.3	69.3	70.7	74.1	77.2	77.4	78.7 (A)
Passenger Op. Ratio	118.1	117.1	119.2	113.8	114.0	119.4	125.2	112.2	107.2	104.8 (A)

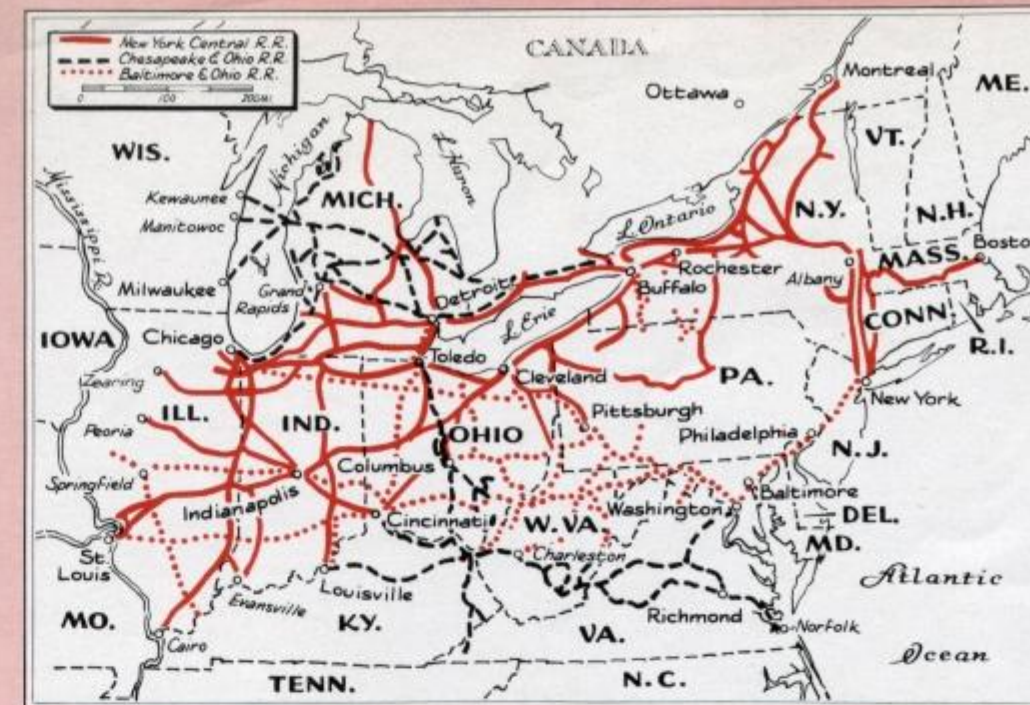
\*First eight months.

(A) First Seven Months

(B) Cash dividends equivalent to \$1.00 per share were paid in 1957. In addition, 250,393 shares of common and 83,182 shares of 2nd Preferred Stock of Reading Company, having a combined market value of \$10,487,876 were distributed as dividends on the basis of one share of Reading Common for each 25 shares of Central and one share of Reading Preferred

for each .65 shares of Central. Cash (\$752,263) was paid in lieu of fractional shares.

(C) Cash dividends equivalent to \$1.50 per share were paid in 1956. In addition, 286,565 shares of United States Freight Company stock, having a market value of \$7,221,438 were distributed as a dividend on the basis of one share of U.S. Freight stock for each 21 shares of Central. Cash (\$581,172) was paid in lieu of fractional shares.



MERGER involving B&O would lead to complex including B&O-controlled roads, WM, Reading and CNJ. Central, B&O are now studying merger. NYC wants to merge with B&O alone, or with both B&O and C&O. (Map, courtesy of the New York Times.)

## Central Sets Merger Signals

Currently studying merger with the Baltimore & Ohio, NYC hopes for later tie with C&O, too

NEW YORK CENTRAL has its signals set for a merger. It is currently undertaking joint studies with the Baltimore & Ohio Railroad, had earlier discussions with both B&O and the Chesapeake & Ohio Railway looking toward a three-way union.

Meantime, both Central and C&O are wooing B&O stockholders in a contest for control of B&O.

The "marriage," whether it winds up with two partners, or as a multiple one with three partners, must finally have the blessing of the Interstate Commerce Commission.

In September, both C&O and Central announced extensions of their offers for B&O stock, C&O's now to expire Nov. 30, Central's Dec. 14. It was after C&O announced extension of its offer that B&O's President Howard Simpson sent a letter to B&O stockholders saying that "further discussions have shown conclusively that the C&O is no more interested in immediate merger with the B&O than in the three-way merger."

### President's View of Merger's Advantages

For the Central, Alfred E. Perlman, President, said:

"We feel that until the ultimate objective of a three-way merger can be achieved, it is important that immediate steps be taken to bring about the savings and the improvements in service which we believe possible through an affiliation of Central and B&O.

"Control of B&O by C&O could well be detrimental to the interests of the New York Central, its customers, employees and owners. Control of the B&O by C&O might result in substantial re-routing of present B&O traffic away from the Central, which would be extremely detrimental to us.

"A merger of Central and B&O would keep valuable traffic on our combined system to the benefit of our customers and owners. A merger of properties, as I have said, would allow us to make substantial savings and economies by eliminating excess capacity of duplicate lines and facilities."

While no official estimate of savings can be made until studies are completed, three or four months hence, it is obvious that with some 1200 duplicating miles of trackage and 81 common points of service, the figure can be a substantial one.

C&O's President Walter J. Tuohy has rejected a three-way merger at this time. C&O says it wants affiliation and merger first with B&O, and that consideration could be given then to getting together with Central.

Mr. Perlman has made no secret of the fact that Central's move

toward union with B&O alone or with the C&O included is a defensive one. He believes another giant rail system may well be in the making in the East. The Pennsylvania, which alone exceeds Central in annual gross revenues, is seen in a position to consolidate with roads it already controls, principally the Norfolk & Western, which not so long ago merged with the Virginian, strengthening N&W's position in the Virginia and West Virginia coal territory.

More recently, N&W proposed to merge with the Nickel Plate. Another railroad in the Pennsy orbit, which it controls, is Wabash, a profitable carrier in the eastern and mid-western territories.

A combination including B&O would lead to a second big railroad complex in the East by bringing into the system the roads controlled by B&O, including Western Maryland, Reading, and Central Railroad of New Jersey.

Central's offer to B&O's stockholders—made following C&O's—was 1½ shares of its capital stock plus \$9 cash for each B&O common share. It made no offer for B&O preferred. Fifty percent of B&O stock is sought, "to permit ultimate participation by C&O."

C&O offered one of its common shares for each one and three-quarters shares of B&O common, and one C&O common for each B&O preferred share. (Both classes of B&O stock are voting shares.) C&O's offer is for 80 percent of B&O stock—80 percent ownership permits the filing of consolidated income tax returns.

B&O has outstanding 599,998 shares of preferred and 2,546,951 shares of common.

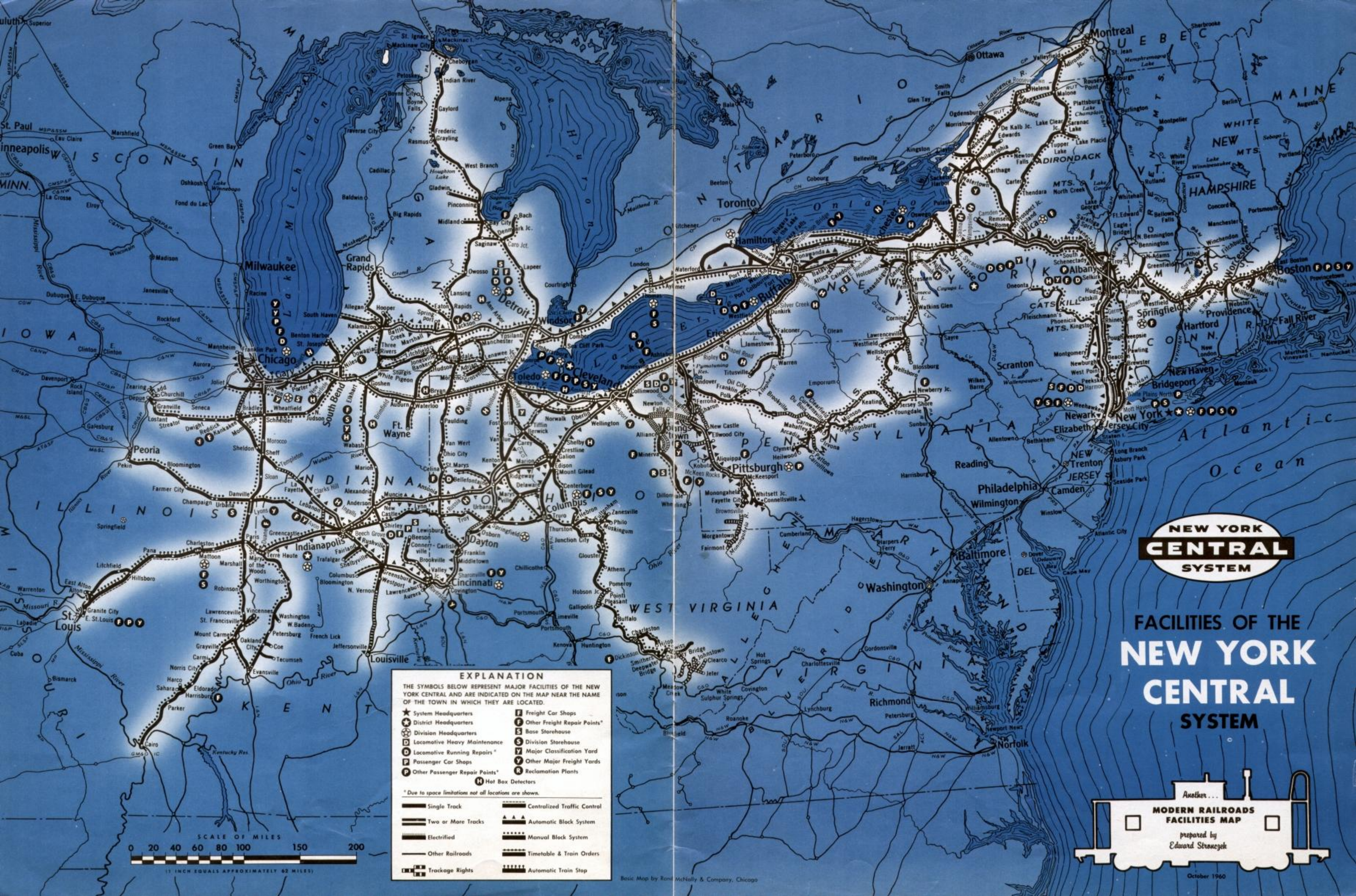
Financial observers have said they believed neither Central nor C&O can wind up with more than substantial minority interests in B&O, with the issue of control a stalemate.

In any event, ICC must finally decide what is in the public interest both as to financial interest—whether majority or minority—and as to merger, whether two-way or three-way.

Based on 1959 year-end statistics, here's the way the three railroads stack up in route-miles, gross revenues, and net income:

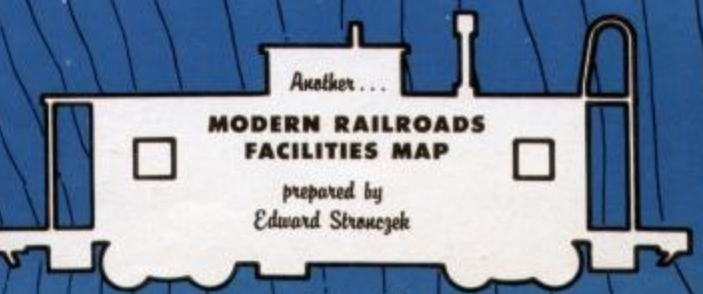
	Miles Operated	Gross Revs. Millions	Net Inc. Millions
New York Central	10,300	\$659.1	\$ 8.4
Baltimore & Ohio	5,900	395.0	14.8
Chesapeake & Ohio	5,100	347.5	45.6





NEW YORK  
**CENTRAL**  
SYSTEM

FACILITIES OF THE  
**NEW YORK  
CENTRAL**  
SYSTEM



**EXPLANATION**

THE SYMBOLS BELOW REPRESENT MAJOR FACILITIES OF THE NEW YORK CENTRAL AND ARE INDICATED ON THE MAP NEAR THE NAME OF THE TOWN IN WHICH THEY ARE LOCATED.

★ System Headquarters	F Freight Car Shops
☆ District Headquarters	F Other Freight Repair Points*
⊕ Division Headquarters	S Base Storehouse
D Locomotive Heavy Maintenance	S Division Storehouse
D Locomotive Running Repairs*	Y Major Classification Yard
P Passenger Car Shops	Y Other Major Freight Yards
P Other Passenger Repair Points*	R Reclamation Plants
H Hot Box Detectors	

\* Due to space limitations not all locations are shown.

— Single Track	— Centralized Traffic Control
— Two or More Tracks	— Automatic Block System
— Electrified	— Manual Block System
— Other Railroads	— Timetable & Train Orders
— Trackage Rights	— Automatic Train Stop

Basic Map by Rand McNally & Company, Chicago

October 1960



# Toward "A Management Second to None"

Through "Management Planning," NYC strives to upbuild the quality of its leadership

**M**ANAGEMENT PLANNING" is the name Central has given to a function that would probably be called "Personnel" on most railroads.

But this difference in name is no mere whim. It underscores a philosophy that goes well beyond common practice on most railroads — and in most other industries, for that matter.

"Just as we work to improve our operations or sales, so we recognize that the improvement of management — the development of people — is an important part of our job," says J. B. Joynt, who is Central's Vice President, Management Planning.

To "spearhead" this continuous drive for higher-quality managers is the basic job of Mr. Joynt's Management Planning Department. Management Planning has two main objectives: to show managers in all departments how to carry out their own responsibilities in this field; and to develop and apply new approaches and new techniques in management development.

Today, all major NYC departments have — or are setting up — comprehensive management programs. They cover such areas as selection, orientation and training; annual clarification of responsibilities; performance appraisals of supervisors, management employees and officers; maintaining management succession planning tables; salary administration; organization planning; systems and procedures; personnel services, and so on.

In the earlier stages of this work Management Planning participated actively with departmental managers in the improvement of organization structures and in setting up and carrying out training programs and other functions. Today, the department people themselves are assuming this role. Management Planning serves as a consultant; but now concentrates on introducing new approaches, new types of programs.

Very briefly, here are some of the ways Central is seeking to build a stronger, more effective management team:

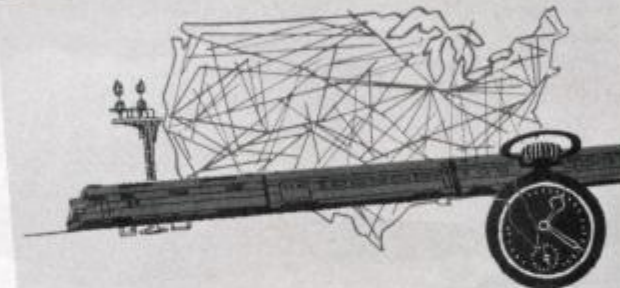
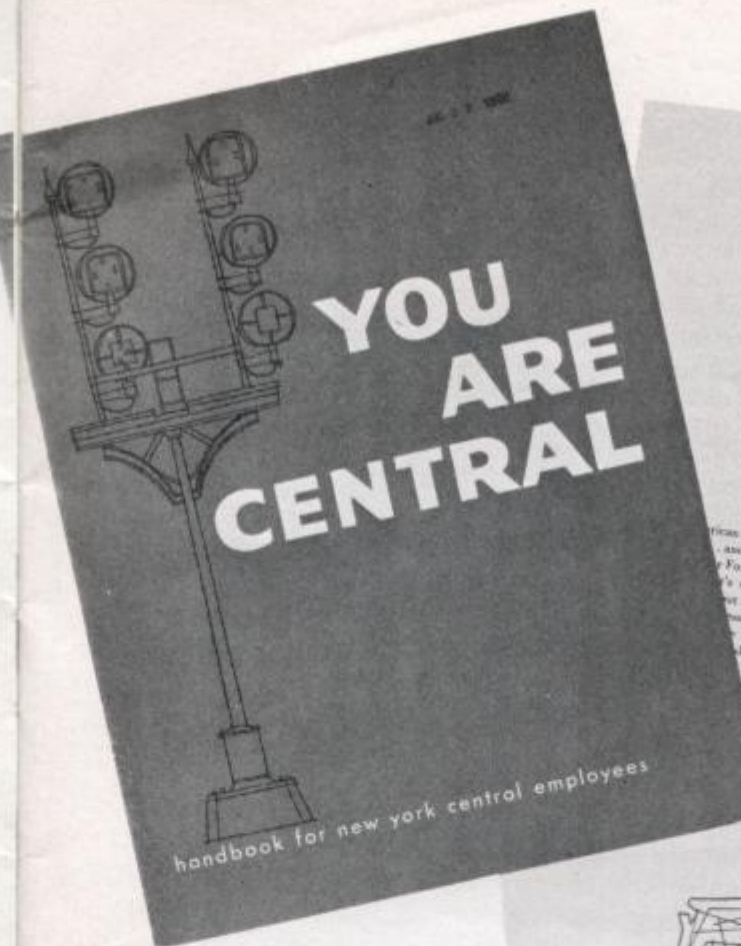
**Organization Planning:** The 1956 reorganization was the first major step in this program. It was designed to clarify responsibilities, broaden the managerial responsibility at the lower levels, and to place decision-making closer to where the work was being done. Refinements are continually being made to enable Central to still better utilize its management talent.

**Training:** One of the biggest single tasks of Management Planning has been to set up and coordinate the training activities in major departments. "Railroading is a lifelong learning process," Mr. Joynt declares. "Anyone in it can benefit from some kind of training."

Actually five types of training are being given — orientation of new, transferred or promoted employees; job training; supervisory

CONTINUED

SUPERVISORS learn how to teach. Training is big job of Management Planning Department; followups, refresher courses are part of program.



## EVERY THIRTY MINUTES

Look at your watch. In the time it will take the minute hand to travel half-way around the dial...

- ...Six hundred freight and passenger trains will have pulled out of cities all over America.
- ...Six hundred more will have completed their runs.
- ...The railroads will have clicked off 1,628,000 passenger miles... 35,900,000 ton miles.
- ...They will have paid out \$350,000 in wages.
- ...They will have spent \$76,000 improving plant and equipment... \$93,000 for fuel, materials, and supplies... \$62,000 in taxes.

All this will take place in the next thirty minutes. And, in the next year, the railroads will carry over one-third of the nation's passenger traffic... half of its freight traffic... four-fifths of its inter-city mail.

## BACKTRACKING ON THE CENTRAL

When the first Central train chugged out of the station, it was a sight to behold. The engine, with its big wheels and tall smokestack, was a marvel of the age. It carried passengers and freight, and it was the lifeblood of the Central.

When you came to work on the New York Central, you inherited a great tradition. You were part of a team that had built a great company. You were part of a team that had built a great country.

When you came to work on the New York Central, you inherited a great tradition. You were part of a team that had built a great company. You were part of a team that had built a great country.

## CLEAR BOARD OR RED?

You're naturally interested in what the future may hold for you on the Central — a clear board, a red board, or a board that's a mix of the two. It's up to you to decide.

Your future depends on two things... how well the Central's going to do, and how well you're going to do with it.

Central looks good but by no means perfect. We have excellent prospects... we also have tough problems.

For one thing, we've got smart, aggressive competition... trucks, pipelines, buses, barges, airplanes... and there isn't a railroad in the country that hasn't felt their challenge.

For another, we have steeply rising costs.

What's more, in 1956 our shareholders actually received a smaller return on their investment than they did in 1950.

## WHAT WE ARE

The Central is, of course, far more than equipment... routes... schedules... organization... assets... tradition. The Central is a living force in the communities where it operates and the country it serves. What gives it life... and makes the whole greater than the sum of all its parts... is its people of whom you are now one.

It's the engineer and the fireman whose quick thinking saved lives. It's the train crew who, for many years, have enabled a boy from Iowa to keep his independence and self-respect by helping him get to and from work.

It's the thousands of you who every day do the less spectacular but equally essential things that keep this railroad running. It's each of you whose initiative... reliability... customer courtesy... pride in your job... are vital to our ability to provide:

For our customers, both passenger and freight, the best possible service at the lowest possible cost.

For you, our employees, fair wages, security, and satisfying careers.

For our shareholders, an adequate return on the investment that equips us with the tools and plant we need to operate.

## WORKING ON THE CENTRAL

If you're new on the Central, you must certainly want to know: "What kind of a place is this to work?"

Ask an old hand and he may say: "Oh, it's not so bad as you go," or: "It's a pretty fair thing."

But ask him then how long he's been with the Central and you'll probably find out he's liked it well enough to stay over twenty-five years.

More than 54,000 Central men and women boast this long service record.

Handbook for Central employees is one of the many activities of Personnel Services branch of Management Planning Department.





COLLEGE men recruited by NYC go through training program that challenges as well as informs. Here trainee studies computer operation.

### Employee Relations . . . "Firmness with Fairness"

In a time of far-reaching change, Central's Employee Relations Department has a vital job to do.

This department, which has jurisdiction over labor relations departments on all districts, is headed by Leo B. Fee, Vice President, Employee Relations. It maintains all basic employee service records, and administers employee pension, insurance and welfare plans.

One of its biggest jobs is keeping tabs on the 160 different contracts that Central has with some 28 different labor organizations. The importance of this work is highlighted by the fact that 58 cents out of every NYC revenue dollar is paid out in wages.

"We believe in living up to our contracts," declares Mr. Fee. "We try to make sure that everyone understands them so that issues can be settled on the local level. By 'putting out fires' at the grass roots you can have better relations all around."

Right now, NYC is preparing a handbook for those who must conduct investigations. "Investigations are becoming more and more technical — they often hinge now on matters of procedure and rights," Mr. Fee explains. The new book will be advisory only; but it will help the supervisor use proper procedures in conducting an investigation.

Recently, Central with the cooperation of several of the railroad unions, began using a special time-slip form to expedite the handling of claims for additional time under its contracts for road and yard employees. The form provides for complete information to be supplied concerning the claim.

William Chase, Director of Labor Relations, sums up NYC's policy: "firmness with fairness." He adds, "We are going through tremendous changes. They are tough on people. It's our job to make sure everyone thoroughly understands the necessity for these changes."

As one move toward that understanding, President Perlman and his top officers get together at least once a year with 70 to 80 general chairmen in informal, off-the-record, no-holds-barred sessions in Cleveland and New York. At these meetings, Mr. Perlman outlines NYC's situation and plans for the coming year, and then opens the meeting for any and all questions.

### TOWARD BETTER MANAGEMENT CONTINUED

and pre-supervisory training; the College-Management trainee program; and management development. Job training covers by far the largest number of employees.

A very important phase of each training program is to evaluate the results and follow up on them, as required by "refresher" courses. Depending on the scope of the training program, it may be carried out by a division, a district, or by system headquarters.

When it comes to training, "The management organization is our faculty," as Mr. Joynt puts it. "Every manager is the trainer and developer of his people."

Many of tomorrow's NYC managers will be college graduates. This year Central recruited 160 men with college degrees — 71 direct from colleges. Each trainee began his formal training program in the department to which he was assigned. Subsequently he was rotated to other departments with similar work.

Central's college trainee courses are designed to challenge as well as inform. Instead of spending their time "just watching" the trainees are given special assignments through which they can "earn their salt." And — most important — they are assigned training supervisors who take a real interest in them and who are required to follow their work closely and report on their progress.

**Management Development:** Central believes that the most important development of a man takes place on the job; it emphasizes management development as an important responsibility of every manager. But it also sends men through AMA management courses and to specialized management-transportation courses at Columbia, Stanford, Harvard Business School and Northwestern University.

To better evaluate the progress its supervisors are making, each department now has a "management appraisal" program. Every supervisor is appraised by his superior and two others of equal rank who work closely with him or know his work well. The superior then discusses with the "appraisee" his strong and weak points and his developmental needs. This appraisal system is used all the way "up the ladder."

Every manager, too, is now required to prepare, annually, management succession planning tables for the management and supervisory positions under him. Every six months, supervisors and managers also identify the "promotable" people under them. Thus, men having potential are identified on a continuous basis.

**Systems and Procedures:** Major NYC departments now have their own systems and procedures groups; but because so much of this work crosses departmental lines, a small S&P group in Management Planning helps coordinate it, including the long-range master plan for data processing.

Central's "Supervisors Work Improvement Program" (SWIP) has attracted much interest both from within and outside the railroad industry. Engineered time values for all clerical operations were developed; when the program is completed they will have been applied to some 8000 clerical positions. About 400 supervisors will have been trained in various phases of work analysis. The program has already greatly increased the effectiveness of clerical workers and made a big saving in clerical positions.

**Personnel Services:** This section of Management Planning is concerned with the more usual types of personnel work — the hiring of employees; interviews, aptitude tests and so on. It also publishes *The Headlight*, Central's extremely well-written employee magazine. Its "out-placement" service makes a determined effort to relocate employees affected by force reductions. If they can't be placed within NYC, Personnel Services contacts outside firms on their behalf. "Exit interviews" are conducted whenever possible with management people who resign from the company.

○ ○ ○  
"Management Planning" has brought to the NYC a whole new set of "tools," some of which have seldom, if ever, been used on a railroad before. But, cautions Mr. Joynt, "It's not what's done that counts, but the way it's done and the thinking process that goes into it. The fact that our management people are using these 'tools' effectively is evidence that they're doing a good job." ■

# Realism in Real Estate

Central's aggressive department boosts sales, rent income; steps up industrial development

**E**ARLY IN 1957, Walter R. Grant, Vice President-Finance, picked up his phone and called a colleague — James O. Boisi — then Director of Real Estate. The conversation went like this:

"Jim, you've indicated you'll produce \$9 million to \$10 million in cash this year from real estate sales. How long do you think you can generate this much cash from real estate inventories?"

The reply: "Three years."

This estimate proved sound. And the story goes that late in 1959 Mr. Grant again phoned Mr. Boisi — by then Vice President-Real Estate — asked the same question, received the same answer. In 1959, real estate sales produced \$9.8 million, are expected to approximate this amount in 1960, and continue at roughly this rate "for the foreseeable future."

Mr. Boisi feels his prediction is conservative in the light of the railroad's rehabilitation program. Yard modernization, for example, and the discontinuance of obsolete yards, continues to release more land for real estate inventories.

These solid contributions to Central's cash position are a testimony to Mr. Boisi's realistic philosophy about real estate: "If you can't use it, rent it. If it doesn't produce an adequate return, sell it."

On another front — under the aggressive leadership of Mr. Boisi — rentals from the substantial real estate holdings of NYC have been increased drastically, and continue to increase, further bolstering "other income" so essential to the coverage of Central's heavy annual fixed charges.

Rent income, less expenses, has gone up progressively since 1954. In that year it approximated \$8.7 million; in 1958, it was \$11.1 million; in 1959, \$13.7 million.

A third phase of Central's three-pronged attack on its profit potential from real estate operations is what Mr. Boisi terms "Operation Turnkey." This operation is designed to step up industrial development along Central tracks, speed increases in loadings.

Here are highlights of interesting chapters in Central's real estate development.

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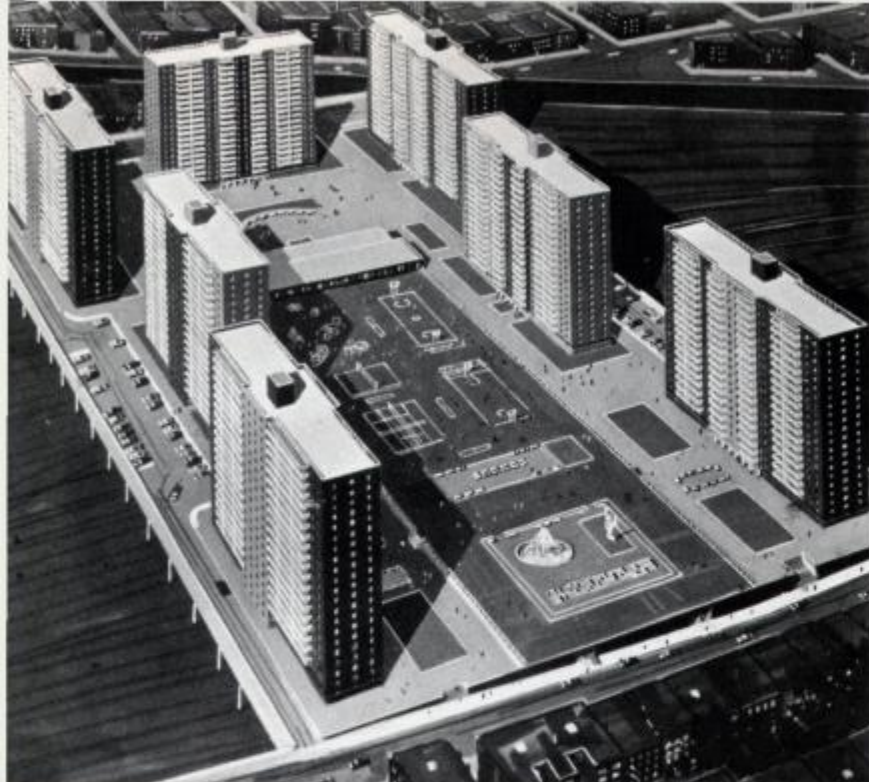


PAN-AM BUILDING, to be erected over tracks at Grand Central Terminal, will be world's largest commercial office building. It will boost rent income from this property \$1.1 million a year.

PARK AVENUE, New York, south of 56th St., looked like this in 1905, before NYC electrified its lines and covered the tracks. Income from properties here, now a business district, is rising.







HUGE middle income apartment house and shopping center development will be built over Central's Mott Haven coach yard in the Bronx. The project will bring NYC more than \$750,000 in annual rentals.

## REALISM IN REAL ESTATE CONTINUED

tral's contemporary real estate history, written by the road's new management:

The railroad's leases totaled nearly 18,000, excluding its Park Avenue properties. Rentals ranged from \$1 a year upwards. Roughly 7000 were renegotiated. Another 11,000 had not expired, were considered to be returning fair rentals, or were slated for sale. As a result of the first review, annual rentals were boosted by some \$1.3 million.

(A curious paradox was discovered during the check of leases; in many municipalities, Central was receiving \$1 a year rent for parking on properties that were taxed for hundreds of dollars. In these cases, more realistic rentals—or more realistic taxes—were the aim of Mr. Boisi's negotiators.)

In 1956, Park Avenue properties owned by the Central, excluding hotel operations, returned \$2.4 million net annually after real estate taxes. In 1960 this income will be about \$4.5 million. By 1966, when various new buildings are completed, this figure will be an estimated \$6,250,000.

### More Efficient Use of Headquarters Space

At 466 Lexington Avenue, the company's operational headquarters, Central's office space and personnel were re-assigned more efficiently, so that four floors could be leased to The Reuben H. Donnelley Corp. At ground level, the New York Savings Bank occupies quarters replacing a cobblestone driveway leading to an old express office. Result: The cost of Central's occupancy of "466 Lex." was cut from approximately \$2.25 per square foot to less than 90 cents.

At the company's 230 Park Avenue building, the lease was renegotiated at more than double the former rental. (Central's executive offices are located at "230.")

In the redevelopment of Central's Park Avenue properties, which extend to 52nd Street, modern skyscrapers are replacing existing apartment houses, and Park Avenue is changing from a predominantly residential boulevard to a thoroughfare identified with many of the world's greatest business organizations. Central's income from these properties is climbing.

For example, air rights over the property just north of Grand Central Terminal were leased for a long term, and over the complex of tracks and platforms connected with the Terminal will rise the Pan-Am Building, biggest commercial office building in the world. On completion—late in 1962, or in 1963—income from

this property will be boosted by more than \$1.1 million a year.

The 290 Park Avenue building was formerly an apartment house returning about \$100,000 a year. It will be occupied by Bankers Trust Co., earn some \$260,000 annually.

New York Central owns several hotels. Three—the Biltmore, Barclay and Park Lane—are owned and operated by Realty Hotels, Inc., a wholly-owned subsidiary. Since 1954, annual net income for the three has risen each year, and this operation has influenced a decision by Central management to take over management of the Roosevelt in four years and the Commodore in seven years at the expiration of current leases to outside operators. Another holding—the Waldorf-Astoria—is under a long-term lease. Gross revenues from all hotels reached \$10.4 million in 1959.

(Several valuable properties in the Grand Central area are the subject of a dispute between Central and the New Haven Railroad as to ownership and management, and the matter is now before the courts.)

### Air Rights Leases Boost Income

In May of this year, Central also announced it had leased the air rights over its 40-acre, 11-block-long yard at Mott Haven in the Bronx for the construction of Concourse Village—a huge, middle-income apartment house development and shopping center.

The project—sponsored by Amalgamated Meat Cutters and Butcher Workmen of North America—will bring more than \$750,000 in annual rentals to New York Central on completion, scheduled in four phases for early 1962, 1963, 1964, and 1965.

Searching for a way to turn an unproductive but heavily-taxed 20-block strip of West Side property to profitable use, Central also leased air rights over half of the strip. Above its tracks over a four-block stretch will rise the world's largest motel.

In addition, air rights over several more blocks have been leased for modern multi-story commercial buildings and other structures. (The 50-acre yards at 60th Street have air rights virtually as undeveloped as the Park Avenue properties were half a century ago, suggesting the extent to which their value can increase in years to come.)

Part of the cash from real estate sales has come from the disposal of passenger and freight stations—over 150 since 1957—for more than \$3 million. Stations were converted by new owners to offices, libraries, banks, and other commercial enterprises. In some, Central reserved adequate space for passenger facilities at nominal rents. In such locations, operating expenses obviously were drastically reduced.

A drive in 1958 to reduce real estate assessments resulted in the company's paying about \$1 million less a year on the basis of the challenged assessments. In addition, Central, after years of effort, finally won a reduction in special franchise taxes amounting to about \$1 million annually. A state law was also passed in New York providing a more realistic basis for taxing railroad properties.

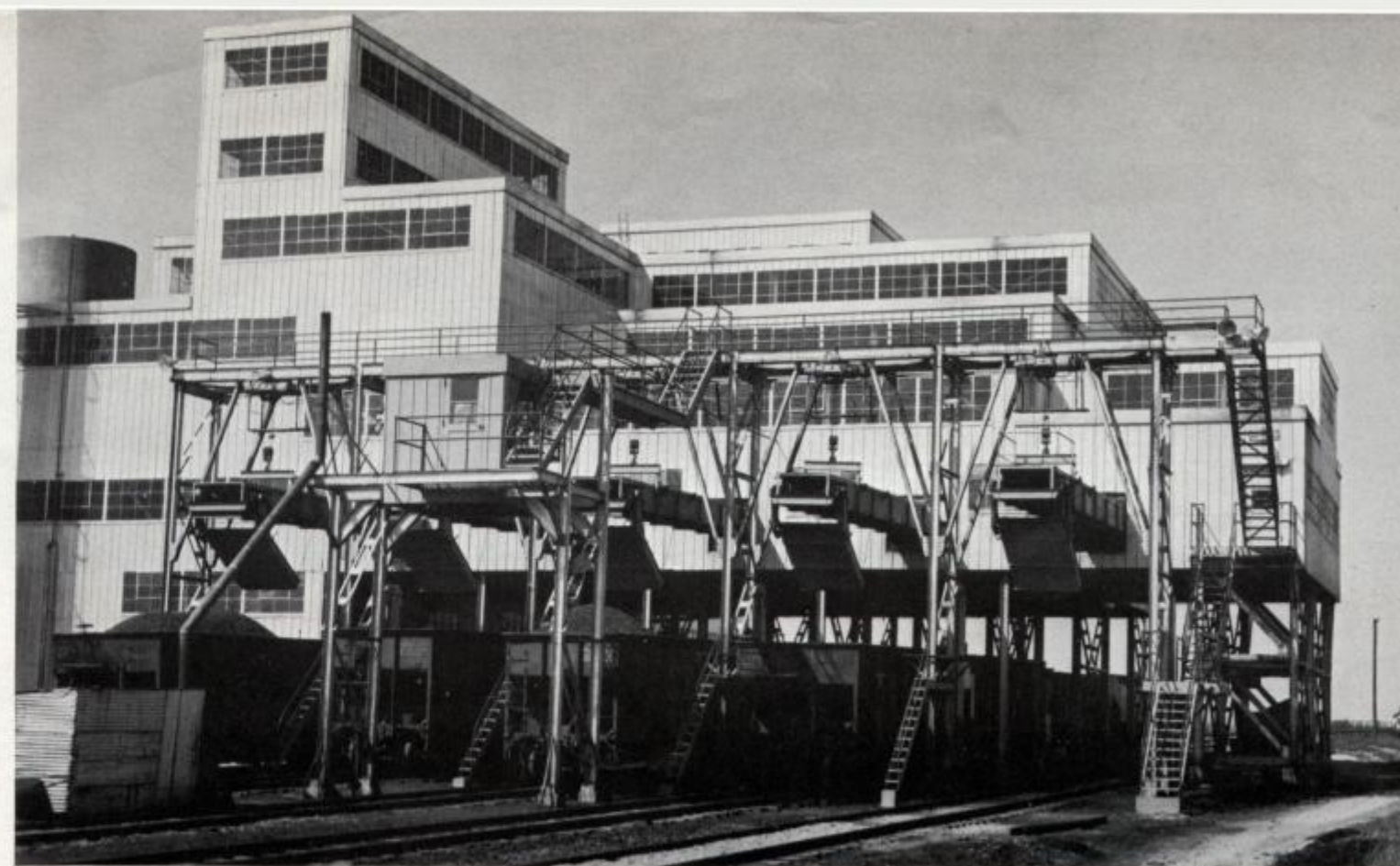
### New Opportunities for Freight Traffic

Under "Operation Turnkey," Mr. Boisi, with characteristic drive, hopes to help open traffic opportunities faster for the freight sales department. Recently his responsibility was broadened to include industrial development. As part of his added duties, Mr. Boisi would like to step up the services Central can make available to prospective "settlers."

"We can offer better market research to determine the kind of business that is natural for a given area. We can offer expert counsel on site locations. We can offer architectural and engineering advice; and we can find necessary financing for a prospective client if that's what is needed."

Mr. Boisi and his men recently completed three "Operations Turnkey," have numerous others in the making.

Typical of those completed is a Toledo transaction, where Central arranged for the purchase of land, construction of a building, its lease to an industry, and the interim and long-term financing for construction and acquisition of the building—all without the use of a single penny of New York Central funds. ■



FROM revenue standpoint, bituminous coal is by far the most important commodity carried by the Central. This is a mine at Hillery, Ill.

# "The Customer is the Boss"

New services, aggressive marketing-sales approach help NYC meet shippers' needs

## THE CUSTOMER IS THE BOSS.

That, in short, is the news for shippers on the "new" New York Central, the nation's third largest hauler of freight. The railroad will further orient its services, its equipment, its research, and its salesmen to the requirements of the buyers of freight transportation.

The new management already has taken long strides in this direction. It has plowed \$318 million into plant and equipment modernization. It has stepped up freight train schedules, established a containerized freight service—"Flexi-Van"—installed an efficient car-tracing bureau, initiated new pricing policies and techniques.

Under a recent organizational change, Central aims to make the strides longer and faster. In September, the company announced the creation of a Freight Marketing Department and a Freight Sales Department, each headed by a Vice-President, to plan and promote the freight transportation interests of the railroad. Arthur E. Baylis heads up Marketing; Wayne M. Hoffman, Sales.

Commenting on the new departments, which will work closely together, President Perlman said:

"Freight is the primary business of the New York Central, and we're trying to do everything possible to tailor it to the needs of shippers.

"In our Marketing Department will be vested the responsibilities for pricing, research, service, equipment supply, planning, and other tools so important to a modern transport system.

"The Freight Sales Department," he continued, "will have responsibility for sales policies and programs, and direction and administration of all sales efforts of the company."

In a further move to strengthen customer services, Central's management recently broadened the responsibilities of James O. Boisi, Vice President-Real Estate, to include industrial development. As part of his added duties, Mr. Boisi expects to step up the services Central can make available to prospective industrial

"settlers," quicken the tempo of plant development along Central's lines, where the rate of installations in 1959 was one a day.

"We're in a new era of ratemaking," comments Vice President Baylis. "On the Central we've centralized our pricing, our market research, and our cost-finding, to produce a better economic package for our customers."

Recently, NYC consolidated into a single bureau at New York and one sub-bureau at Chicago, the rate offices formerly maintained at Boston, Chicago, Cincinnati, Cleveland, Detroit and New York. These new offices handle all system rate matters.

For faster, more efficient service to shippers, related commodities were grouped for specialized handling. Each group has an administrative chief with his own staff of analysts and clerks. Further specialization was achieved by setting up groups for coal, coke and iron ore, transit, Flexi-Van and merchandise freight. Other specialized groups are now being formed.

Constant liaison is maintained between customers and the bureaus by contact men in the cities where regional offices were formerly located. "Actually," says Art Baylis, "our liaison men drum up rate problems. This is a rifle rather than a shotgun approach. I'd say that well over half of our work in New York comes to us directly from the customer. We'll be able to make several hundred individual rates every year outside those that have to be processed through various rate committees. We call this spot pricing."

A valuable new tool for better, faster pricing is Central's new costing techniques directed not only at individual shipments but at entire "product lines." (See article on Accounting.) The Marketing Department can now quickly determine whether business is profitable or unprofitable on a system average cost basis.

"If a rate is too low," says Mr. Baylis, "we can move to adjust it upwards. If it's unprofitable altogether, and nothing can be done about it, we don't waste time soliciting the business. (He cites perishables from the West, where present divisions of through

CONTINUED





FREIGHT train rolls past Bear Mountain Bridge. NYC continually boosts schedule speeds to meet shippers' needs.

#### "THE CUSTOMER IS THE BOSS" CONTINUED

revenues often produce a loss for Central.) If our profit margin is adequate, and we find that competitors, including private trucks, are handling most of the business, we can adjust the rate downward to get the business. If we find the rate is close to the profit

line, we can make further studies to trace routings and pinpoint actual costs. Obviously, costs aren't the same on branch lines as on main lines. Return loads may be a factor; switching another."

Further projecting the "customer-is-boss" philosophy, Wayne Hoffman, the new head of Freight Sales, comments: "We must, within our own organization, become acutely aware of shippers'

needs and orient ourselves to them. When a customer has a problem, we must solve it as transportation experts, not simply as railroad men."

Central can certainly be said to have already delivered some attractive samples of the economic package it is developing for its shippers. Service-wise, in the year 1960 alone, it:

Slashed by five hours its freight schedules between New England and Chicago . . .

Inaugurated a new overnight freight service between the Pittsburgh steel-producing district and the Detroit area market . . .

Established, with the P&LE, a new fast freight service for shippers in Maryland and southern Pennsylvania to provide second-morning delivery of shipments to Toledo . . .

Initiated the "So' Westerner," an all-new thrice-weekly general freight and Flexi-Van train for fast service from St. Louis to New York, which became so popular it was put on a daily basis . . .

For Flexi-Van customers, also established new "hot" schedules for solid "Super-Van" trains, at near-passenger train speeds, between Chicago-St. Louis and New York-Boston . . .

Under Central's new set-up for forecasting equipment and schedule needs, shippers may expect further service improvements.

On another front, Central is pressing at the Interstate Commerce Commission for permission to improve its merchandise service. It has asked to revise the "key point" system under which its trucking subsidiary performs substituted services for the railroad. In essence, the proposal is to reduce rail handling and permit more extensive and efficient handling by the truck line.

Central's carloading pattern in 1959 looked like this: local traffic, 21.4 percent of total; originated but not terminated, 26.9 percent; received and terminated, 36.5 percent; bridge traffic, 15.2 percent. In that year, local carload traffic produced an average of \$212 per car; overhead traffic, \$116; originated and forwarded traffic, \$150; and traffic received and terminated, \$163. Its average haul was 241 miles, which on its face spells high terminal costs for Central and susceptibility to highway competition.

Central also has tough competition on all sides from subsidized water carriers, including those on the comparatively new St. Lawrence Seaway. The railroad has met the Seaway threat to its export business by slashing rates some 25 percent ("We held about two-thirds of our traffic," says Art Baylis.)

From a revenue standpoint, bituminous coal is by far the most important individual commodity handled by NYC. "Products of mines" including coal and "manufactures and miscellaneous," including forwarder freight, usually account for 85 to 90 percent of total freight tonnage and some 80 percent of freight revenues.

Autos, trucks, vehicle parts, iron and steel products, paper, food products, fresh meats, chemicals, iron ore, and scrap iron and steel are all important revenue producers. However, since two-thirds of Central's soft coal business is received from connections, the road has not been able to originate more than approximately 48 percent (in 1959) of its carloadings, although the percentage has been creeping up.

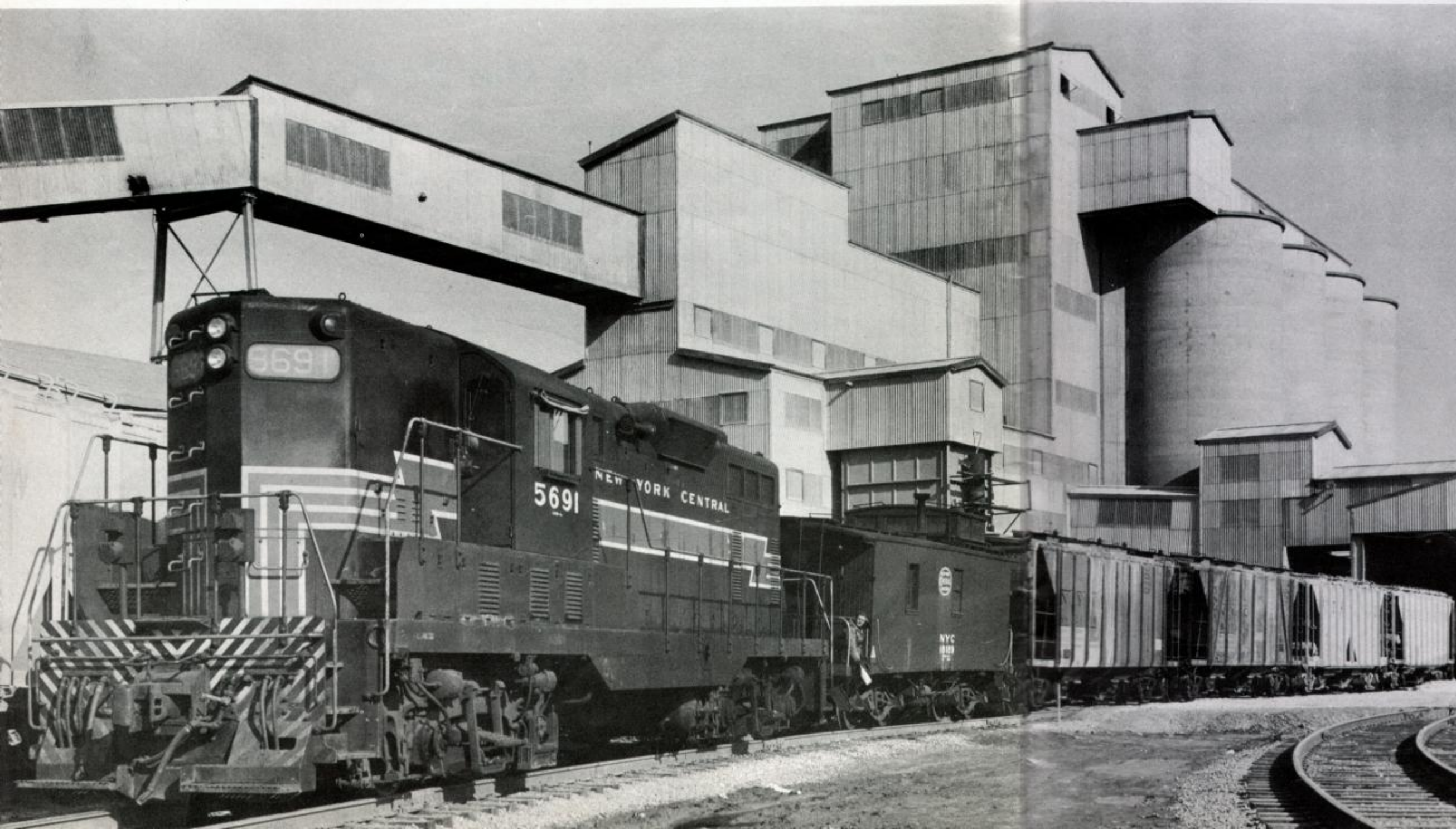
#### What Is Effect on Revenues, Profits?

Will Central's new marketing, pricing, and sales approach pay off in increased revenues? There is solid evidence that it already has. Its new containerized service for miscellaneous freight (see Flexi-Van story), started in the spring of 1958, is in big demand. Revenues and profits are rocketing. Central expects to gross \$30 to \$35 million from Flexi-Van sales next year. An interesting aspect of this development is that Flexi-Van is not only new business, largely recovered from the highway, but that it is virtually all "local" business — both originated and terminated by Central.

To a man, Central's executive team firmly believe that railroads should be permitted to diversify into other forms of transportation.

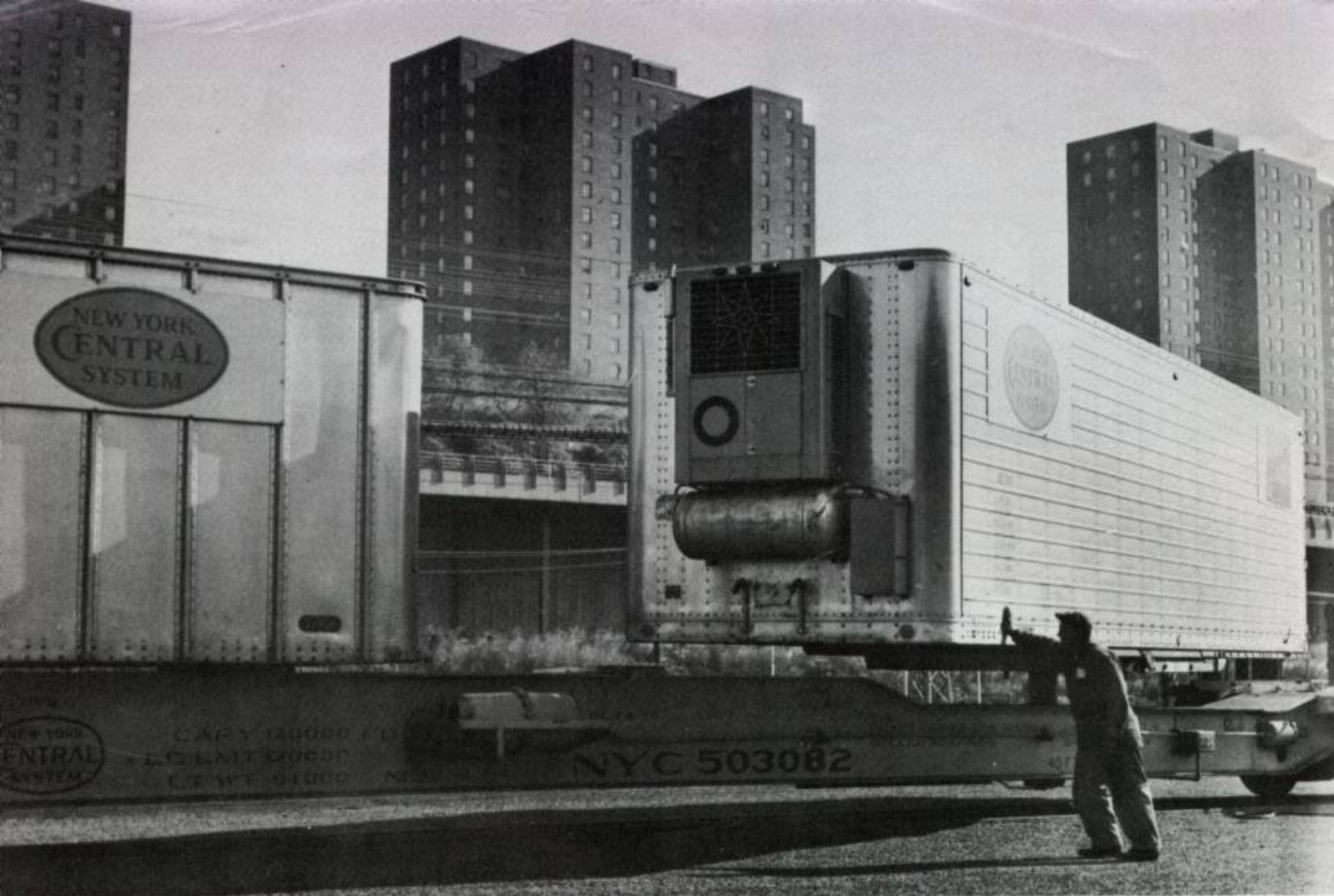
Late in 1959, Central agreed to acquire \$5 million of 5½ percent convertible notes of Flying Tiger Line, Inc., proceeds of which will be used by Flying Tiger in 1961 to augment its fleet of prop-jet air freighters. On that occasion, Central's Perlman commented:

"We believe the public interest requires the efficient use of all modes of transport, including air. Furthermore, we believe the air freight business to be complementary to and not directly competitive with railroad traffic. Flying Tiger is the largest all-freight air carrier in the world and has been a pioneer in the development of this mode of transport. We look forward to the increased utilization of all modes so that the shipping public may receive maximum benefit from the nation's transportation plant."



MORTON SALT CO. plant near Cleveland is one of 298 new industries that located on NYC during last year.





FLEXI-VAN container is swung onto its special rail car at High Bridge Yard, in the Bronx. This service is expected to gross \$30 million next year.

## Flexi-Van: Central's Brightest Star

Containers should gross \$30 million next year; they're highly profitable, too

**F**LEXI-VAN — New York Central's special brand of piggyback service — is the company's brightest business prospect.

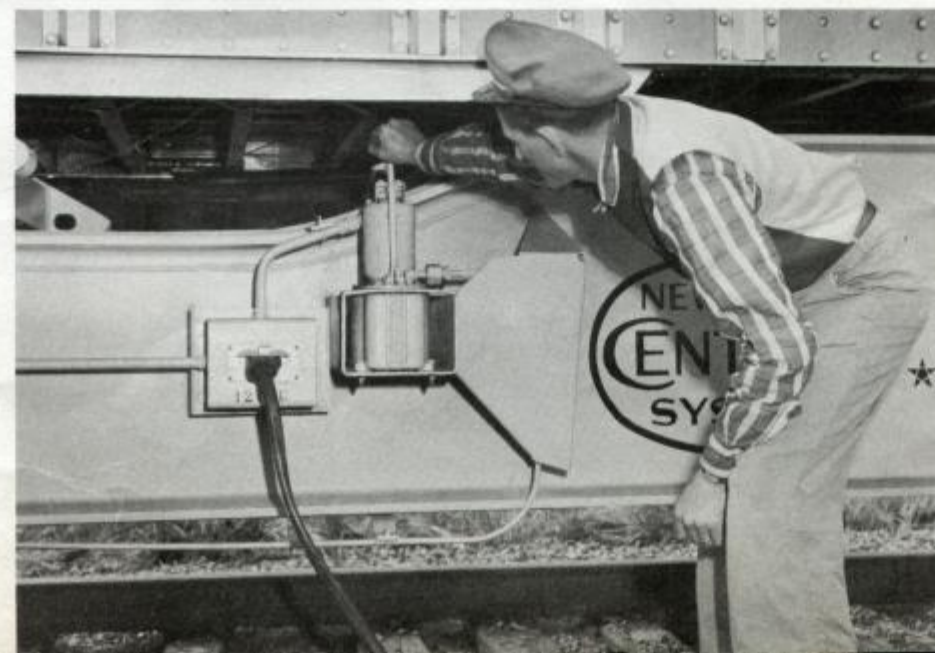
Revenues of \$30 million to \$35 million in 1961 are seen for Flexi-Van by Wayne M. Hoffman, Vice President Freight Sales of the railroad and Chairman of the road's trucking subsidiary, New York Central Transport Company.

Envisioning a normal expansion in equipment and traffic growth at present rates, Mr. Hoffman can see 10,000 to 12,000 vans handled per month, grossing approximately \$250 per van.

Flexi-Van's growth since its initiation on April 16, 1958, has been spectacular. Thirty-one vans were handled that first month. By the year-end, 4873 vans had been hauled (2157 in December). January opened the new year with 3167 vans; for all of 1959, the total was 23,338. In August of 1960, the van count exceeded 4100, and revenues were over \$1.2 million. (Central hit its first million-dollar month in June, when Flexi-Van grossed \$1.1 million.)

Does Central, with an admittedly large investment in highly specialized equipment, make money on Flexi-Van? The answer is "yes." The road's management, with iron-fisted control of costs in

ELEVATOR-TURNTABLE on rail car, operated electrically from delivering or receiving truck tractor, receives container. For transfer to or from bogies, container is raised, swung around 90 deg from car.



all segments of its business, knows to the penny what it brings down to net. For competitive reasons, it does not disclose these profits, but this is how Flexi-Van stacks up with boxcar operations:

A boxcar costs approximately \$10,000. The specialized Flexi-Van flatcar with two turntables costs about \$15,000. Two vans cost \$8200. With bogies (wheel assemblies) for the vans, total unit cost of Flexi-Van equipment is pushed up around \$27,000. That's just over two and a half times the investment in a boxcar.

### Big Investment—But More Mileage, Bigger Loads

But Flexi-Van flats make six turnarounds a month, and their average haul is over 800 miles compared with 247 for boxcars. While this is using up equipment faster, gross earnings are substantially larger. It's rare that a boxcar earns much over \$200 in revenue per trip. A Flexi-Van flat, loaded with two vans, as it almost invariably is, brings in over \$550. That adds up, on the basis of six trips a month, to a gross of some \$3300 compared with \$400 for boxcars making two trips a month.

"We count Flexi-Van freight virtually 100 percent newly created business — that is, recovered from highway haulers including private trucks," says Roy Milbourne, Director of Flexi-Van Sales. "It's true that forwarder freight now moving in vans was formerly in our boxcars but our margin of profit is much improved."

Central's Flexi-Van service is performed under Plans II, III, IV, and V, although no use has been made as yet of Plan IV. Plan II, of course, is rail-billed freight with the railroad performing all of the service, including pickup and delivery. PU&D is handled by New York Central Transport Co.

Under Plans III and IV, terminal-to-terminal rates are charged shippers who furnish, under Plan III, their own vans or, under

### Everybody Wants on the "Van-Wagon"

Flexi-Van equipment is in constant demand on the Central. Shippers like NYC's brand of piggyback. Typical of their comments about this service are these:

"We like the service, and what's more important, our customers like it," says W. S. Carter, Director Transportation, Syracuse China Corp., a division of Onondaga Pottery Co., Syracuse, N.Y.

"Very little bracing or dunnage is required in supporting Flexi-Van loads of chinaware, which in itself is a fragile product. The packages seem to receive a cushion ride and arrive at customers' platforms without damage or becoming scratched or defaced in any form — all of which is most important in today's market."

Says Walter Kaser, Traffic Manager, Duffy-Mott Co., Inc., world's largest producer of apple products sold at retail: "When a customer advertises a sale of applesauce, he's got to know the goods will be there on time. Flexi-Van gives us on-schedule deliveries. And he doesn't want a lot of broken jars. Flexi-Van has a remarkably low damage factor. Those two pluses are why we're using Flexi-Van on so many of our shipments."

Other transportation users enthuse about the ultra-fast schedules of "Super-Van" trains (of solid Flexi-Van shipments). Morris Forgash, President of United States Freight Co., biggest forwarding system in the country, says:

"These new services are tremendous. Shipments in many cases arrive ahead of schedule."

And Tom Hope, General Traffic Manager, Montgomery Ward & Co., comments: "Since March, New York Central has run a precision service to the extent that we're able to take our Flexi-Van shipments from New York at our outbound dock in Chicago, transload them, and have the stuff distributed promptly to our branches."



FAST SERVICE with Flexi-Van auto carriers is winning back finished automobile traffic for Central. Despite the admittedly large investment in equipment, road finds its container service highly profitable.

Plan IV, both vans and flatcars, and perform or hire all their terminal services.

Central does not offer, and does not plan to offer, Plan I service under which common carrier truckers — railroad competitors — are the railroad's customers for the road-haul. Central does, however, have a Plan V service on Long Island with so-called "vicinity carriers" which have limited area rights. Plan V permits rail and motor carriers to perform combined services under joint rates and routes.

On October 15, Central also expanded Plan V services for hauling new automobiles via highway auto carriers aboard flatcars leased from North American Car Corp. The railroad also handles new autos in special Flexi-Van haulers from terminal to terminal, as well as shippers' dock to consignee's door on commodity rates.

### "Super-Vans" Serve Four Cities

Flexi-Van service was given added impetus when Central initiated new, solid "Super-Van" trains last spring between New York and Chicago on passenger train schedules. Recently, this service was extended to Boston and St. Louis. Vans are set on their wheels in terminal areas in time for delivery to customers' doors before the next business day begins.

Twenty Flexi-Van terminals virtually blanket the New York Central Railroad system. NYC Transport performs the terminal and PU&D services.

NYC now interchanges with the Milwaukee Road, Santa Fe, Burlington, MoPac, and L&N, is negotiating with several other carriers interested in Flexi-Van.

Central has also begun interchange with States Marine Lines, American President Lines, U.S. Lines, and Transamerican Steamship Co. Foreign freight shipments are going via Flexi-Van to Korea, Japan, North Africa, and North Europe.

(Central's containers are 35, 36 and 40 feet in length, and include end-door, side-door and open-top units, insulated and mechanically refrigerated vans, and auto racks.)

The road's management is convinced that side-loading of "boxes without wheels," i.e., "containerization" is the most efficient of all piggyback systems, and believes the most efficient side-loading system up to now is Flexi-Van. However, Central officials also emphasize that they want to go along with, or initiate, further technical improvements.

Currently, Central is looking into straddle and crane lifts that could load or unload any kind of boxes or trailers from the side, and will take delivery shortly of a new, improved Flexi-Van flatcar.

To keep up with the rapidly increasing Flexi-Van volume, Central will spend substantial amounts in 1961 to expand Flexi-Van terminals and equipment.





## Tight Control Cuts Passenger Deficit

CENTRAL believes that there is a good passenger potential between large population centers. Here, the Empire State Express nears Newark, N.Y.

### Tailoring service to a new market, NYC prunes unprofitable service, stations

IN 1957, the New York Central—long a proud name in the passenger business—chalked up a staggering deficit of \$52.3 million from passenger operations. By this year-end, the loss will be down to an estimated \$20 million.

Behind this drastic slash in deficits that were draining off freight profits is a story of realistic management appraisal of the future of the railroad passenger business, a determined drive to prune out unprofitable services and stations, and new, tight cost controls.

Central, in short, is tailoring its passenger services to new American travel habits. It has plans for improving commuter train equipment and for refurbishing equipment in intercity service. Its services will be kept at the best possible standards. But Central does not intend to operate trains that run hopelessly in the red.

Says Ernest C. Nickerson, Vice President—Passenger and Merchandise:

"We believe there's a good potential market between large centers of population. The question is, will regulatory policies and economics permit us to serve this market properly? By that I mean that when we take off local, money-losing services, we're often required to downgrade our through trains by adding more stops. This not only tends to discourage patronage but increases expenses of those trains."

Taking a hard look at the future, Mr. Nickerson continues: "To comment properly, let's first examine some of our competitive disadvantages. Railroads have long ceased to have a monopoly on the passenger business.

"Airlines are our chief competitor for long-haul passenger traffic. Big, high-capacity airports are essential to the jet age. Virtually all of these are publicly financed. Airports do not rely on their income from user charges, rentals, etc. to meet capital construction costs. These charges merely meet maintenance and operating costs. Also the airlines have the benefit of CAA air traffic control services and aviation weather reports. As a result of these aids, the commercial airlines can price their services below total air transport costs and can continue to expand their operations."

#### Highway Travel Exceeds Rail Plus Air Miles

The New York Central officer also observes that while airlines are the No. 1 competitor for long-haul business, travel on public highways far exceeds all trips by air and rail combined. And he makes the point that Federal and state expenditures for highway development have had far-reaching effects on railroad passenger services.

"Practically every state has its high-speed toll road," he says, "the financing of which is backed by the state advancing funds and/or guaranteeing the interest on at least a part of the bonds sold to raise funds for construction. In addition, the entire property is exempt from taxation."

He cites construction of the New York State Thruway which will finally cost over \$1 billion. In December of 1955 the Thruway Bridge across the Hudson River was opened to traffic and permitted through travel to and from the east river bank for the



"CENTURY" HOSTESS chats with passenger in new Sleepercoach, which offers privacy and convenience at low cost. Sleepercoaches on Century and New England States average 95 percent occupancy.

first time. In the year 1959, Central's intrastate passenger revenues in New York State, exclusive of all commutation and suburban revenues in the New York Metropolitan area were 50 percent less than they were in 1955—over \$7 million less.

Reviewing highlights of the progress made in reducing passenger losses, Mr. Nickerson said that in 1957 passenger train-miles operated totaled 26.5 million, but by the end of this year they will be down to 16.7 million. Currently pending "train-off" cases involve service between Cincinnati and Chicago, St. Lawrence Division service, trains between Cleveland and Indianapolis, two trains on the Boston and Albany, and service on the upper Harlem division, north of Pawling. Other services are under study.

Dining car losses were reduced from \$3.4 million in 1954 to

\$1.9 in 1959. This substantial reduction was effected through elimination of services not patronized, revised crew assignments, effective food and other inventory controls, reduction in menu variety where feasible, and simplification of kitchen duties.

Central hauls commuters to and from the metropolitan areas of New York, Boston, Chicago, Albany and Detroit. The New York area represents about 91 percent of both the volume and revenue of total NYC commutation business. Chicago and Boston each run about 4 percent of total; the under-one-percent remaining is contributed by Albany and Detroit.

In the short-haul (10 to 15 miles) Boston area, Central was able to sell one unprofitable line to the Metropolitan Transit Authority, and total trains operated in the area have been reduced from 35 to eight.

Two hopeless services in the New York area were also dropped—the Putnam Division in 1958 and the River Division in 1959. Neither entered New York's central business district directly, which necessitated a train change in one case and a ferry ride in the other.

#### Extend Study of Commuter Service

Mr. Nickerson notes that remaining suburban service in the New York area is under scrutiny to determine what schedule revisions are necessary to better serve the public and tighten up the cost of furnishing the service. "We believe," he asserts, "that this two-pronged attack, coupled with the installation of additional new lightweight equipment, will enable Central to continue to furnish a superior service to the New York area."

The suburban service fleet is being repainted and refurbished. In common with other Eastern carriers, NYC is finding it difficult to finance new passenger equipment through private channels, and the road is cooperating in a New York State program for financing the purchase of new cars. Central expects to receive sufficient lightweight, air-conditioned electric multiple-unit cars under this program to provide (with 100 air-conditioned multiple-unit cars bought in 1950-51) an "MU" fleet that could perform all basic service with air-conditioned cars except for certain rush-hour trains.

Central plans to improve intercity schedules by tightening schedules on through trains through eliminating little-used stations. The success of this program, of course, is contingent on co-operation by regulatory authorities.

Currently, the "Twentieth Century" and the "Empire State Express" trains are being completely refurbished, including the modernization of dining, lounge and observation cars.

#### "Century" Still Premier Streamliner

Central's latest equipment experiments are the "Sleeper-coaches" added to the "Century" and the "New England States." These cars provide private rooms for coach fare plus a modest surcharge. The cars have had a better than 95 percent occupancy.

Although the "Century" is no longer an extra fare train since coaches were added to its consist in the spring of 1958, it remains the Central's premier streamliner and one of the top trains of the country. Today's features include an enclosed room for every sleeping car passenger, hostess service, hors d'oeuvres at the cocktail hour, a corsage or vial of perfume for each lady, a boutonniere for each gentleman, lounge and observation cars, news bulletins, radio, and newspapers.

To stimulate travel, Central offers family fares, group fares for three or more persons, and party fares for 25 or more. Hertz and Avis rental autos at destination may be reserved through ticket offices. Central honors American Express credit cards for transportation as well as for dining car and baggage charges.

NYC, says Mr. Nickerson, is moving fast in the direction of more rail-truck coordination in mail handling. This provides improved and more economical service, and better earnings for Central. "We told the government we would handle mail on a strict cost-plus-profit basis and make bids accordingly," he continued. "We're handling several contracts of this kind successfully, expect to make more." And he added: "Also, our experiments with hauling mail in Flexi-Van service between Chicago and Detroit have proven highly satisfactory." ■





FREIGHT train rounds curve, leaving Big Four Yard. Four electronic yards speed up the flow of traffic on far-flung NYC system.

# NYC Stresses High-Speed Freights

Already operating 133 fast symbol trains a day, Central drives to make high-speed runs standard

EVER SINCE its present management entered office in mid-1954, the New York Central has been driving hard to achieve maximum return from the railroad's resources and potentials.

Over the past six years, the Central has developed "an entirely new concept in rail transportation" with highly-developed techniques built around latest technological advances. Duplicate, expensive-to-maintain facilities inherited from the steam-era have been replaced with fewer, but more productive and economically sound installations.

As a result, much main line traffic now rolls over the NYC under the guidance of centralized traffic control. Electronic yards speed cars through terminals in 50 percent faster time. Track rearrangement projects add to the efficiency of flat yards. Up-to-date yard and over-the-line techniques reduce freight loss and damage claims.

Improved communications at major yards permit round-the-clock control of rolling stock as well as the transmission of data to district and division offices for analysis and auditing with IBM and other computing equipment.

The formation of line and staff organizations to place responsibility at local levels has improved operations and lowered costs.

justed schedules received clearance to start rolling six years ago this month.

These trains, called "Early Birds" now run each way between New York and Chicago, seven days a week, on schedules ranging from 30 to 33 hours. They bring products to market over 19 hours sooner than was possible with former Central schedules. And Central's fast schedules beat truck timings over the same routes, too.

When the original Early Birds succeeded in winning former traffic back to the road and in gaining new customers, further high-speed freight service was inaugurated. Early Birds from Boston presently roll to Chicago in 33½ hours, and to East St. Louis in 37¼ hours, more than 17 hours faster than the running time in 1954. Early Birds also link Chicago and Buffalo, and Cincinnati and Detroit.

Other daily high-speed freight runs have been established from Chicago to Buffalo, Detroit to New York, Detroit to Boston, and East St. Louis to New York. These runs include cars that either originate or are received at Cincinnati, Peoria, Indianapolis, Toledo, and Cleveland. Improved service in both directions is also available on runs to Pittsburgh and Baltimore from Chicago and Detroit.

In a drive to make high-speed through-freight movements standard, further studies of such services are being undertaken. Besides strengthening the Central's competitive position, fast freights are reducing turn-around times, thereby lowering car rental costs as

## Central Adds Industrial Engineers

New York Central believes it's the only major railroad with an Industrial Engineering Department.

It's an innovation (in railroading) that has proved extremely worthwhile. In 1959, the efforts of Central's industrial engineers produced direct annual savings of \$750,000; and the figure will reach an estimated \$1.2 million this year.

Recognizing the importance of this type of work, Central has expanded its industrial engineering groups on each of the five districts. This was done by adding both experienced industrial engineers and also engineers who are recent college graduates.

"Once the industrial engineer becomes thoroughly familiar with railroad operations, he is then eligible for promotion to any number of positions within the company," explains J. H. Hildenbiddle, Jr., Director of Industrial Engineering. "Thus, each year we find it

necessary to add a considerable number of college graduates to our staff."

What sort of work do industrial engineers do on a railroad? A few of the projects now being progressed include laying out new freight and passenger facilities; a wide range of material handling problems relating to freight, mail baggage and express, and installation of material handling equipment throughout the system. There are also such projects as line abandonments and consolidation of facilities. All projects are summarized in written reports.

Projects undertaken by the industrial engineers originate from the General Manager, the division superintendents, the engineers themselves — or any department that feels the need for their services. The industrial engineering group in a district is similar to a consulting engineering group. It may be called upon to survey any type of operation.

Greater utilization is being made of existing facilities; and money-losing operations, such as the West Shore ferry between New York and New Jersey are being discontinued where possible.

New motive power and freight cars have been purchased. Locomotive and car repair shops have been built or upgraded in centralized locations. The use of welded rail has increased. Maintenance of way has been mechanized and geared to assembly-line production techniques. Numerous grade separation projects have been undertaken. And the New York Central Transport Co., a wholly-owned trucking subsidiary, has been organized.

The NYC serves 11 states as well as two provinces in Canada. As F. N. Nye, Director of Transportation and Economic Research puts it, "The Central extends from Massachusetts to Missouri, Quebec to Kentucky, and Michigan to New York."

To improve and accelerate service for this territory — territory that contains almost half the population of the United States, produces approximately 64 percent of all goods manufactured in the nation, and mines about 60 percent of the country's coal — "new" New York Central fast freights operating under revised and ad-

well as enabling the road to utilize its locomotive fleet more effectively.

Flexi-Van, the Central's own brand of door-to-door container service, started operating about 2½ years ago. This year, total Flexi-Van loads are expected to exceed 42,000, and estimated Flexi-Van revenue for this year will be over \$12 million.

Road-rail terminals in 20 key cities enable Flexi-Vans to provide service for countless communities in NYC territory. Through interchange agreements with several roads, Flexi-Vans travel from coast to coast; and three steamship lines provide international road-rail-water Flexi-Van service. (See Flexi-Van story.)

Two daily solid Flexi-Van trains — the eastbound and a westbound "Super Van" — travel at passenger train speeds to join Chicago and New York in 23 hours. This is the fastest freight schedule ever offered between these two cities.

Last August, Super-Van service was inaugurated between Boston, Worcester, Springfield, and Chicago. And a little over a month ago, this service was extended to include St. Louis, Indianapolis, Cincinnati, Anderson, and Louisville. Arrival times permit transfer

CONTINUED





J. F. NASH, Vice President-Operations, inspects random-access storage computer, one of three such machines in car reporting system.

### Control Bureaus "Put Finger" on Equipment

Up-to-the-minute mechanized reporting systems enable the Central to control and assign its rolling stock and motive power on a system-wide basis.

At present, a network of 56 yards reports an average of 70,000 car movements daily to Freight Service Bureaus in New York, Cleveland, and Indianapolis. The network also includes 13 on-line divisional freight sales offices, 11 chief dispatchers offices, five district operating headquarters, and five tracing bureaus at New York, Cleveland, Detroit, Indianapolis, and Chicago. It uses 7700 miles of AT&T leased lines.

With this mechanized car reporting system Central has — improved yard efficiency through speeding up classification of cars and advancing train departures; — facilitated car distribution; — minimized random tracing of individual cars; — eliminated manual preparation of reports; — provided detailed traffic data to staff, district, division and off-line freight sales offices.

### NYC STRESSES FAST FREIGHTS CONTINUED

of the vans to highway wheels for delivery to final destinations before the business day begins.

Other high-speed service includes the "So' Westerner," a general freight train that for almost a year has been providing the fastest rail service available from East St. Louis to New York City. The Central also maintains overnight runs between Pittsburgh steel plants and markets in Detroit.

In making up train consists, Central tries to group cars for the longest possible movements without switching at division terminals. Departure times are planned to permit the maximum amount of traffic to move the same day; arrivals are geared to customers' needs and market requirements. Schedules also are arranged to facilitate freight receipt from, or delivery to, NYC connections. Besides numerous other links, these connections include all railroads reaching New York, Boston, Montreal, Detroit, Cleveland, Pittsburgh, Cincinnati, Toledo, Chicago, and St. Louis.

Connections with trunk lines entering Chicago are made both direct and by means of the Indiana Harbor Belt Railroad and the Chicago River & Indiana Railroad, both of which the Central controls. And the Peoria & Eastern Railway, operated under lease, provides the NYC with service from the Indiana-Illinois state line to Pekin, Ill.

Cars in bridge traffic are grouped to facilitate prompt delivery to principal connections such as LS-3 with the Santa Fe at Streator; LS-1 with the CB&Q; C&NW, Milwaukee Road, and CRI&P through the Chicago gateway; and BF-1 and BF-3 similarly

When IBM Ramac systems currently being installed in each of the New York, Cleveland, and Indianapolis service bureaus come into use, the location of a car will be determined by typing the initial and number of the car in an inquiry unit. Provided with this information, Ramac will then type the car's position immediately.

To help distribute freight cars more efficiently, Central now uses a "7:00 am Freight Equipment Situation Report." This report originates at terminal yards and intermediate transit yards. It notes empty cars available and empty cars classified for movement on orders as of 7 am each day. The report goes to key transportation officers between 8 and 8:30 am daily.

With this information, these officers plan the day's distribution and control, with emphasis on supplying cars when and where needed by customers.

Similarly, NYC has set up a Centralized Motive Power Bureau at New York to insure maximum use of its 2000 road locomotive units. This bureau, too, operates every hour of every day in the year to coordinate and direct movement of the system's diesels.

Each morning before 8 o'clock the railroad's 20 divisions forward detailed reports to New York listing the type and disposition of all diesel power on their respective tracks as of 7 am that day.

"With this information," explains J. C. Kenefick, General Manager Transportation, "we not only know exactly where our diesels are at all times, but we also know if they are in movement or available for assignment elsewhere. And when they are available, we can direct them immediately to a point that needs motive power to carry out its assignments. This ability to manipulate our engines rapidly improves service and at the same time, it gives us a greater return from each diesel unit."

"Also, those of us at headquarters here in New York talk by phone each morning with district officers throughout the system to discuss the entire operation of the railroad. By maintaining this personal contact we can correlate our activities and because we are provided with an up-to-the-minute over-all view of the railroad, we can make instant decisions as to how we'll allocate our facilities most advantageously."

grouped to permit delivery at East St. Louis. Eastbound CB-2, CB-4, and BFNY-2 handle cars for Eastern connections at Buffalo.

The NYC operates 133 regularly scheduled symbol trains at least five days a week. A total of 18 Early Birds roll in each direction on Boston-New York, East St. Louis and Chicago runs. Eastbound freight, which is 50 percent perishable, also includes forwarder traffic, LCL, and general freight. Westbound freight consists largely of forwarder traffic and automobile parts. This traffic becomes more diverse west of Buffalo. Faster running times have eliminated one icing for eastbound perishables.

NYC operates solid trains of coal from mines in Pennsylvania, Ohio, West Virginia, and Illinois districts. Volume coal traffic is hauled, too, from Cincinnati and other junction connections to coal docks on the Great Lakes. Coal in solid groups is carried in symbol freight trains for industries on the NYC as well as for industries that are reached via the NYC.

The New York Central System is divided into five operating districts—the New York, Eastern, Western, Southern, and the Northern. In turn, these districts contain the 20 divisions that comprise the entire railroad. With the formation of a line and staff organization to replace the NYC's former departmental organization, each general manager is responsible for the operation of his district. Headquarters staffs establish and supervise standards, programs, and policies. They also maintain coordination between districts and departments.

Centralized Traffic Control has been a major factor in stepped-up NYC freight schedules. In addition, CTC provides substantial operating economies and tax reductions; because it permits excess track and related facilities to be retired or reused elsewhere.

Discussing further CTC advantages, B. S. Converse, Assistant Vice President of Engineering for the NYC says, "In converting our right of way from four to two tracks when CTC is installed, we frequently gain the added clearance that's needed to carry some of the newer-type large and heavy loadings we're asked to haul."

Central's massive yard improvement program has also helped to speed freight. Since 1955, electronic hump yards complete with car shops for light and running repairs have been built in Buffalo, Elkhart, Indianapolis, and on the affiliated P&LE in Youngstown. Improvements to more than a dozen other yards have been completed or are planned (See article on Yards and Terminals).

To improve the efficiency of its LCL operations, NYC instituted a "Loading Control" program in 1959. Zones have now been established for all destinations and daily wire reports are forwarded to a central office to allow for quick determination of the LCL traffic flow pattern. This pattern is summarized by means of IBM equipment and punch cards.

By eliminating extra cars and improving service schedules, the program has improved equipment use by 50 percent. And with the establishment of regular schedules between all major points, average load per car has increased, too, from approximately 10,000 lb to 15,000 lb.

Because of reduced LCL volumes, the short hauls made necessary by ICC "key point" restrictions prevent maximum substituted trucking efficiency by the NYC. The road has filed a key point case with the Commission in an effort to eliminate 33 of 45 current key points. With the establishment of 12 major points, NYC research indicates that substituted trucking as a supplement to rail service would enable it to carry its present rail volume of LCL, mail, express, and baggage more efficiently.

In developing its mechanized freight handling program, the Central has instituted several techniques, among them the pallet

### Toward a Safer Central

New York Central continues to emphasize the importance of the human element in railroading.

Says W. V. Hayes, the road's Director of Safety, "The safety of each man on his job is a prime consideration to all Central officers. Because this interest in safety extends from the President on down, we've been able to develop some effective programs."

Central's accident ratio per million man hours for the first eight months this year was 6.91, down 19 percent from the 8.55 record of 1959. In 1959, the figure was 10.11. "We won't be satisfied until our record is the lowest in the industry," says Mr. Hayes.

In safeguarding lives and preventing injuries, NYC conducts training classes, holds supervisory and on-the-job meetings, fits equipment with added protective devices, and utilizes visual aids.

Each of the Central's five operating districts has a Safety Supervisor whose primary duty is safety education. He works through the division superintendents.

Central believes, too, in formal recognition of safety achievements. For instance, the Southern District received a silver trophy for compiling the best safety record in 1959; the Peoria & Eastern — with a perfect safety record — was honored as the most accident-free operating division.

Despite its extensive safety program, Central believes that responsibility for safety is not a function of the company alone. Says Mr. Hayes, "In return for our efforts, we feel it is an employee's obligation to be on the lookout for his own safety and that of his associates. It is through helping one another recognize and protect against hazards that accidents are kept to a minimum."



CENTRAL'S varied operations include a big "navy" in the New York City area. Tugs operating in this service are dispatched by radio.

and rack system for shipments to be loaded aboard delivery trucks. Other mechanical freight handling methods currently under study include roller conveyors, containerization, and automatic sorting systems.

Through a centralization plan, the NYC is eliminating little-used stations and replacing them with freight service centers at major points. From these centers, Assistant Agents visit customers daily. Shippers can contact the centers via free communication systems. Pickup and delivery of LCL is available. And the centers perform all paper work and billing operations. The freight service center plan, originally established on the Wallkill branch in New York early in 1959, covers approximately 175 stations on the Central. Eventually, the road hopes to extend the centers throughout its entire system.

### Mechanization Eliminates Much Paper Work

Following establishment of the freight service centers, functional cost reports determined that mechanization could replace costly, time-consuming paper work operations. Take demurrage, for example. Under the new procedures, a physical track check is made on a card containing the inbound and outbound record of each car.

This card is then forwarded to the District Demurrage Auditing Bureau where the information is converted to IBM punch cards for further use in the machines. Each record can then be audited mechanically and a monthly run prepared with the correct charges for the customer. This procedure eliminates numerous transcriptions.

The cashier's functions are being mechanized, too. End result here is an IBM card that will facilitate receipt of customer payments. This system will permit mechanical determination of current outstanding accounts and the tracing of delinquent payments by each freight service center.

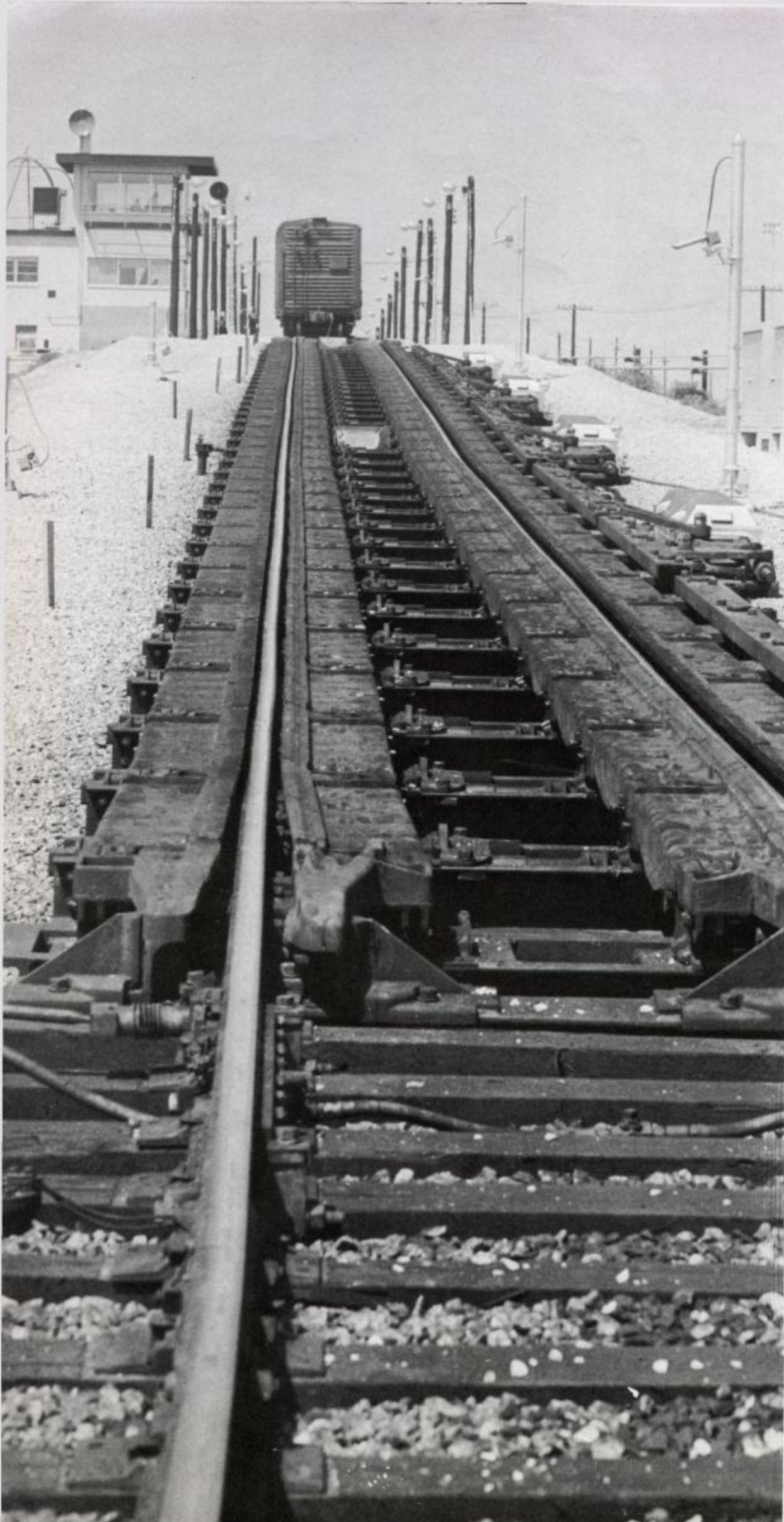
Considering, then, the past six years of extensive planning and improvements on the Central, what of the future? In operations has NYC achieved its goals? Will the Central's interest in merger possibilities lead to a tapering-off or a hold-the-line policy?

"No," firmly answers J. F. Nash, Vice President Operations. "We plan to continue moving forward in all areas. We cannot afford to stand still or become complacent — otherwise we could lose all the gains we've made over the past few years."

"We have short-range plans that cover the next five years and long-range plans for periods beyond 1965. These plans cover all phases of our railroad. And the major reason for our success in developing these plans, as well as in completing so many projects in recent years, is the 'teamwork' concept that exists now on the Central."

"All departments work closely with one another. Our person-to-person communication is excellent. Autonomous departments do not exist. We have no mythical barriers or closed doors. That means we're all closely united in working toward the same objective — the advancement of the railroad, rather than for the seeming success of an individual department."





# Yards Keynote NYC's Rebuilding

Four new electronic yards

replace many old ones,

slash car delays by

as much as 70 percent

POISED at top of hump, box-car is about to go through main retarder at Big Four Yard. NYC's other three electronic yards are saving the railroad \$10 million yearly.



YARDMASTER'S console atop hump tower at Big Four Yard. Panel contains counters that show how many cars are in each classification track.

**Y**ARD AND TERMINAL improvements are keynoting New York Central's drive to become a more competitive transportation company.

New electronic hump yards have reduced car delays by almost 70 percent in some instances. And, they help NYC move solid trains to destinations without delay except for crew changes and inspections.

Within a 14-month period in 1957-58, the Central completed three electronic hump yards—the Frontier in East Buffalo, the Robert R. Young in Elkhart, and the Gateway on the P&LE in Youngstown, Ohio. Less than two months ago, the NYC dedicated its Big Four Yard ten miles west of Indianapolis. And present plans call for construction of an electronic yard in Detroit shortly.

New Flexi-Van facilities have also loomed large in NYC's terminal improvement program. To meet the growing demand for this type of service, new Flexi-Van terminals were built last year in New York, Chicago, Dayton, Ohio and Anderson, Ind. At the same time existing Flexi-Van terminals were enlarged in Springfield, Mass., Cleveland, Ohio, Detroit, Mich., Rochester, N.Y., Indianapolis, Ind., and East St. Louis, Ill.

These terminal constructions and enlargements followed 1958 openings at Albany, Syracuse and Buffalo, N.Y., Boston and Worcester, Mass., Louisville, Ky., and Cincinnati, Columbus and Toledo, Ohio.

Besides its automated electronic-hump facilities, New York Central's complement of yards includes seven hump-retarder, one hump-rider, and 27 flat yards.

Discussing NYC classification facilities, R. R. Manion, Assistant Vice President Operations, says, "We've made a great deal of progress over the recent years with our yards. In fact our three electronic yards at East Buffalo, Youngstown, and Elkhart are saving us about \$10 million a year in operating costs. And our new electronic Big Four Yard will add to these savings.

"We realize how vital it is to reduce the time cars spend in be-

ing switched and made up into trains in continuing to improve our service and lower costs. We intend to move ahead with our yard program by building new or modernizing existing yards."

Confirming Mr. Manion's comment, extensive revisions will be made to NYC's Stanley flat yard in Toledo, Ohio. And with completion shortly of a \$4.5 million revision project, the Central's West 60th Street Yard in New York City will have space on its classification tracks for 1300 cars.

NYC work in the planning stage includes a new electronic hump and extensive revisions to an existing retarder yard at a location still to be selected in New York State. Other plans involve new yards or large-scale revisions at Collinwood near Cleveland and at Battle Creek, Mich.; and a new flat yard at Suspension Bridge, Niagara Falls, N.Y.

In another phase of its program to speed cars through terminals, the New York Central has installed spot car repair tracks at all its new hump yards.

## Older Yards Get Attention Too

Repair operations at older yards are being revised, too. For instance, the introduction of three stationary "A" frames, a Whiting 5TM Trackmobile and a fork lift truck at DeWitt Yard near Syracuse permits a progressive spot system to be used in making wheel changes and truck repairs to 115 cars a day.

Because the new Big Four electronic yard is at the junction of lines between Cleveland-St. Louis and Cincinnati-Chicago it is able to serve the NYC's Southern District territory of southern Ohio, Indiana, and Illinois, in addition to the St. Louis and Peoria gateways where traffic is interchanged with western railroads.

Now, for example, trains made up in East St. Louis with cars blocked in groups for Indianapolis are classified in the Big Four Yard instead of undergoing time-consuming transfer between six yards as was previously necessary. Also, trains are pre-grouped at the Big Four Yard for immediate delivery to connecting lines at East St. Louis.

CONTINUED



## YARDS HAVE DIESEL SERVICING AND CAR CLEANING FACILITIES

Big Four's 66 miles of track with space for almost 4500 cars was laid in prefabricated panels and turnouts, either assembled at the Beech Grove Shop or shipped in from other sections of the railroad where track retirements occurred. The hump and ladder tracks that serve the yard's 55 classification tracks were built in place, however. Total capacity of the classification tracks is 2270 cars.

First of the new electronic yards was the more than \$6-million Frontier Yard at East Buffalo. When this yard was opened in the spring of 1957, it replaced eight classification yards in the area and reduced the time needed to move a freight car through the city from 24 to 8 hours. Primarily a local industrial yard, Frontier's 80 miles of track extends over 180 acres. (Modern Railroads, May 1957, p. 78.)

The Robert R. Young Yard at Elkhart, Ind., (Modern Railroads, March 1958, p. 75.) has enabled the NYC to eliminate 11 out-

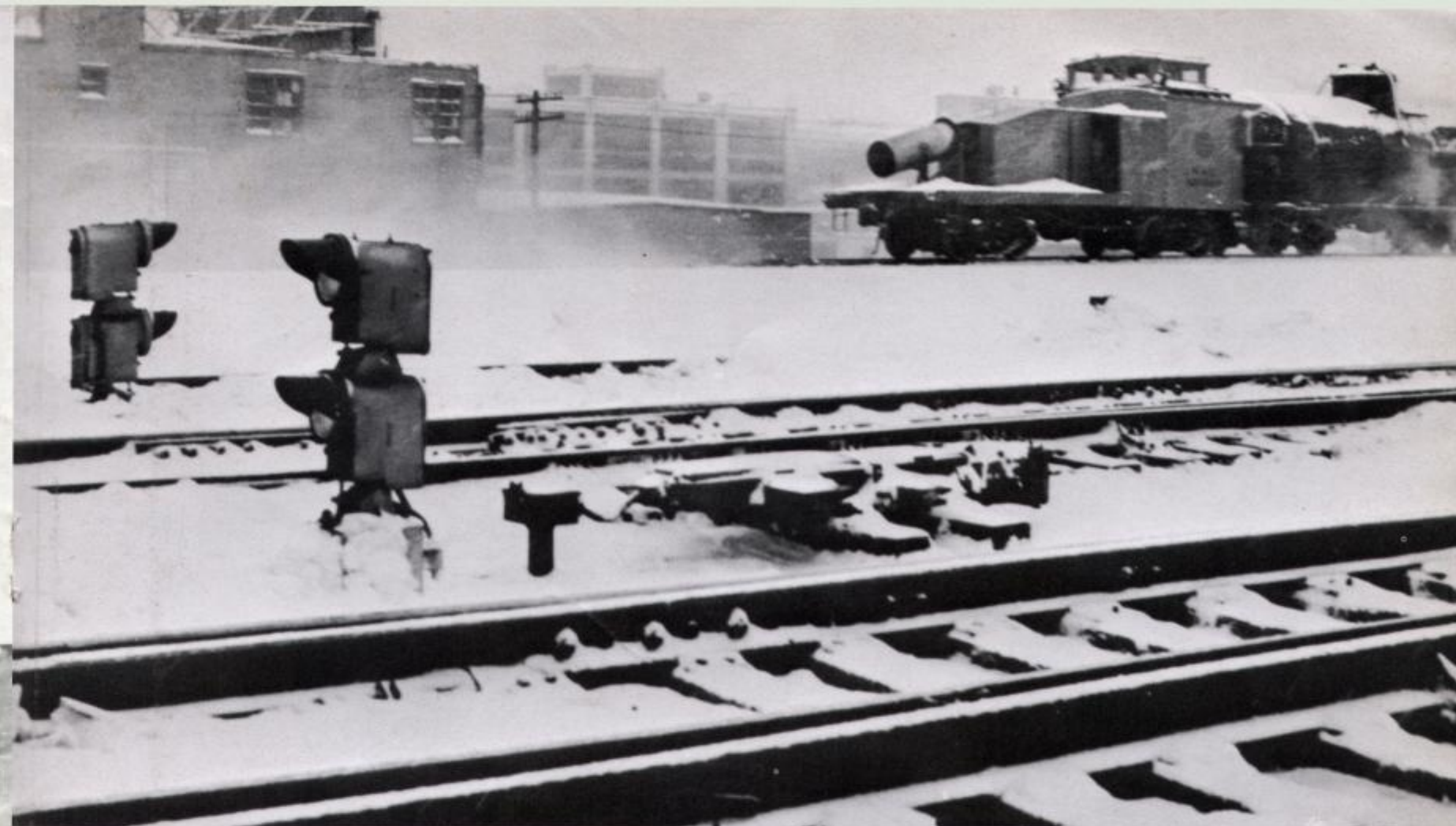
moded yards and consolidate two freight terminals. Central spent about \$4 million on the project. The R. R. Young, Frontier and Big Four yards all use the GRS "Class-Matic" system of automated switching and speed control. In May, 1958, car classification started at the \$7.5 million Gateway Yard. Located on 210 acres alongside the Mahoning River near the steel plants in Youngstown, O., this yard uses US&S Automatic Switching and Veloc speed control. It classifies mill and mine shipments from Pennsylvania and Ohio fifty percent faster than three old-time P&LE yards did.

In addition to automatic switching and retarder equipment, all four of the NYC's electronic-hump yards contain facilities for diesel servicing and car cleaning, as well as spot car repair tracks. Besides modern towers and other buildings, the new yards all have extensive communication systems, including radio, closed circuit television, and pneumatic tubes. ■

RETARDER operator normally monitors operation of automatic speed control equipment. He can operate levers to correct for any emergency condition. Each electronic yard on the Central System has replaced several outmoded, inefficient flat switching yards.



TELEVISION cameras at each end of Big Four Yard flash pictures to the yard office, where operator dictates car numbers of entering trains onto tape recorders. New York Central has a fifth electronic yard planned, to serve the important Detroit area.



JET SNOW BLOWER cleans snow from yard tracks, even from under standing cars. NYC's research department has been retained as consultant to government agencies, to adapt blower for airport runways.

## NYC Stresses Applied Research

Technical research labs look for new approaches — not just refinements

NOWHERE will you find the spirit of the "new" New York Central better exemplified than in its new technical research center at Collinwood, Ohio.

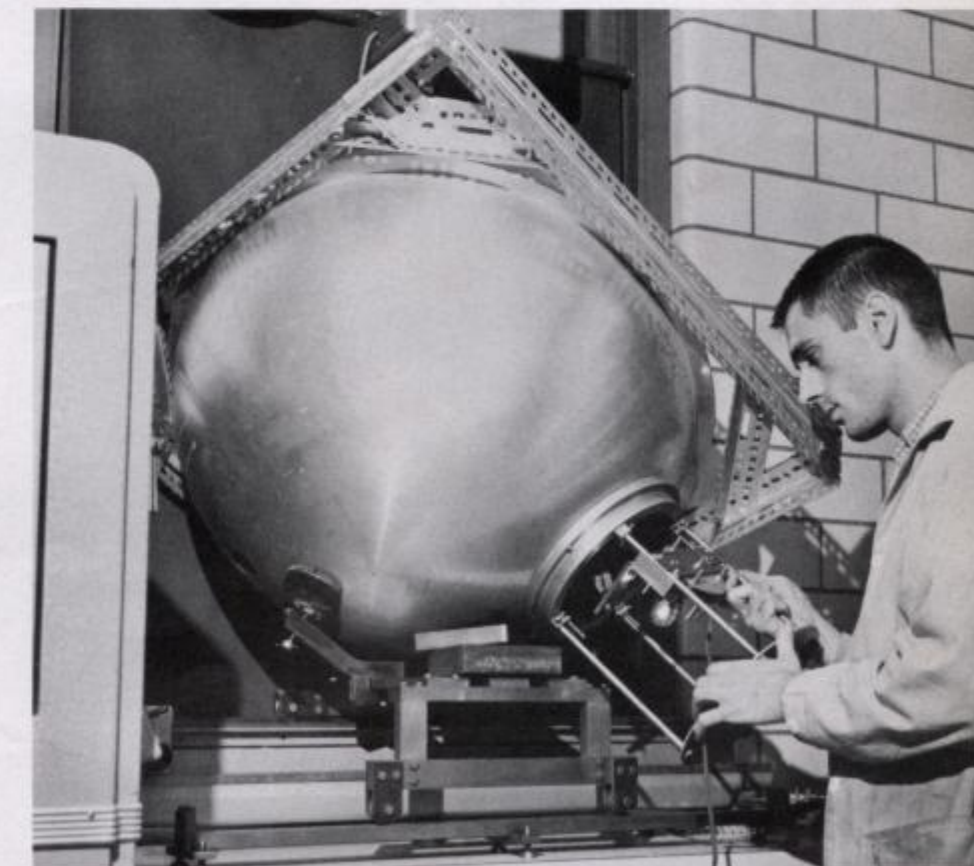
This is not a "test department," as most railroaders use the term. True, the center does contain some of the equipment you often see in other railroad labs. And it does do some quality control testing, just like most railroad test departments.

But Director of Technical Research J. J. Wright and his associates are emphatic in stressing that their primary concern is with **applied research** — not with "testing and development."

"We feel that there are only two other railroads besides ourselves that are engaged in true applied research," declares Jim Wright. "They are the Southern Pacific and the Rio Grande — although several other roads border on this type of activity."

"Our industry needs more applied research. The trouble is that there is a lack of understanding of what it is. Education about the different types of research is needed."

CONTINUED



INTEGRATING SPHERE is used in connection with spectrograph in a study of signal lights, at Central's Collinwood laboratory.



## NYC Provides Researchers With Latest Facilities, Equipment

Well, just what are the different types of research, and where do the railroads fit in with each? Explains Mr. Wright, "First, there's **basic research**. That's where you write a paper, but you don't produce any usable object. Most of the basic research in this country is being done by the universities, along with a few private concerns such as the Bell laboratories. Basic researchers have doubled mankind's store of knowledge in the last 10 years.

"The second type of research is **applied research**. The applied researcher, unlike the basic worker, has a known objective. It's his job to take the basic knowledge and put it to work for him. He builds the prototype.

"The **testing and development man** takes the things developed by the applied research man and refines and improves them. This is what most railroads are doing today. They keep changing a nut here and a screw there — simply working over a dead horse.

"This sort of approach dissipates funds, and once you're in that rut it's very hard to change. You can put millions into a modern laboratory but as long as the philosophy doesn't change nothing will ever really happen."

Central has invested a million dollars in the physical facilities of the Collinwood laboratory. When you enter the modern steel and concrete structure you see such up-to-date research tools as a three-meter, 16-channel direct-reading spectrometer; a three-meter spectrograph converted for color work; an infrared spectrophotometer, an isotope spectrograph, a completely-equipped engine test cell and so on.

These are a few of the tools; but even more important, Jim

Wright emphasizes, is a well-qualified staff. Fifteen of the 64 people on the staff of the Technical Research Department are engaged in applied research.

In its applied research projects, Central has sought particularly to take advantage of the possibilities of using radioactive isotopes. As Mr. Wright puts it, "They often let the applied researcher get the answer in hours instead of maybe days or years."

Already NYC is the largest single railroad user of isotopes in the world. And it's the only railroad anywhere that has its own electronic neutron generator. This generator, made by Kaman Aircraft Co., is used to activate or make radioactive materials and parts.

Already the lab has completed a number of important projects using isotopes. For instance, it used them in a study of water penetration and oxidation in signal wire and cable. It used a radioactive chromium isotope — along with a number of white rats — in a series of studies to determine the effectiveness of barrier creams in protecting against chromate dermatitis.

Isotopes have also been used to determine the temperature of very thin films of oil. Too, NYC has used radioactive piston rings in a study of diesel engine wear as related to fuel and lube oil.

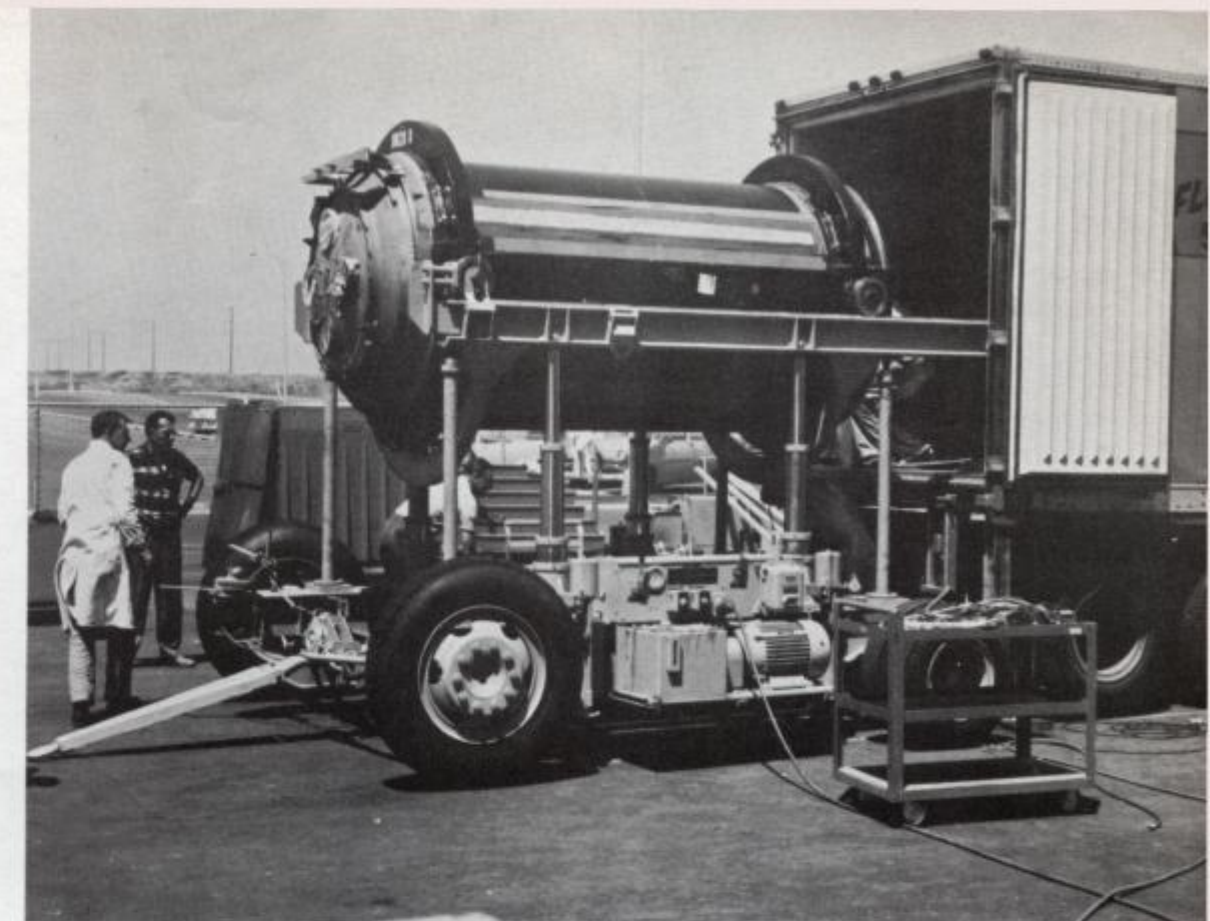
In this latter study, NYC is exchanging data with the D&RGW and the SP, which are doing similar studies. Central is also exchanging other research data with these two roads.

Among other projects using isotopes, Central is testing some radioactive switch lamps using Krypton 85. And one of the more interesting developments is the "gamma densometer" that has

DIRECT-READING SPECTROMETER is used in checking diesel engine lube oil samples. Lab does this work for all locomotives on the system.



ATOMIC switch lamps, using Krypton 85, are being tried in actual service near Cleveland. NYC is world's largest railroad user of atomic isotopes.



AIR FLOTATION shipping system was developed by NYC research for shipping delicate missiles. In trial, dummy Polaris is loaded into Flexi-Van container.

been tested with encouraging results as a method of inspecting cross-ties. It measures the amount of scattered radiation when ties are exposed to gamma rays from Cesium-137. The greater the density of the tie, the greater the scattered radiation.

By measuring the radiation scatter at four points along the tie, it is possible to detect variations that result from internal decay of the wood. In this way, ties that look sound but are in bad shape internally can be caught. At the same time, the densometer gives a clean bill of health to ties which may look bad on the surface but which are actually sound inside.

NYC has plans to develop a practical version of this tie inspector. It would use four of the densometers, arranged on a work-car so as to give the four readings on each tie simultaneously.

### Varied Projects Include Work for Government Agencies

But by no means all of the work at the Collinwood lab involves atomic radiation — useful as that technique has proven. Here are just a few of the many projects that have been keeping Jim Wright and his boys busy:

— Last fall the lab came up with a "jet snow blower." A jet airplane engine, mounted on a car, makes short work of clearing snow from tracks and even from under standing cars. The jet engine was modified to burn regular diesel fuel.

Significantly, the Air Force and the Federal Aviation Agency hired the NYC lab as consultant to help in modifying the blower for use on airport runways. And, Mr. Wright points out, this was not the only time the railroad's research talents have been put to use for outside industry. "If you support a true applied research group you can make money out of it," he claims. "Railroads have something to sell in this field."

— In a sound-insulated housing on a flatcar near the lab building you can see another of the center's experiments. It's a valveless "pulse-jet" engine. Based on the engine used in the German V-1 missiles of World War II, the test engine weighs 475 lbs; develops 500 hp; has an unburned fuel combustion loss of less than 0.5 percent; and could burn anything from natural gas to heavy residuals. It has several important problems, too; but nevertheless it is another possible new approach to railroad motive power — and an exciting one.

— The research center has also done much work with the "explosive hardening" technique. This method is now being used to harden switch frogs at New York Central's Ashtabula reclamation plant.

○ ○ ○

Even the center's quality control or product-acceptance testing is oriented toward finding new and improved materials. As Jim Wright puts it, "The major purpose of our quality control group is not primarily to check materials for acceptance but to obtain new sources and new materials that will better serve the railroad and its customers."

The Collinwood lab does some of the product-acceptance work; it is also done in a few manufacturers' plants, but mainly at destination or acceptance points on the railroad. "We pioneered destination inspection techniques for wheels, axles, truck parts, and so on," Mr. Wright notes. "It involves establishing of major and minor defects and then using mathematical sampling techniques."

The Central adopted the most widely used probability curves, found in military spec 105B, as the basis for its sampling procedures. Sampling allows the railroad to check and control a larger number of items at less expense. It saves the cost of having in-plant railroad inspectors; solves storage problems for the manufacturers. It also results, NYC has found, in more uniform and higher quality materials. One supplier of steel wheels, for instance, has reduced his rejection rate from 12 percent to less than 1 percent.

In still another important area, the research center has helped to develop a fully-mechanized system for obtaining service data on diesel parts. NYC's diesel parts record bureau, through its machine-produced records, can furnish each maintenance point with detailed records of all locomotives under its jurisdiction (see Motive Power story). These records also play a big part in helping Central obtain better quality diesel components.

The laboratory also makes spectrographic and other tests of lube oil samples from all the NYC's locomotives on a routine basis. In this work it uses the three-meter, 16-element direct-reading spectrometer.

Truly, as NYC President Alfred Perlman has said, "Our research laboratory keynotes what we are trying to do on the Central."





"BUG" moves coupled diesels through spot service shops. Pressing button applies battery power to traction motors.

it had at the beginning of 1954. No new motive power orders have been placed this year. NYC's diesel fleet includes units constructed by Alco, Baldwin-Lima-Hamilton, EMD, Fairbanks-Morse and General Electric.

Under the road's policy of centralizing widely-scattered facilities whenever possible, all diesel units undergo heavy and intermediate engine overhauls at the Collinwood shop near Cleveland. Light repairs, ICC inspections, and the required NYC inspections are done at strategically-located consolidated diesel terminals.

Trip inspections and running repairs are completed at smaller points throughout the system.

Diesel maintenance is conducted with the aid of forms that list engine items requiring attention monthly, quarterly, semi-annually, and annually. To insure efficient and economic maintenance, laboratory control reports are maintained to indicate water leaks, fuel leaks, excessive blow-by and bearing wear, and general parts deterioration. These conditions are determined at the Central's Technical Research Center by means of monthly spectrophotographic inspections of oil samples from each of the road's diesels.

Analysis and tabulation of data sent from the Collinwood Back Shop and maintenance points to the centralized Diesel Record Bureau in Cleveland also permits the condition of every diesel to be supervised closely.

#### All Locomotives Operate in Pools

Both passenger and freight diesels on the NYC operate in pools. Service assignments, which are made between monthly inspections and maintenance work, originate in the road's centralized Motive Power Bureau in New York.

With its emphasis on preventive maintenance, the Central relies heavily on the findings of its Technical Research Center to forestall serious diesel engine damage and failure. The center uses numerous modern testing and measuring devices besides the spectrograph. Among them is an electron microscope to analyze fuels. And through simulated diesel runs in the laboratory with parts made radioactive by a neutron generator, it is possible to test engine components under a variety of conditions in minimum time.

Central estimates that the electron microscope saves more than \$1 million annually in lubricating oil and filter costs. And by indicating in advance the need for engine care, it also provides large maintenance savings.

Drained lubricating oil is washed and steam stripped by any one of several custom refiners to whom the Central sends it for refining and reformation. Although it varies widely, the amount of re-refined oil produced from a given volume of drained oil generally averages 70 percent.

The two additives used in re-refined oil are the same as those used in the original oil. Since the re-refined oil is considered com-

patible with new oil containing the same additive, it can be added to, and used in the same service as the new oil. Water treatment, too, is under the supervision of the Technical Research Center.

With its electron microscope, the Center can determine whether economy grades of fuel oil will meet necessary standards, or whether, with certain additives, the oils can qualify for service. Since the road uses 243 million gallons of fuel oil yearly, even a fractional reduction in cost per gallon results in substantial savings.

At several points within each district NYC has set up diesel fueling stations. Largest is the one at Minoa, N.Y., with its 6-million-gallon oil storage capacity. Others range from the 2,200,000-gallon installation at the Central Station in Buffalo to the 6000-gallon facility at Stoneboro, Pa.

One of the newest programs developed by the Central provides training for supervisory personnel in all aspects of dieselization. Under this program, personnel from other departments will eventually receive instruction in diesel subjects, too. In another phase of the NYC's efforts to increase the knowledge of its personnel, top ranking diesel supervisors are assigned to observe the operations, including those of other railroads for comparative purposes.

At present, the Central is building a training center at Collinwood. To provide realistic training in all phases of diesel operation, the center will have a diesel locomotive mock-up comparable to the Link Trainer used to instruct airplane pilots.

The mock-up, complete with a cab containing a throttle stand and air brake pedestal will enable trainees to get the "feel" of operating a diesel while under the supervision of the Center's staff.

Plans call for the apprentices to attend school for two weeks in each of their first three years for basic, intermediate and advanced training.

#### Modern Diesel Power — Backbone of the New New York Central Motive Power of the New York Central System — June 30, 1960

Diesel locomotives	NYC	P&E	IHB	CR&I	P&LE	CUT
Passenger, cab type	147					6
Passenger, road switcher	205	2				5
Freight, cab type	636					
Freight, road switcher	383	12				35
Switching types	650	7	127	27	90	3
	2021	21	127	27	136	7

Rail diesel cars	19	Total diesel loco-
Electric locomotives (all types)	93	motives, NYC and
Electric MU cars	358	affiliates: 2318

DIESEL SERVICE CENTER at Big Four Yard typifies modern New York Central locomotive facilities. The gantry structure carries sanding hoses.



## NYC Boosts Diesel Efficiency

Centralized shops and record bureau, "spot" maintenance system, improve power utilization

COMPLETION of its dieselization program in 1957 was another step in New York Central's drive to secure its future through the application of modern technological advances.

As the NYC moved into the diesel era, its management stressed the need for maximum utilization of each motive power unit. To gain this objective, the Central has been setting up consolidated shops to replace duplicate facilities; introducing new repair and maintenance techniques; revising procedures and training programs for locomotive personnel; and applying scientific research to prolong diesel life and reduce purchasing costs.

Success of these innovations is evident when NYC diesel statistics for 1953 and 1960 are compared. In 1953, gross tons per train totaled just under 2900; gross ton-miles per train hour added up to approximately 49,000 and the average number of cars per train

was almost 66. For this year the corresponding figures are expected to be 3320, 59,000 and 74 respectively.

Although the New York Central System's fleet of 5050 locomotives in 1930 included 45 diesel electric switch engines, it was not until after the World War II period in 1946 that the road placed an appreciable number of diesels in service. By January 1, 1951, the Central possessed a total of 983 diesel units. Electric engines numbered 161 units at this time, and the steam fleet had been reduced to 2531 locomotives.

Between 1954 and 1959, diesel freight engines in use on the system mounted from 783 to 1019. With the discontinuance of some runs, the diesels in passenger service over the same period decreased from 397 to 352. And with its present 650 diesel switch engines, the Central now has two less of this classification than



# Spot System Aids Equipment Repair

In both locomotive and car shops, NYC has found the spot system greatly improves production at less cost

**D**URING the steam era New York Central repair and maintenance facilities sprawled throughout the railroad. But today, NYC shops are consolidated at carefully selected locations to gain the economies and efficiencies of specialization and high production.

In moving to concentrate its shops at centralized points, the NYC has modernized outmoded structures, constructed new buildings, and abandoned obsolete installations. These advances have been accompanied by a series of production and layout improvements. For example, time-saving and effort-reducing machinery is being used to a greater extent. Shop rearrangement projects are coordinating the flow of material and work sequences. Conveyor systems are facilitating the handling of equipment and supplies. And the storage of parts at point of use is speeding work and reducing inventories.

The spot system has proved particularly effective in repairing and maintaining both diesels and freight cars. Central feels that this system is one of the road's most important achievements in utilizing its equipment effectively.

## Routine Maintenance, Inspections at Eight Locations

At present, system-wide heavy and intermediate diesel overhauls are done at the Collinwood Shops near Cleveland. Routine maintenance and repairs take place at Collinwood Diesel Terminal and at DeWitt Diesel Maintenance Terminal, east of Syracuse — similar work is also performed at terminals in Englewood, Ill., Beech Grove, Ind., Selkirk, N.Y., Bellefontaine, O., and West Detroit. Light diesel repairs and routine maintenance are completed at Harmon, N.Y.

Besides their primary functions, all these shops and terminals carry out inspections required by ICC and NYC regulations. Smaller points throughout the railroad complete trip inspections and running repairs.

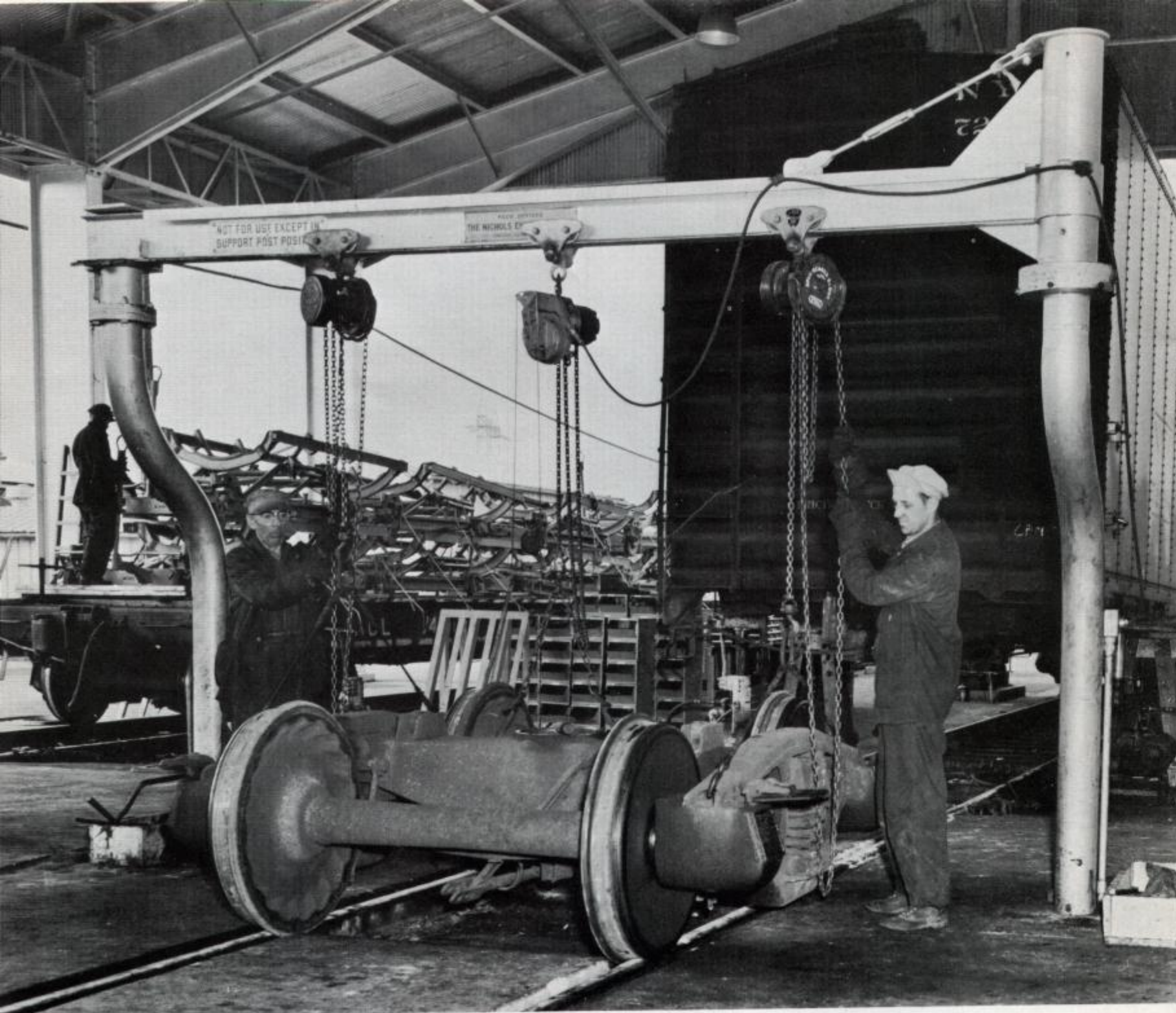
The 90 x 680-ft Collinwood Diesel Locomotive Shop, which was converted from a steam facility in 1952-53 at a cost of \$7½ million plus a \$2¼ million investment in spare parts, does most of its work on a production-line basis.

Diesels at Collinwood are stripped and reassembled in erection bays on two sides of the main shop bay. The shop is also equipped to carry out crankshaft grinding and small parts and electrical repairs. Separate buildings are used for generator and traction motor repair, and for welding, battery and fabricating shops.

Because Collinwood's back shop force of 722 men completes work on approximately 60 units a month, New York Central diesels are out of service a minimum of time before they are rebuilt, broken-in, and ready for assignment again.

The main DeWitt Shop, which conducts running repairs on all NYC diesels, consists of a 200 x 300-ft building divided into two sections. One of these, the servicing section, has three through tracks and a five-ton overhead system. The spot system is used here to service approximately 408 diesels a month. The other

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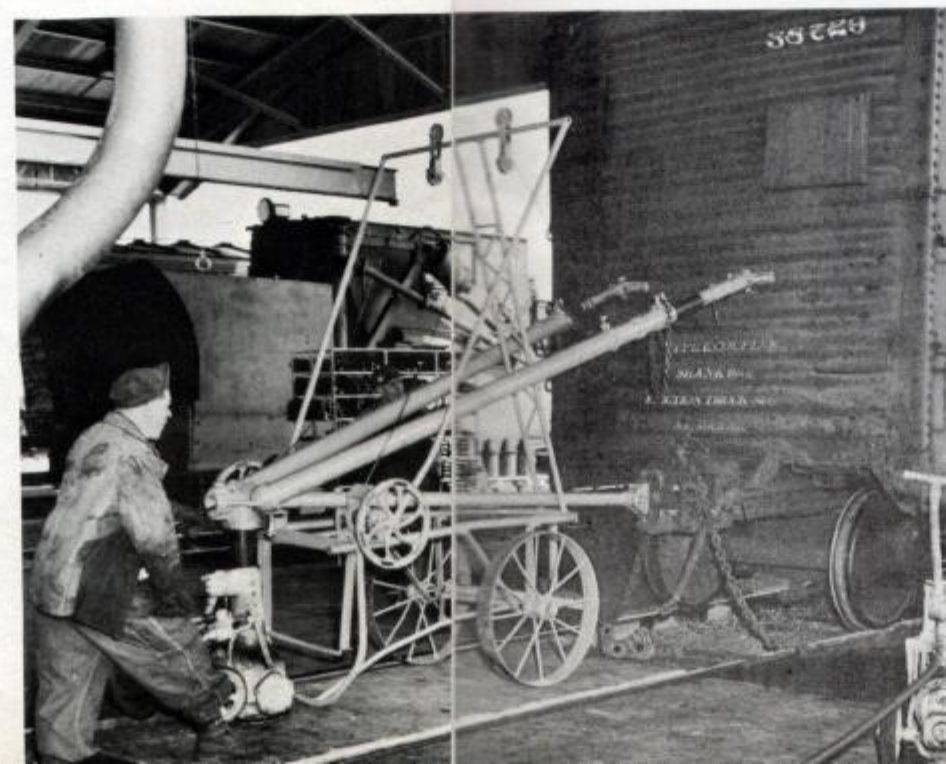


NYC has modern spot car repair track at each of its four electronic yards. This is A-frame for truck repairs on spot car track at Frontier Yard.



AT LEFT: Cars are moved by this road-rail vehicle at the earlier spot car shops. Big Four Yard, with the newest shop, uses "rabbits" to move cars.

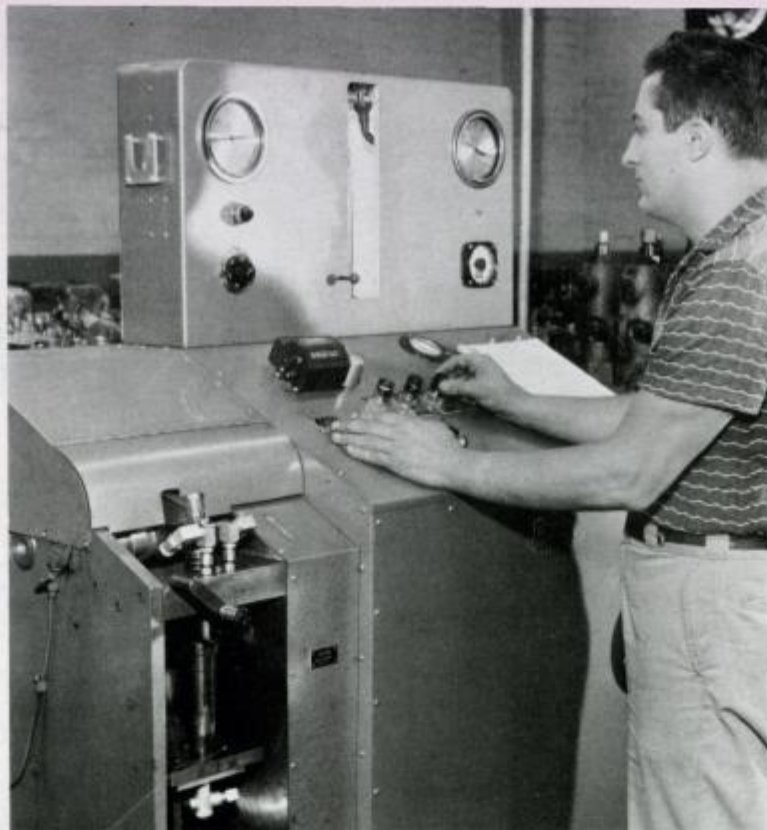
AT RIGHT: This air-operated device, being used at car repair spot at Frontier Yard, Buffalo, makes quick work of straightening damaged car ends.







ELECTRIC JACKS raise car ends for removal of trucks at Robert R. Young Yard, Elkhart (shown here) and at Big Four yard. Central uses spot system for both car and locomotive maintenance, finding it greatly increases efficiency and cuts out-of-service time for equipment.



INJECTOR calibrating machine at Collinwood is one of first in country. NYC has centralized heavy and intermediate diesel overhauls here.

#### SPOT SYSTEM AIDS EQUIPMENT REPAIR CONTINUED

section, used for light repairs, contains three stub tracks and a 30-ton crane. It also has pits and overhead working platforms. A shop addition next to the light repair section is equipped with a Standard Railway Equipment wheel truing machine.

Periodic diesel maintenance is done with the aid of forms that list engine items requiring attention monthly, quarterly, semi-annually, and annually. Under this procedure, uniform practices are developed and more efficient use is made of personnel. Diesels that are inoperative get priority and are shopped immediately.

Information dealing with the performance and life of engine components, including engine cylinder assemblies and traction motors, is sent from the main back shop at Collinwood and from maintenance points, to a centralized Diesel Record Bureau in Cleveland. Here, warranty items are also noted and sent through an electronic tabulating unit to produce loose-leaf sheets for each diesel unit on the railroad.

#### Records Help Schedule Shop Repairs

A master set of these loose-leaf sheets covering the locomotives cared for at each maintenance point is furnished the Assistant Vice President Equipment to assist in determining general condition of the diesels. The information helps in preparing the shopping schedules, too. Under such an arrangement, the close supervision maintained over both age and mileage of locomotive components permits parts to be removed from service and overhauled before road failure occurs or damage to the engine is inflicted.

The NYC's major freight car work presently takes place at four centralized shops. Beech Grove is used for heavy repairs to freight equipment; West Detroit for light, medium and heavy repairs to special device cars; East Rochester for light, medium and heavy repairs to freight cars and construction of new cars. The Harmon shop makes heavy repairs and routine maintenance and repairs to multiple unit passenger cars. The overhaul schedule at these shops depends on car age and condition as noted by inspection.

Besides working on cars, Beech Grove forces repair and condition freight and passenger car wheels, friction and roller bearing assemblies, and Spicer and drive equipment for the entire railroad. With the increasing use of roller bearings in freight service, further expansion and automation of the wheel shop is under consideration.

In rearranging its work patterns for added production, the Central's West Detroit shop now fabricates coil steel car skids on special shop-constructed frame rollers. These same rollers are also used to move automotive racks undergoing repair in the shop.

Other innovations at West Detroit include the purchase of pre-cut lumber to size and the prefabrication of new car wood linings. And work formerly performed outdoors has been placed under cover to permit all-weather operation.

A program is presently in progress to modernize the lading bar repair department at West Detroit by consolidating all work in the area, constructing new roads, erecting loading and unloading platforms, and installing machinery and conveyor assembly-lines. When completed the project is expected to make first-year investment return of over 65 percent.

The big East Rochester shop has been retooled to build new, welded-design cars. Gas shape-cutting machines have been installed, welding stations complete with automatic and manual equipment for constructing sub-assemblies have been set up, and assembly-lines have been revamped to permit the welded cars to be built on a production-run basis. In full operation, this shop has a building capacity of 30 cars a day.

Just as the Beech Grove, West Detroit, and East Rochester shops have been improved, similar modernization programs have been introduced at the shop in Harmon to increase efficiency of its diesel and car repairs.

Another NYC shop, the Ashtabula Scrap and Reclamation Plant, is equipped to repair air brake and steam heat components, salvage track fittings, and demolish old cars on a system-wide basis. All scrap at this plant is cut with a 600-ton hydraulic shear bought in August, 1959. Because of the savings it makes possible, the shear returned its cost, \$175,000, in one year of operation.

Cost control as applied to the Central's shops is defined on the railroad as, "A tool for the proper coordination of the four M's—Men, Money, Methods and Materials."

Accordingly, NYC has developed time standards for all repair operations in an effort to establish work rates that are as representative and as efficient as possible. And budgets are predicated on economic goals that are considered difficult, although possible to achieve. In this way, the Central is able to measure its shop production in terms of money values. ■



## NYC Streamlines "Fixed Plant"

Mechanized gangs,

cycle programming

boost M/W efficiency

**H**IGHLY - MECHANIZED District and Division gangs operating under a pre-programmed cycle system are advancing New York Central track and roadway maintenance to increasingly higher levels of efficiency.

Since replacing section and extra gangs in 1958, the NYC's mechanized forces have contributed substantially to lower operating costs, faster train schedules and improved customer service.

Significant economies have been realized under the revised program. Cost of the newly-purchased mechanical equipment was returned in one year. And 22 NYC machine operators now install ties, line and surface track, and perform similar operations that formerly required the efforts of large gangs of laborers.

Except for the duties of inspection and repair gangs, each of which consists of a foreman and a trackman using an inspection motor car and hand tools, all New York Central track work is carried out by its mechanized gangs. These gangs include basic maintenance and yard gangs, track smoothing gangs, tie and surfacing gangs, and high-speed surfacing gangs. Capital improvement projects,

CONTINUED

WELDED RAIL for commuter-zone tracks rounds the curve at Mott Haven, N.Y.





TRACK PANELS, removed from Syracuse division main line when CTC was installed, are loaded on gons for transfer to Indianapolis, to be laid in new electronic yard. Second hand panels cost about a fourth as much to lay as conventional track in yard construction.

#### NYC STREAMLINES "FIXED PLANT" CONTINUED

such as electronic yards and CTC installations are built by specially-created work gangs.

Over the past three seasons, all new rail and a large quantity of relayer rail installed by the Central has been butt-welded. Discussing this rail, K. E. Dunn, Engineer Maintenance of Way observes, "Our experience indicates that welded rail will provide us with longer life in first location, reduced maintenance through spot surfacing, and longer interval between resurfacing.

"Since the end of World War II our mainlines and heavy tonnage branch lines have been relaid with 127-lb rail. But because our new rail in mainline is being welded, we've adopted 136-lb NYC rail as standard. This rail section has more steel in its head than the others; and for this reason should permit us to get full service benefit from the welding.

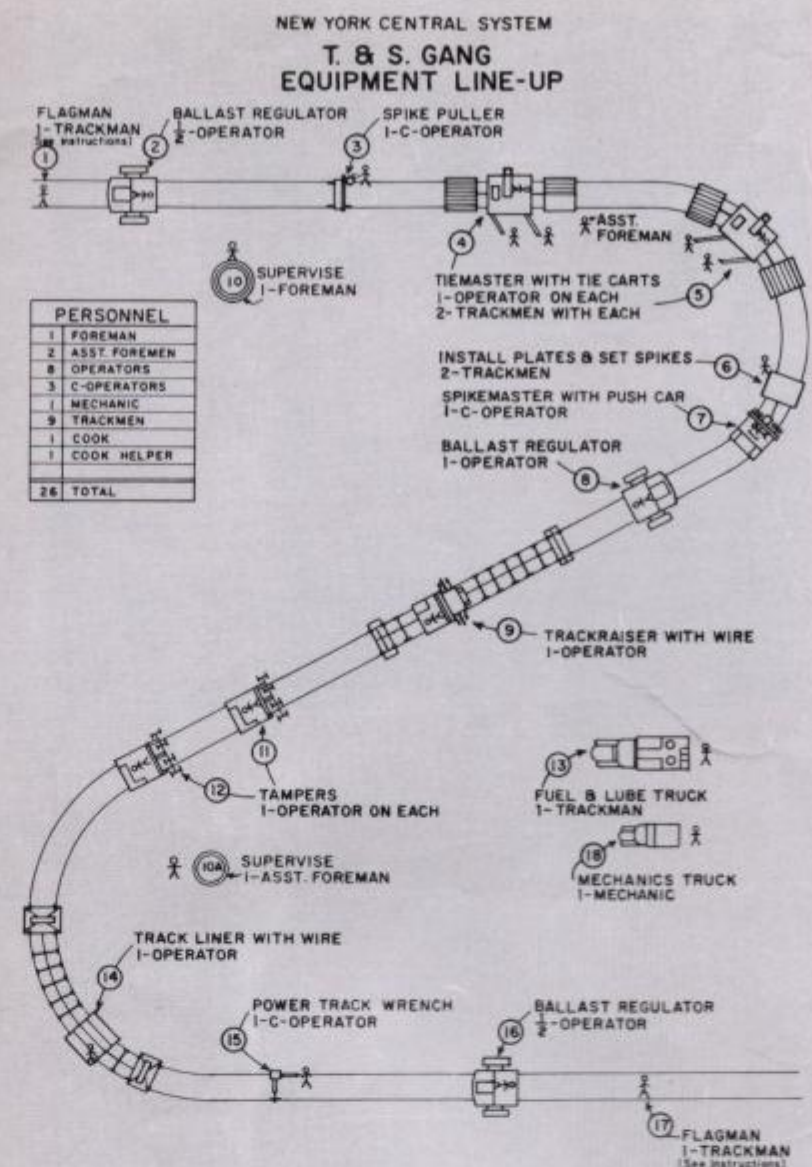
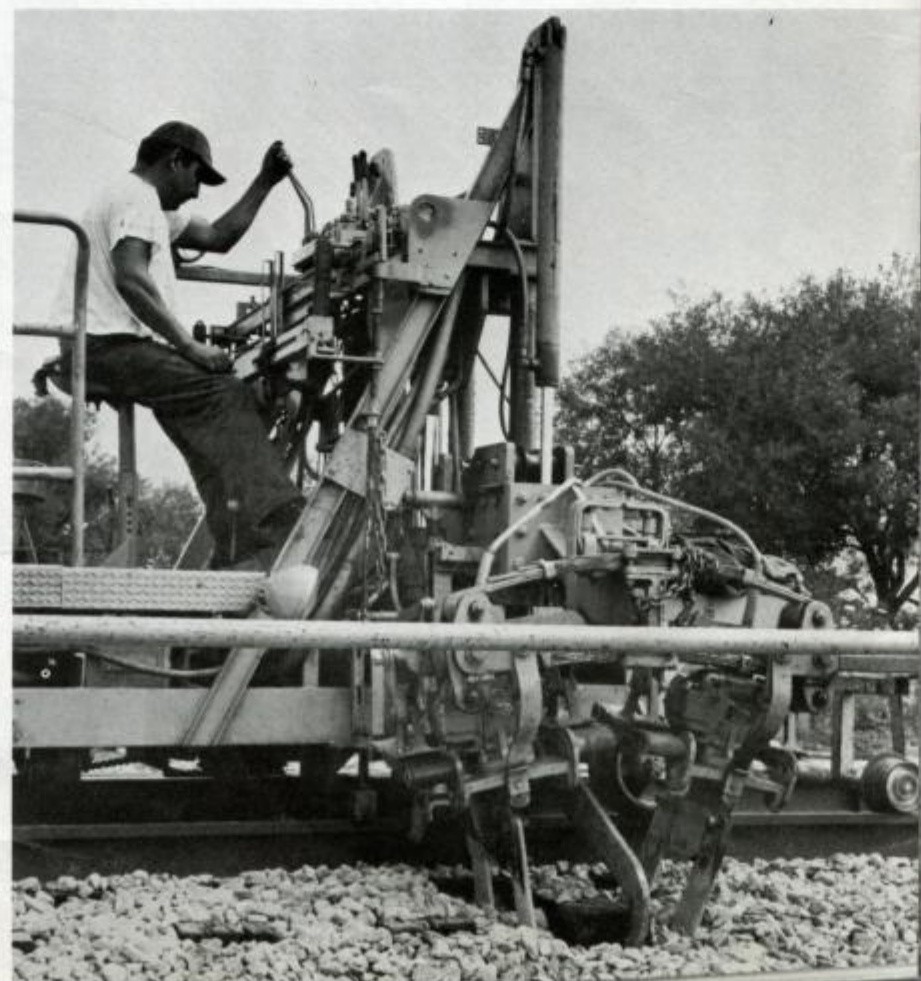
"We started to lay the 136-lb rail this year — butt-welded one-quarter mile strings, generally at mainline locations between South Bend and Albany. In all, our 1960 maintenance rail is expected to include about 94 miles of new, and 166 miles of relayer 127-lb rail."

#### CTC Releases Rail for Relaying

Welding of NYC rail is done both at a contract site and by the railroad's own forces. Rail purchased at Gary is welded under contract at Argo; rail from Buffalo is welded at Syracuse by the Central.

As the NYC continues to install Centralized Traffic Control the excess tracks that become available provide the railroad with a source of relayer rail that can be moved in panelized sections for economic installation at other points on the system. (Track was laid in this way at the Central's new Indianapolis yard for 75 cents per foot compared with a cost of \$2.85 per foot in earlier yard projects.) And because this prefabricated method of track laying has proved so beneficial, the NYC has established shop assembly-

JACK TAMPER, used with wire-type surfacing equipment, is shown at work on Central's main line near Sandusky, Ohio. All maintenance work is done by mechanized district and divisional gangs.



EQUIPMENT lineup of one of NYC's high-speed tie and surfacing gangs.

THIS SCENE near Newark, N.Y., shows the wide roadway left by removal of two tracks when Centralized Traffic Control was installed. The new roadway is now used for movement of off-track M/W equipment.



#### NYC STREAMLINES "FIXED PLANT" CONTINUED

lines complete with jigs at Ashtabula, Ohio, and Beech Grove, Ind., to produce additional switch and turnout panels that can be shipped in units to construction sites.

Rail is laid by the NYC during all months of the year, although mid-summer and mid-winter periods are generally avoided for installation of welded rail. New rail is laid on the Central's main line between Chicago and New York when wear determines that replacement is necessary. On the same wear basis, relayer rail released from CTC projects is installed on all other heavy tonnage lines. Light tonnage branch lines are relaid with 105-lb rail.

About 70 miles of rail are cropped every year at the Central's Ashtabula Scrap and Reclamation Plant. Cropping for switch closure rails is increasing because of the prefabricated construction of turnouts for electronic yards and CTC projects. Except for these switch closure rails, all cropped rail is butt-welded into continuous lengths and used in relayer programs.

Program rail laying on the Central is performed by one gang equipped with mechanized facilities that make it possible to lay an average of two miles of rail daily.

#### Automotive Vehicles Bring Gangs to Work Sites

Because of roadways that exist where track was once located, 90 percent of the Central's basic and production force is equipped with automotive vehicles that move gangs to a work site with a minimum loss of time.

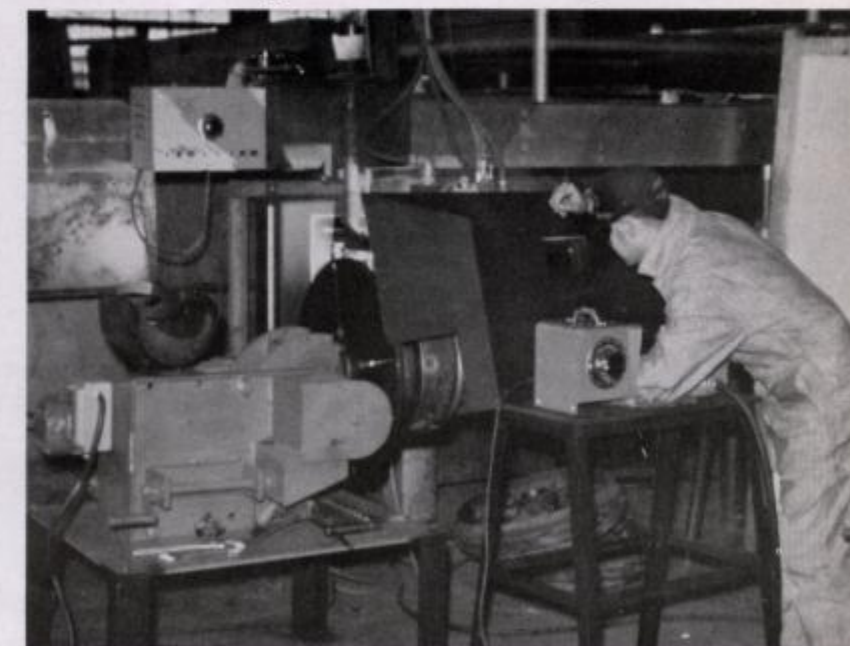
Overall track programs, combining maintenance and improvement budgets, are planned five years in advance. The NYC has found that coordinating its programs over several districts achieves maximum production and machine utilization.

Track surfacing is programmed on the basis of need as determined by visual and riding inspections. New rail is surfaced during the year in which it is laid; main line track resurfacing takes place on the average of every four years.

NYC uses AREA Specification No. 4 stone ballast. Samples are submitted by local quarries to the road's Technical Research Cen-

CONTINUED

SHOP at Jackson, Mich., overhauls all track, roadway equipment. This remote-control welding head is used in hard facing machine wheels.







WEED SPRAYER, designed and built at Jackson shop, operates on track, can run on roadway adjacent to tracks, and on the highway.

#### NYC STREAMLINES "FIXED PLANT" CONTINUED

ter in Cleveland for acceptability testing. Reballasting, too, takes place as needed, rather than on a mileage basis.

Over the past five years, the NYC has been averaging about 770 miles of ballast cleaning a year with a contract machine. This year's program calls for slightly more than 800 miles of ballast to be cleaned.

In 1952, the Central began to use the electric arc method extensively to build up rail ends with welding. Two years ago, specially-designed vehicles were bought for this purpose.

Explosive shock hardening, introduced on the Central in 1958, is improving manganese crossing frogs and turnout frogs that have been reconditioned in the field with electric arc welding. In addition to the field work, frogs are reconditioned at the Ashtabula Scrap and Reclamation Plant.

Switch points are reconditioned in the field with oxyacetylene welding and grinding. Those worn beyond field reconditioning are brought to Ashtabula for welding and milling to their original contours.

Central plans to test 10,000 miles of rail this year with its own equipment. In locations where it is known to be needed, ultrasonic devices, augmented by audigages, are used for testing rail joints.

#### Will Install Test Sections of Concrete Ties

The Central is considering the possible future need for concrete ties. Explains B. S. Converse, Assistant Vice President Engineering, "Our planning always has to look to the future. For that reason, we plan to install test sections of the various designs of concrete ties in our main track in order to obtain experience in their use and develop adequate design of tie and fastening to meet the requirements of our railroad. Our objective is to provide the Central with the best possible track and right-of-way."

CTC, and the subsequent removal of long stretches of track, has eliminated any need for an intensive program of widening fills and shoulders. As explained by Mr. Dunn, "Where necessary, we are widening cuts and building bank at selected locations with roadway grading machinery such as bulldozers, graders, and scrapers purchased within the last four years. By doing away with adjacent tracks under CTC, we have found it possible to reduce curvature and eliminate speed restrictions in about a half-dozen locations."

In conjunction with its tie and surfacing programs, the NYC uses specially-designed off-track machines to improve drainage at road crossings. These machines excavate for pipe drain installation, perform backfill work, and crib foul ballast.

For about 15 years the Central has been using spot correction for areas requiring roadbed stabilization. In performing nearly all this work by pressure grouting, the road receives an estimated 150 percent return on its grouting program investment.



FULLY EQUIPPED trucks make repairs to track equipment in the field.

Some of the on-track equipment used for the Central's roadway work includes specially-designed auto trucks fitted with dump bodies and hoisting devices, multiple-head tampers, ballast regulators, self-propelled track raising machines, and power tamping jacks.

NYC's M/W shop at Jackson, Mich. overhauls and modernizes the road's track and roadway machinery. It also distributes most repair parts. To establish maintenance schedules at this shop on the basis of need, District Supervisors of Maintenance Equipment make field inspections of the equipment. The shop also repairs components, including hydraulic assemblies, transmissions, and tamper heads.

To reduce handling costs, a minimum inventory based on expected shop and field repairs is maintained at Jackson. And a selected list of suppliers at various locations throughout the railroad is available should an emergency purchase of a maintenance part become necessary.

The Central's T&S gangs, surfacing gangs, rail-laying gangs, and certain B&B gangs are housed either in standard boarding cars or in trailer units that have been purchased within the past three years. Because of the reduction in available track in outlying areas, it is expected that the use of trailers will increase.

To improve and perfect new mechanized equipment and work procedures, District Methods Engineers, working with a System Method Engineer, study existing NYC techniques as well as the practices used successfully by other railroads. Employees who show aptitude and interest in operating roadway and track machines are trained by District and System supervisors and instructors.

BALLAST REGULATOR is used with NYC's tie and surfacing gangs.



## Streamline Bridge Maintenance

Highly mechanized program gangs can tackle major projects

NEW Harlem River bridge carries passenger and commuter trains exclusively.



HIGHLY MOBILE and mechanized forces employing modern techniques and equipment are revolutionizing New York Central bridge and building maintenance. Besides doing work that is carefully programmed to insure greatest return at minimum cost, these forces are also completing major projects that formerly had to be awarded at higher cost to private contractors.

In all, the New York Central has a total of 8263 railroad bridges and 2004 overhead highway bridges. The railroad also maintains 22,900 stone masonry, concrete, rail floor, and pipe culverts under ten feet in length.

Generally, the Central's mainline and branch line bridges of steel and masonry are designed for Cooper's E72 live load in accordance with current AREA specifications.

Most new bridges erected by the Central since the end of World War II have been built to meet Corps of Army Engineers navigational requirements.

Last year, the Central completed Bridge 267.61 over the Little Calumet River in Calumet City, Ill. This is a single-track open-deck 310-ft through truss span with a deck plate girder approach span at each end. It was designed as a fixed span with provision for future conversion to a vertical lift bridge. This was the first major railroad structure to employ high-tensile strength bolts for field connections.

In 1956, the old Harlem River Bridge in New York was replaced with a twin 340-ft double-track open-deck through truss vertical lift bridge with ballasted deck, through girder approach spans.

With the installation of pipe culverts, numerous pile trestles have been eliminated by the NYC.

The Central is also extending and replacing existing short spans with precast concrete spans, and is using precast pedestals to replace and raise bridge seats.

#### Gangs Operate on Division Basis

By programming B&B maintenance on a Division basis with District coordination, the Central obtains maximum utilization of its specialized equipment. All gangs function under the direction of the Division Supervisor of Bridges and Buildings.

Gangs include from two to twelve members. An average production gang consists of eight men. The Central's B&B force of around 1100 employees for the 16 divisions is composed of basic and program gangs with emphasis on the latter because they are high-production gangs.

Equipment used by NYC gangs includes truck cranes; combination shotcrete and grouting machines; numerous paint and shop trucks; air-operated staging; diesel pile hammers; adjustable torque impact wrenches; hydraulic bridge tools; and highway trailers for living quarters. Besides purchasing B&B machinery, the Central builds special devices in its Maintenance of Way Shop in Jackson, Michigan.

The painting of NYC bridges is programmed by the B&B Supervisor on the basis of reports from the Bridge Inspector. Coatings of asphaltic oil and metal primer with aluminum paint finish are applied after a minimum of cleaning by highly-mechanized four-man gangs. Other than coating areas where asphaltic oil has popped off rust scale the first year after the oil has been applied, no other spotting takes place.



# NYC Turns to Functional Buildings

Modern steel and concrete structures house newer shops and offices

NEW YORK CENTRAL'S present-day policy requires that every one of its structures be entirely functional. Central is redeveloping many unproductive buildings into income-generating assets through intensive replacement, sales, and leasing programs.

Buildings aiding the Central's resurgence include a variety of new and converted shop structures at centralized diesel and freight car repair points throughout the system. New hump yards have required a number of new, functional structures. For the most part, they're of corrugated steel or concrete block construction. They house repair shops, offices, electronic equipment and control rooms. Some of the yard towers are as much as six stories high.

## Other New Buildings Leased

Buildings specifically contracted to be erected in recent years by the Central for lease to outside sources include a United Fruit Terminal in Weehawken, and an \$8-million U.S. post office in Cleveland. Also, structures have been built in the 60th St. Yard (New York), for Universal Car-loading and Ace Forwarding.

Other recent construction by the Central includes freight houses at Lafayette, Ind., Cincinnati, O. and Allston, Mass. Office and service buildings have been erected at several points in Ohio and Illinois; others in East Rochester, N.Y. and Victoria Yard, Ontario.

Reversing the trend somewhat, new passenger stations have been built at Dunkirk, N.Y., Adrian, Mich., Reed, W. Va., and Shelbyville, Ind. And the Central has asked the New York State Public Service Commission for permission to modernize and relocate its passenger service facilities in the Albany area. Construction of a new \$600,000 station in neighboring Rensselaer, N.Y., is proposed.

Reduction in requirements for steam at many points has made it possible for the Central to replace large power plants with compact automatic boilers that can be installed within, or alongside the facilities being served. The resulting retirement of long steam lines has saved substantial operation and maintenance costs.

As part of its modernization program, the Central conducts continuous system-wide investigations to determine where changed requirements will enable it to replace large installations with smaller modern, more efficient and economical operations. ■

RETARDER TOWER at Big Four Yard is typical of New York Central's functional structures.



## Coming: More Microwave



MICROWAVE AND PNEUMATIC TUBES are two of the types of communications equipment used at Big Four Yard. View is from main yard tower.

## NYC GEARS COMMUNICATIONS PLANT

### TO NEEDS OF DATA TRANSMISSION

### AND DIRECT DISTANCE DIALING

AS THE FUTURE "shape" of the new New York Central becomes more clear, the railroad is moving toward a greatly expanded and modernized communications plant.

This is natural. Just about all the new techniques that are helping NYC improve its service and efficiency require rapid, reliable communications. And two forms of communications are getting special emphasis. They are direct distance dialing of telephone calls; and transmission of business-machine data.

Both require large numbers of communications channels. That is the main reason why NYC sees microwave radio in the future. Indeed, it already has some microwave in operation.

This does not mean that NYC plans to completely dispense with line wires. Wires on pole lines — their capacity augmented by carrier equipment — will continue to be used, especially on sec-

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VHF is used in many ways, although Central has delayed applying it on a large scale to road trains. Here, protection forces use it to guard against stone throwers in the New York commuter zone. Linked in this communications set-up are trains, cruising railroad police cars, foot officers and the road's New York headquarters.

#### COMING: MORE MICROWAVE CONTINUED

ondary and branch lines. But the heavy-traffic segments of the railroad will, eventually, rely mainly on microwave.

"We have planned a microwave system for the entire railroad," says R. C. Karvatt, Director of Communications. "We hope to put it in from New York and Albany to Buffalo, Cleveland and Chicago; also from Cleveland to Indianapolis and Toledo to Detroit."

"Our proposed system could carry 240 channels," Mr. Karvatt adds. "We would have a maximum of 120 voice channels and use the remaining space for data handling. This would allow us to take over our car reporting system, which now uses leased lines, inaugurate systemwide direct-distance dialing and install automatic teletypewriter switching."

#### Microwave at Big Four Yard

Central is already using microwave from downtown Indianapolis to the new Big Four Yard at Avon, Ind. And, it is preparing to install a microwave system between Syracuse and Buffalo to replace 140 miles of pole line that paralleled the old West Shore route. When the West Shore tracks were abandoned, it was decided to put in microwave, rather than construct a new pole line along the main-line right of way. Collins equipment is being used at Indianapolis. The Syracuse-Buffalo line will have 30 channels initially, with drops at Rochester.

It will be some time, of course, before NYC becomes essentially a "microwave railroad." Meanwhile, modernization of the road's existing wire systems has helped speed the flow of telegrams and operating reports.



CAR INSPECTOR at Buffalo uses walkie-talkie to report any difficulties found in check of cars on through passenger train. Central has more than 200 portable radio sets working with 96 base stations, serving industrial and terminal areas and yards. M/W forces also have portable sets and will soon be using more. Every major yard has its own well-equipped radio maintenance shop.

## Yard communication facilities include radio, tone signal paging, industrial television



CENTRAL'S first microwave link connects Indianapolis office building with Big Four Yard office at nearby Avon. Shown here is some of the equipment at the downtown office building. NYC plans a 240-channel microwave system, to cover all heavy-traffic segments of the road.

Today, NYC's wire system, including many thousands of miles of carrier channels, totals 155,308 miles. This includes 30,000 miles of carrier added since 1946. NYC uses Western Electric carriers, both C and H types, as well as Federal and Lenkurt equipment.

At the same time, Central has eliminated some 800 miles of branch pole lines, in addition to the 140 miles on the West Shore. Says Mr. Karvatt, "When you abandon a branch track, you obviously no longer have need for any communications. On other branches we have greatly reduced the number of stations. In those cases we can remove our pole line and use the facilities of commercial telephone companies."

Since the end of World War II NYC has modernized many of its PBX boards and installed automatic exchanges at some points.

As a result, its prewar PBX total of 62 has been cut to 47. Already direct distance dialing is in effect on the P&LE and on a portion of the Eastern District. Message circuit dialing is being tested; and more "DDD" is planned.

Central now has 42 long-distance message channels out of its New York office; but they are badly overloaded. DDD will require 100 channels, but will actually be far more efficient. "If you're lucky enough to get a channel now, you're likely to hold onto the connection as long as possible," Mr. Karvatt explains. "That means many delayed calls. With direct dialing you might make more calls but they would be shorter ones."

To help expedite traffic out of New York, recording machines have been installed in the "Q" office there. Anyone can dial 2112 and "talk" a message for Chicago onto the recorder. The operator then puts the message onto a teleprinter circuit. At present this service is in effect only from New York to Chicago.

#### Mechanized Car Reporting Uses Leased Circuits

The mechanized car reporting system (See Operations) is served by 7772 miles of leased AT&T circuits. It places 69 NYC freight yards in direct touch with each other through switching centers located at New York, Cleveland and Indianapolis.

What about train radio? Although NYC's yards and terminals are well-blanketed with radio systems, the road has made only a small start in "radioizing" road trains. One problem has been that with locomotives operating anywhere on the railroad, it has not been considered feasible to equip just part of the locomotive fleet with radio.

"Caboose power is another problem," Mr. Karvatt notes. "We've been experimenting with thermal power, and also with an air-driven generator. This would be driven by air from the brake line."

The slow beginning, however, will have one benefit: When NYC does go ahead with large-scale train radio, it can take advantage of the newest and most advanced techniques. And, train radio can be integrated with the planned microwave.

"When we get more microwave we will be able to put the VHF antennas on the microwave towers, and use channels in the microwave for control," says Mr. Karvatt. "That will give us better coverage. Of course we will use transistorized sets."

As already noted, NYC system is well-equipped with yard radio. Its industrial and terminal areas, and classification yards, are served by 448 locomotive and 405 portable radio sets working with some 127 base stations. In addition, M/W groups now have 30 portable sets and will soon be using more. Harbor tugs use radio. Every major yard has its own radio maintenance shop, equipped with test instruments and, in most cases, also with a screen room.

#### Protection Forces Use Own Radio Networks

In the New York Metropolitan area two "tone signal" paging systems are in use. Eight supervisors and other personnel at Grand Central and 18 at Mott Haven carry small pocket receivers. Coded tone signals are transmitted from the base station to these receivers. When he hears his own code signal, a man knows he is being paged. He goes to the nearest telephone or intercom outlet. The system was supplied by Stromberg-Carlson.

At six major NYC cities, the railroad has set up its own property-protection (police) radio networks. With its base transmitter in the Chrysler building, the network at New York covers a 50-mile range.

Central has also been alert to the possibilities in industrial television. TV car checking systems are in use at the Robert R. Young Yard in Elkhart and the new Big Four Yard near Indianapolis, as well as at the P&LE Gateway Yard at Youngstown.

NYC's management is well aware of the importance of good communications. The planning of a new comprehensive, integrated communications system meeting not only the usual needs but data-handling as well, has taken considerable effort.

New York Central's communications network will be the key to progress in building the "Road to the Future."





## “Maximum Use of a Minimum Plant”

CTC gives Central's traffic a big push, cuts trackage, saves on maintenance

**T**HE NEW YORK CENTRAL SYSTEM was the first railroad to use Centralized Traffic Control.

Back in 1927—33 years ago—NYC installed 44 miles of this then brand-new system for operating trains. It was the prototype for the 30,000 odd miles of CTC now used in the U.S. The original installation is still in service on single track between Stanley and Berwick, Ohio.

But despite this pioneering, Central made little further use of CTC until recently. This is not too surprising. In the early days, CTC was thought of mainly as a way to increase the capacity of a single-track line.

But when Central's new management took over in 1954, it realized that CTC could do much to save money through reducing physical plant—and at the same time it would speed up traffic.

Thus, as L. S. Bottinelli, Chief Signal Engineer, puts it, “Our major effort has been directed toward providing signaling that

will give maximum use of a minimum plant. That means CTC.”

The “new” Central has taken a typically aggressive and imaginative approach toward signaling. It studied all the main lines to see where CTC might profitably be employed. Then, (as funds have permitted) it has pushed ahead with the job of putting it in, starting first with the divisions where the return would be greatest.

Early in 1957, Central proudly completed the first segment of a projected systemwide CTC program. This was the Erie Division line between Cleveland and Buffalo. (See *Modern Railroads*, March 1957, p. 85.)

From two control machines at Erie, Pa., dispatchers now direct all train movements from Bayview, N.Y. to Nottingham, Ohio, about 163 road miles (386 track miles). This CTC made it possible to eliminate more than 220 track miles of third and fourth track—converting the line from a four-track to a two-track railroad.

Previously, passenger trains had used two high-speed tracks;

NEW-TYPE traffic control machines at Rochester typify New York Central's latest installations. A pioneer in use of centralized traffic control, Central will soon have CTC all the way from Chicago to near New York City. It has permitted elimination of two tracks in most four-track territories.

freights, on the other two tracks, were restricted to 25 or 30 mph. Now, all trains use the two reverse-signalized high-speed tracks—and freight trains run at 60 mph instead of 30. Recalls President Alfred E. Perlman, “I was very much frustrated when I first came here and rode a New York Central freight over that territory. The Nickel Plate freight trains were going by looking like passenger trains (NKP's main line parallels the Central in this area). That does not happen today.”

“That first stretch of CTC between Cleveland and Buffalo gave us an estimated saving of 87 percent on the investment,” Mr. Perlman adds.

With the resounding success of the Cleveland-Buffalo CTC, Central went ahead with other major CTC projects on its busier lines. Two other segments on the Chicago-New York line—Toledo-Elkhart; and Buffalo-Syracuse—now operate more efficiently and at lower cost because of modern CTC. Other important CTC projects have included Jackson, Mich. to Elkhart, Ind.



HIGH-LOAD DETECTOR is a recently-developed device. When a passing load is dangerously high, it interrupts a light beam and sounds an alarm.

SPRING RETARDERS, installed at Big Four Yard, stop cars when they approach the fouling point. They're more effective than conventional skates.



(Northern District), and Pana-Lenox, Ill. (on the Southern district). When all projects now underway are completed, Central will have some 3700 track miles of CTC. This will include the New York-Chicago line between Croton, N.Y. and Englewood, Ill. as well as important sections of the former Big Four and Michigan Central routes and the Ashtabula-Youngstown line. The Pittsburgh & Lake Erie has also installed considerable CTC.

Originally, the Boston & Albany line was to have been “CTC-d” also. But this project was postponed until the future traffic pattern of the B&A became more clear. “We are now restudying the B&A,” says Lou Bottinelli, “because we feel that its traffic will stabilize somewhere close to the present level.”

All of NYC's new main line CTC installations have used the GRS Synchronscan system of control. The two machines at Erie are of “conventional” design; but all subsequent installations between Elkhart and Albany use GRS “Trafficmaster” consoles. This machine (in which a single group of buttons is used to control

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RAIL SURFACE OILERS used just beyond group retarders at Big Four Yard lubricate wheels and rails, permitting cars to roll more uniformly.



SIGNAL department has installed 37 hotbox detectors on NYC system.

#### MAXIMUM USE OF A MINIMUM PLANT CONTINUED

all functions at each of the remote locations) permits the dispatcher to handle a longer stretch of railroad — without leaving his chair.

Not all of the new New York Central's signaling work has been in CTC, however. When it dropped passenger service on the West Shore between Weehawken and Albany, Central found it could reduce the four- and two-track line to single track and operate very effectively with APB signals (supplementing time-table and train orders) between Little Ferry and Albany.

Although NYC still uses many color-light signals, it prefers the searchlight type for installations that require new signals. "Our old semaphores are just about gone," comments Mr. Bottinelli. For certain jobs — such as highway crossing protection and electric locks — NYC has found overlay circuits to be a valuable newer development. "They are more costly than normal track circuits but they save having to maintain insulated joints."

A number of NYC dispatchers' offices now contain still another new adjunct to modern railroading — the recording charts for hotbox detectors. Central now has 37 detectors — 34 Servo, two G-E and one GRS — which the Signal Department installs and maintains.

"We have eight recorders in the dispatchers' office at Elkhart," notes Lou Bottinelli. "There are another six at Erie. We use only graphic recorders," he adds. "At present, we don't feel automatic detection is worth the additional cost."

NYC has installed hotbox detectors on the road and near en-

trances to the yards. From its experience, it now feels they're more useful at yard entrances, because potential failures are called to the attention of the Car Department personnel on duty at the yard. However, road detectors are still required to pinpoint defective journals which may develop enroute.

Since the end of World War II, NYC has been whittling down the number of attended interlockers on its complex lines. It now has 308 of all types — compared with 500 in 1946. CTC, of course, eliminates many. They are simply included in the centralized control. Automatic and remote-control interlockers have been installed at 34 new locations since 1946. Any railroad crossing at grade is the target for a careful study to see whether a more economical form of protection can be used.

Besides CTC and hotbox detectors, the Signal Department has been deeply involved in still another phase of NYC's great improvement program. That, of course, is electronic yards. When it was opened in 1957, Frontier Yard at Buffalo was the "last word" in electronic classification yards. Within a few months, new developments — included in the R. R. Young Yard at Elkhart — made Frontier look almost "old hat." Now, at the new Big Four Yard near Indianapolis, NYC has again incorporated big advances in yard technology.

Cars rolling down the hump at Elkhart have their rolling characteristics measured twice — once ahead of the hump retarder, and again at the group retarder. At Big Four Yard, the car characteristics are measured just once — on a 2 percent grade approaching the hump retarder. "With the system used at Elkhart we would have required seven sets of computers and associated equipment," Lou Bottinelli points out. "Instead, we needed only one."

Big Four Yard also incorporates the first use of "automatic distance to coupling" compensation. Earlier yards used a treadle to count the cars entering each classification track. This system could not take account of any car that had stopped short on the track. At Big Four, a track circuit locates the last car within a car length — and automatically applies the proper compensation to the speed-controlling computer for the next car.

The six groups of class tracks at Big Four yard are also equipped with Raco rail surface lubricators. This helps stabilize the rolling resistance of the cars on curves; thus it adds to the reliability of automatic humping. At Big Four yard, too, impulse track circuits are used. "With them, we don't worry about loss of shunt," says Lou Bottinelli. This impulse track circuit, incidentally, was developed at NYC's Dewitt Yard, where the railroad worked closely with General Railway Signal Co. on the technique. ■



NYC has abandoned concept of local accounting units. This mechanized equipment in Detroit office handles some jobs for the entire system.

## NYC Sharpens Management Control

Accounting provides

broad range of

control reports to aid

operating, sales people

WITH NEW MANAGEMENT has come a brand-new approach to the accounting function on the New York Central.

Central's Accounting Department is no longer just a "bookkeeping" organization. Instead, under the energetic direction of Financial Vice-President Walter Grant and Comptroller R. E. Kappauf, it has greatly expanded its activities. In the process it has become a true "service department."

Today, Accounting is emphasizing its role in "management control." It supplies the other departments with a broad and growing range of carefully-conceived, machine-produced control reports. Meanwhile, Accounting has continued to mechanize and streamline its own internal operations.

Actually, mechanization of accounting procedures is old stuff on the NYC. Central was one of the first railroads to use accounting machines; one of the first to install electronic computers. With every advance in machine techniques has come a further trend toward centralization of the accounting functions.

"We have abandoned the concept of local accounting units," says Mr. Kappauf. "The preparation of data is being centralized, and that trend will be accelerated with the delivery of our IBM 7070, which is now being programmed."

Actually, Central made its major clerical savings through the mechanization of accounting functions some years ago. More recently, it started to program for an IBM 705 computer. This work was held up, however, when still more advanced machines and concepts made their appearance. "We wanted to wait until compatible programming was developed, so we wouldn't have to do it all over again for the next step," Mr. Kappauf explains. The art of programming has now developed to the point where the work done today will not be obsolete when a more advanced step is planned.

While Central's new 7070 computer will not bring large additional clerical savings, it will further increase the efficiency of the accounting operations. Next step might well be the "total system" concept. This is still just a concept, Mr. Kappauf emphasizes. In it, one source document would be used for all required data, which would be produced at one central computing center. Data would be transmitted directly, without the need for intermediate tape-to-card, card-to-tape steps.

All Central's planning is now aimed toward that "ultimate." For instance, the number of station billing agencies is being greatly reduced. A branch line, for example, may have just one consolidated agency. Customers may call this office toll-free to get full data on all rates and services. The consolidated office also handles all billing. By having one transaction point instead of maybe half a dozen, speed and accuracy are improved — and communications circuits saved. Moreover the customer actually gets better service, because the consolidated agency can have rate experts and other specialists on hand to help him.

This "consolidation philosophy" extends to all the other forms of accounting service — revenue accounting, payrolls, car accounting, even property accounting.

Yet even more significant is the way Accounting is moving to fill the need for better tools of management control. The emphasis is no longer on historical record-keeping, mainly for the benefit of the ICC. Today, timely and accurate cost reports help officers and supervisors in all departments do their work more effectively.

Once past the initial stages, this type of service has been embraced with enthusiasm by the operating and sales people. Says Walter Grant, "The more reports we

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## ACCOUNTING ON NYC BECOMES THE SERVANT OF MANAGEMENT



OPERATIONS accounting has been mechanized, too. Computer is part of car reporting system.

get out the more requests we get from the departments for additional reports!"

The passenger deficit has been one of Central's most critical problems. So it was natural that Accounting's first control reports, begun in 1956, were in this area. The "PCC-2" report, produced monthly (through mechanized procedures, of course), gives a complete picture on the performance of every passenger train on the system. Divided into eight columns, the tabulation shows all **out-of-pocket** costs. These are the "avoidable costs," the ones that would be stopped if the train were eliminated.

With this report the money-losers stand out clearly. Obviously, these are the ones that Central seeks to eliminate. Currently, the report shows only a few trains deeply in the red out-of-pocket; and these are already the subject of abandonment proceedings.

A companion report, PCC-1, details passenger (and combined passenger freight) station revenues and expenses. This one proved revealing, too. "We found we had hundreds of stations where the expenses were in excess of the total revenue of the station before we even performed the transportation service," observes Walter Grant.

### Freight Stations Also Studied

Next, freight station costs were attacked through a similar type of control report. "Here, revenue meant nothing, since agents often handle shipments that are sent collect. So we took all the bills handled at each station and computed the cost per document. We also did the same for tonnage handled across the platform," Mr. Grant explains.

The results of this type of reporting led to the centralized agency plan already mentioned — and a reduction in freight stations from 1155 to 560 today. "Cost controls helped us determine what stations had to go," says Mr. Grant. "Yet the central agen-

cy plan actually means better service for the customers."

Another big accounting project was to set up cost control reports on freight operations. The problem here was how to report this information. Central operates 1000 freight trains a day. The crew costs for the symbol trains change very little from day to day. The cost problem is with the locals and extras.

The reporting plan adopted was to divide the railroad in half at Buffalo. Then, for every two-week period, a cost report is prepared for all the trains on one division in the east, one in the west. This report goes to the district manager and division superintendent. It shows for each train on the division the number of locomotive units; the number of cars and tonnage at departure as well as pick ups and deliveries. It also reports the elapsed time for the train operation; and the payroll costs, including a separation of overtime and arbitrations.

Says Walter Grant, "In this way we cover every division two or three times a year. . . . We avoid swamping the Operating Department, but we still give them the tools they need."

The Sales Department, however, has different control needs. For one thing it requires daily reports of traffic originating by sales territories, including commodity, tonnage and destination. Twenty to 30 such reports are now being prepared daily, using rented time on an IBM 705.

Sales — as well as top management — also wanted to know whether certain traffic was profitable or not. To meet this need, under Mr. Kappauf's direction "standard costs" for movements by different types of freight equipment were worked up and placed on a master deck of punched cards. These are "fully-allocated" costs.

Then, for a sample 10 day period, all local NYC shipments were tabulated, sales

price against the standard costs. All movements were listed by commodity in descending order in terms of the ratio of revenue to standard costs.

### Find Need for Rate Adjustments

Not too surprisingly, the tabulation revealed quite a few shipments that showed less than a 1.0 ratio — in other words they were apparently being handled at a loss. These shipments were studied in detail using the waybills to trace routings, in order to obtain more refined costs. In some cases this refinement revealed that the shipment was actually profitable; but more often it confirmed that the movement was being made at a loss.

The data on these red-ink shipments were then turned over to the rate department. The rate people either initiated a rate adjustment; or, if that was not practicable, advised the salesmen not to waste time soliciting these shipments.

With similar types of control reports, Accounting is helping to put more precise knowledge into the hands of those responsible for other functions. For instance, there's a detailed man-count report that tells how many people are being required to run the railroad, and each department and function. Other reports keep tabs on freight forwarder, LCL and Flexi-Van operations; there's a yard control report; there are budget controls; passenger train on-off counts; and many others.

"We really keep three sets of records," Mr. Kappauf notes. "One set for management control, one for the ICC and also separate tax records."

Today, just as in any modern manufacturing business, Central's Accounting Department is viewed as a servant of management. It continues to perfect its cost control and profit center analysis techniques — just as it also continues to centralize and consolidate its "bookkeeping" operations. ■

## New Look in Materials Management

New stores system, electronic ordering methods help NYC shave inventories



MATERIAL in engine houses and repair tracks is kept at point of use, as at this spot diesel repair shop at DeWitt. Method helps to reduce stocks.

THE NEW YORK CENTRAL'S resurgence over the past several years has been vitally dependent on the ability of its Purchases and Stores department to control costs and extract maximum value from every expenditure.

For when the NYC entrusts the disbursement of more than \$100 million annually to this department, judicious buying and storage concepts must be evolved and practiced if the road is to operate successfully.

To insure that it will contribute substantially to the economic strength of the Central, the Purchases and Stores department relies on product testing and evaluation, mechanized order cards and forms, modern invoice procedures, and revised price methods. Also, storekeeping has been reorganized to reduce investment while increasing distribution efficiencies.

Personal contact, too, is important. H. F. McCarthy, Vice President Purchases and Stores, advocates field trips to foster mutual railroad-supplier understandings and to observe plants at work.

Are these trips restricted to the producers of major items only? "Not necessarily," answers Mr. McCarthy. "It's true that most of our trips are concerned with the bigger, more costly products, but after all, collectively, small items add up to impressive dollar totals over the year, too, and for that reason I've always made it a practice to call at smaller plants that might be in the area of a larger plant I'm visiting."

"And where this matter of personal contact is concerned, we in turn, welcome salesmen who come calling on us with a genuinely useful product or service to offer the Central."

"Besides trips to suppliers, we also find that trips by purchasing people around our own system are important. That way we become acquainted with our forces in the field and perhaps gain a greater understanding of their operations and needs. We can also see the products we've been buying in use, and learn whether or not they're meeting expectations."

Most items bought by the NYC are catalogued and ordered on

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## NEW LOOK IN MATERIALS MANAGEMENT CONTINUED

IBM preprinted vendor cards that are sent through an order-writing IBM machine. When it is not practical or possible to assign catalog numbers, material requirements appear on requisitions and are written manually.

### Purchasing Is Centralized When Possible

The Purchasing department controls all buying on the Central except for field emergencies. Although local purchasing has been extended all over the system, the basic blanket order arrangements are made in the field by headquarters representatives working with local storekeepers. Necessarily, field emergencies must be covered by those responsible for overcoming the emergency and confirmed to the Purchasing department.

Contracts through open orders or prior price, quality, and delivery arrangements are made through headquarters. In order to speed delivery of repeats, stock blanket release orders are sent directly to the local vendor by the local storekeeper. This form also is used for local purchase orders. Tally copies of a blanket release for a local purchase order are mailed to the Accounting department.

Punch card requisitions enable each store to operate independently when it is necessary to purchase competitive or other material not readily available. It has been the Central's experience that this accelerated ordering method does not hinder or endanger quality control when factory or destination inspection is required.

Actual control testing of products and materials is conducted by the NYC's laboratory in Cleveland under the Director of Technical Research. According to Mr. McCarthy, "Our laboratory has been of great aid to us. Those of us in Purchasing don't pretend to know everything and it's important for us to be able to receive expert information before we place an order—after we start receiving delivery, too."

Vouchering of invoices along with approval for receipt of material has been delegated to the Accounting department for mechanical computing and recording. This procedure, along with improved methods for processing invoices and a change in price records, has contributed heavily to savings in payroll costs.

Until it became realigned with Purchasing four years ago, Storekeeping underwent several departmental reporting changes from 1952 to 1956. A program that reduced and consolidated the number of stores from 79 in 1954 to 50 today also decreased manpower requirements by 60 percent—from a count of 1863 to a current total of 747. And stores that formerly required multistoried

operations, such as at Collinwood, have been transferred to a single floor facility.

Today on the Central, material in enginehouses and on repair tracks is no longer kept on storeroom shelves; instead it is placed at point of use. This makes it readily accessible to working forces. The store and work stocks, which were formerly duplicated, are now combined. The result? Decreased investment and expedited maintenance.

The introduction of mechanized procedures in the stores record system has made it possible to replace a 13 item stock sheet with a single item stock sheet, produced by machine and kept in ring binders. Electronic equipment is used for material accounting and to prepare stock book records and associated forms. Punch card tickets originate in the field.

In permitting local storekeepers to go directly to many vendors, the NYC has abandoned the general store concept that it followed at one time. To serve large shops, base stores stock and ship materials from reclaim, as well as items not available for local purchase or release.

Indication that the Central is achieving its objective "to hold the dollar investment to a minimum consistent with maintenance levels" is evident when approximate inventories over the years are compared. These inventories include \$40 million in 1946; \$76 million on May 1, 1952; \$57 million on July 1, 1954; and slightly over \$22 million on January 1, 1960. This latter figure is the lowest modern-time inventory recorded by the Central.

In discussing his department's procedures, Mr. McCarthy explains, "To operate as efficiently as we can, we try to gear our activities to marketing trends whenever possible. For example, in 1958, we tested the demand for second-hand cars and equipment. We gathered all the surplus we had and when we finished, we had an itemized list 18 pages long. Our sales have brought that list down to a single page. Some roads that delayed couldn't sell their excess equipment at reasonable prices. The crest had passed."

"The New York Central policy was to 'clean up the railroad,' secure maximum prices, and avoid the housekeeping and clerical costs of long-term storage."

"And another time we were able to buy some steel at a good price. We stored it for awhile, and as it turned out that steel carried us through the 1959 strike."

### Handling Methods Modernized

In many instances the NYC has revamped existing handling methods to accommodate material shipped in unit packages. For example, items previously carried in open top cars for unloading by crane now arrive in boxcars on pallets for unloading and storage by fork lift truck. To minimize handling, vendors ship material directly to the point of use whenever possible.

All material handling equipment for the system has been coordinated by the NYC. The purchase, lease, assignment, and repair of this equipment is channeled through a Stores officer.

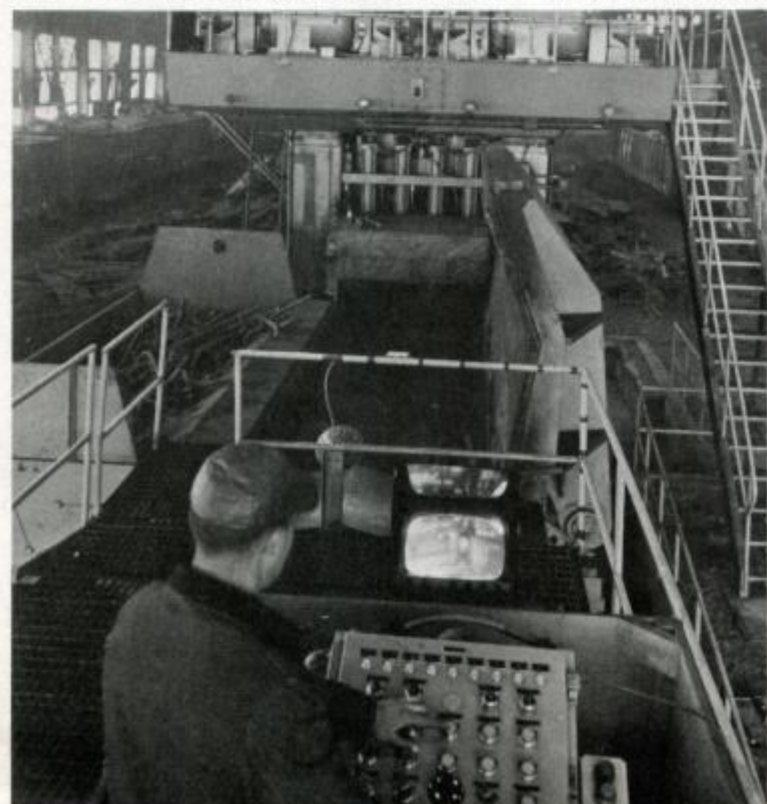
There are five specialized stores on the Central. A single Maintenance of Way store at Cleveland representing an overall consolidation of nine former stores, serves the entire system. This store has considerably decreased investment in material, plant and payroll.

The Signal Store at Elkhart, Ind., serves the System Signal Shop at that point and the Signal department employees over the railroad—functions previously carried out by five signal stores.

At Jackson, Mich., the Maintenance Equipment Store serves the System Maintenance Equipment Shop at that location, and all work equipment mechanics throughout the system. The system's Communication department, evolved from four installations in 1946, is served from West Detroit, Mich. And the system-wide stationery store is located in Cleveland.

Salvage and reclamation for the Central until January 1, 1956 was under the direction of the Purchases and Stores department. This work, which involves track tools and fittings, rail cropping, and car components, takes place at the NYC's Ashtabula, Ohio, plant which is now under the direction of the Equipment department. However, the Purchasing department still sells the surplus scrap and equipment. ■

PURCHASING DEPARTMENT is aggressively selling surplus scrap and equipment. This shearing machine is at Ashtabula reclamation plant.



# NYC Tells Its Story

Advertising and public relations stress

new tools and methods, liaison with press



CENTRAL stresses developing direct contacts between officers and press, radio and TV. Here Vice President Douglass Campbell is interviewed on TV.

WHEN you're rebuilding a railroad the size of NYC, you've got to have the public on your side. It's vital that opinion leaders and laymen—as well as your own customers—understand and appreciate what you're trying to do.

Central well knows the extreme value of good public relations. Douglass Campbell, the man who heads the Public Relations and Advertising Department, is a Vice President on the staff of President Alfred Perlman.

"The object of our public relations work is to have people aware that the Central is a progressively solid and responsible transportation company, led by creative and imaginative management," sums up Mr. Campbell.

To carry out its function, Mr. Campbell's department is divided into two sections. Public Relations is headed by R. C. Marshall, Assistant Director of Public Relations, Advertising is under C. G. Warnick, Assistant Director of Advertising.

"Out on the line," Central now has district public relations directors on each of the railroad's five operating districts. In addition, there are district public relations representatives at Boston and Detroit. All of these men are skilled in press and community relations; and they also "know their railroad." They are supported by a small but effective headquarters staff in New York.

All of the district PR men spend a good part of their time on "community relations" activities. They visit the towns and cities in their districts; talk personally with opinion leaders.

In this vital area of press relations, the goal is to develop closer direct contact between the press and NYC's own officers. This is as true at that district and divisional levels as at headquarters.

Much of the road's public relations work is done for and in cooperation with the other departments. These departments, too,

**Set your sites on the road to the future...the New York Central!**

The plant site you select today might look quite different tomorrow. Water supply, taxes, labor potential are constantly changing factors. The Central's Industrial Development specialists can help you gear your thinking to the tempo of tomorrow. You'll find them to be practical, dynamic, and willing to pitch in and help you. These specialists are at your service. Their knowledge of future trends and developments can contribute to the success of your proposed new plant. Send in for the new series of Central booklets on plant site selection. They are refreshingly informative. Not a word of self. Just helpmanship. Write: Otto W. Fongness, Director of Industrial Development, New York Central Railroad, 486 Lexington Avenue, New York 17, N. Y.

**NEW YORK CENTRAL SYSTEM**

**ROAD TO THE FUTURE**

ADS DEPICT all phases of operations. Advertising men work with industrial development people, promoting plant sites.

are more and more recognizing the value of public relations techniques in their own work.

Thus, the PR Department carries on continuing programs in such areas as freight sales and service; real estate, commuter relations, industrial development and shareowner relations.

### Advertising Acquaints Public with New Techniques

Central's advertising, also, seeks to present to the public a true picture of the way NYC is using the very latest tools and methods to develop "the best transportation system in the world." From time to time, also, Central uses advertising to call public attention to specific problems—such as archaic regulation and excessive taxes.

Here, too, cooperation with other departments is close. Central's advertising talks about all phases of its operations. Typical recent ads have featured the Super-Van service, CTC, electronic yards, improved freight schedules, and so on. Industrial development work is an important part of NYC's advertising program.

Today, NYC advertising is concentrated in on-line newspapers, plus national magazines, business and trade publications.

Central recognizes that the "results" of public relations and advertising work don't usually come overnight. Yet it is encouraged by several recent developments in which organized PR has played a part. For example, there was the recent enactment of relief legislation by the New York legislature (here there was coordinated effort by several departments); the growth of a better public relations "climate" in the Westchester commuter zone; an increasing awareness of NYC's difficulty with excessive taxation; and a growing understanding of Central's passenger service problem. ■



# WHAT OF THE FUTURE?

Created by mergers, Central looks to more consolidation, diversification

THAT there are probable mergers in the future of the new New York Central seems only natural.

For after all, today's Central, like almost all our major railroads, is itself the product of mergers — a whole series of them going back more than a hundred years.

Central's earliest antecedent was the Mohawk & Hudson Railroad Company. This line began regular service between Albany and Schenectady on August 15, 1831. It wasn't until 1853 that 10 short railroads across New York state were consolidated to form the New York Central. Capitalized at birth to the tune of \$23 million (a vast sum for that day), the NYC at first extended only from the Hudson River to Lake Erie. It had 542 miles of track.

It was right after the Civil War that the Central's chief architect — Cornelius Vanderbilt — acquired control of the NYC, became its President, and set out on his legendary career of empire-building.

Commodore Vanderbilt joined the NYC to two of his other properties — the Hudson River Railroad and the New York & Harlem. But his goal was Lake Michigan; and shortly he acquired control of two other lines that were to become major links in today's New York Central System. They were the Lake Shore & Michigan Southern and the Michigan Central.

The Commodore died in 1877; but the system he built continued to grow. Later additions included the Big Four Route and the Toledo & Ohio Central.

Today the Central again looks toward mergers. This

time it's not to "build an empire" but rather to strengthen the system to meet the demands of a new age in transportation. Whatever may develop from the current merger studies with the B&O, it seems certain that more mergers involving NYC will come to pass.

Just as inevitable, too, is at least some spreading out by Central into other types of transportation. Already the company is moving that way. It is expanding the operations of its highway subsidiary, the New York Central Transport Co. Through Flexi-Van, it now provides a service that combines the virtues of rail and truck. And, by agreeing to acquire convertible notes of the Flying Tiger Line, Central has shown its awareness of the potential in air freight.

Thus the future pattern of New York Central System takes shape. With 6½ years of rebuilding, Central has been preparing its property to become the backbone of a much larger, truly diversified, transportation system.

Of course, before NYC can become a truly diversified transportation company — instead of just a railroad — there must be changes in our national transportation policy. Central believes those changes are inevitable.

Is the vast enterprise that had its first beginning in 1831 about to enter a new "golden age" of profitable service to the American people? If the progress made to date continues, that may well be where New York Central's "Road to the Future" leads.

SUPER-VAN train enters CTC territory near Cleveland. Born of mergers, the new NYC is destined to become part of a larger, more diversified transportation system.



## Announcing New York Central's "Big Four Yard" electronic gateway to growing America

The Central has just opened the most modern freight yard in the world. The Big Four Yard, near Indianapolis, is an all-electronic wonder that classifies and forwards freight faster than ever before.

The Big Four Yard is a strategically located gateway speeding freight in all directions, shrinking the distance between the Central's home territory and the great new growth areas of the South and West.

America's shippers recognize the name "Big Four" as a well-known and respected railroad, now part of the Central system. The Big Four has always been associated with top-notch service and dependability.

The new Big Four Yard, gateway to a growing America, is the fourth electronic yard opened by the Central in five years. Each one does the work of several older-type yards. Each is a milestone along the New York Central, Road to the Future.



ROAD TO THE FUTURE





*ROAD TO THE FUTURE*