

MODERN SIGNALS HIGHLY DEVELOPED

RAILROAD signalling to the average person means very little. He sees the red, yellow or green lights change, as he sits leisurely on the platform of a speeding observation car, but does not realize that their purpose is to guard human life, to prevent damages to the millions of dollars of property in transit in the care of the railroad company, and to effect economy in the operations of trains.

A signal is defined as a "sign agreed upon or understood and used to convey information especially at a distance," and the first use of signalling is credited properly to the Indian.

The installation of consecutive automatic blocks was begun on the Eastern division between Tower Grove and Windsor Springs, a distance of 13 1/2 miles in the year 1904. It was extended 14 miles to Eureka in 1906, and in the years of 1910 and 1911 and from 1924 to 1928 the balance of the signals were installed which brought the total mileage on Frisco Lines protected by automatic signals up to 1,100 miles.

Normally, when no train is in the track circuit, current is carried through a wire from battery to one rail usually for a distance of 3,000 feet and then through a wire leading to the track relay, through its coils over a wire to the other rail and returned to the battery. This makes a complete or closed circuit, the current flowing continually through the rails, the signal being at safe or proceed indication, which ever is the case when the train enters this section of track.

Then the signal assumes a STOP or DANGER position and thereby the train in itself controls the automatic block signal. And when a rail is broken in the section of track protected by signals, it breaks the closed circuit and produces the same result as if a train were in the block, causing the signal to produce the DANGER or STOP position. An open switch or car fouling the main line will produce a like result.

The last major development in signalling which is commanding attention, is operation of trains by signal indication without written train orders, by use of a centralized dispatcher-controlled signal system. The en-

Life and Property Well Protected on Frisco by Intricate Mechanism

tire movement of all trains in a specified territory is directly in the hands of the dispatcher.

Through the dispatching machine the dispatcher operates the siding switches and block signals along the line. One train has no official knowledge of the presence of other trains



The above photograph is of a two-arm signal at Harvard, Ark., where trains are handled by signal indication only and no written orders issued.

on the road and the dispatcher establishes meeting and passing points as the immediate conditions require. The machine operating the switches and signals consists of the required number of levers, each lever operating a switch and signals governing over it, and constitute a controlled group which is virtually a small interlocking plant controlled by a single lever in the dispatching machine. All opposing signals of each group are electrically interlocked against each other and the opposing signals of one group are electrically interlocked against the opposing signals of an adjacent group. The signal controls are selected through the switch machines so that switches must be in proper posi-

tion before a proceed signal can be given and these controls are self-checking and the dispatcher in controlling these groups is able to permit train movements providing conditions on the road way are safe.

A system has been installed from Bridge Junction to Harvard, Ark., where trains are handled by signal indication only and no written orders are issued. These signals are operated by a leverman located in the interlocking plant at Bridge Junction. He has charge of all trains using the crossing. The switch at Critton, 10 miles from Harvard is thrown by an electric switch movement under this man's control.

Another important installation is the signal appliances located at Nonco, at the south end of the Yale, Tennessee yards. The switch is normally set for straight track or northward train movements and the position of the points are checked by the signal so if the points are not properly closed the signal will remain in STOP position. For southward train the front trucks of the engine force the switch to proper position and after train has passed through, switch is restored to normal position by springs.

To keep these signals in proper adjustment at all times requires expert attention. The signal maintainer on each division has twenty to twenty-three miles of signals with interlocking and highway crossing signals which he maintains and there are about sixty maintainers on the system.

One of the accompanying photographs shows the interior of a mechanism case which considers the fact that the adjustments in the mechanism must be made to 1/16 of an inch precision, is indeed confusing to the average layman. The explanation is this: in the lower right hand corner of the upper mechanism case is the master relay, known as a line relay which controls the signal mechanism. When the coils of the relay are energized, the contacts are closed for the motor circuit. The motor starts to run, engaging the crank of the slot running the signal to caution or clear position. When the circuit is interrupted or opened the mechanism then assumes the STOP position by gravity.

A standard interlocking plant is an arrangement of switch lock and signal appliances so inter-connected that the movements must succeed each other in a pre-determined order. These plants usually are installed where the routes are so arranged that there are conflicting routes for trains, so that when one route is being used by a train, a conflicting route cannot be set up to be used by another train until the route used by the first train is vacated. At a railroad crossing where these plants are installed, all trains are obliged by law to come to a full stop before they attempt to go over the crossing. The installation of such plants costs approximately \$20,000 and there are a total of seventy of these plants installed on Frisco Lines. Besides these various signal plants, there are installed at high-ways 124 bells and 54 wig-wags.

The workings of this department are perhaps as intricate as any on the Frisco Lines, and the task of supervising, maintaining and establishing the proper signals at the various points on Frisco Lines is under the direct supervision of I. A. Uhr, chief engineer of Springfield, Mo., under whose guiding hand this department has been able to make such a splendid showing.



To the left is a photograph of the interior of a mechanism case, which, considering that the adjustments to the mechanism must be made to 1/1000 of an inch precision, is indeed confusing to the average layman.

Directly below, is a photograph showing the switch at Critico, which is thrown by an electric switch movement under the control of the leverman at Harzard, Ark., five miles distant.



SPUR TRACK PAYS

This little story might be entitled, "Big Oaks From Little Acorns Grow," or "Small but Mighty."

Anyway it is the story of a one car spur track, an enterprising agent and revenue for Frisco Lines of \$14,000 which only represents 35% of the business, the balance, or 65% of the profit being prepaid.

J. C. Lehn is the enterprising agent at Fayetteville, Ark., and he secured a small one car spur track in that city to serve a good business friend, the Fayetteville Mercantile Company.

Although the spur holds only one car during the year of 1928 there were 120 cars of inbound freight unloaded for this company from the spur and 161 cars loaded out by that company from the spur, making a total of 481 cars of freight handled.

"During the year 1928 we only assessed \$2.00 demurrage against this company," Mr. Lehn added.

This is indeed handling the business for Frisco Lines and it is doubted if there can be found another record its equal in the entire Frisco system.

As he sleeps, one Johnny Fonder is rounded a turn without a liner.

SELLING FRISCO SERVICE

Not to be outdone by the radio, the mail and household merchandise, all of which enter American homes, Mrs. Anna E. Riley, Frisco Lines agent at Lindenwood has begun delivery of Frisco tickets into the homes of residents of Lindenwood and adjacent territory to save intending passengers the inconvenience, particularly in stormy weather, of going to the ticket office to buy tickets and make Pullman reservations.

Mrs. Riley answers queries over the phone about local trains, to and from St. Louis and about tickets to points in Mississippi, Tennessee, Arkansas, Alabama, Florida, Missouri, Kansas, Oklahoma and Texas, all of which states are served by the Frisco and queries of those going even farther—to California for instance.

Mrs. Riley soon after each request for a ticket, is a smiling visitor at the home of the intending passenger who is handed his or her ticket and all that remains for the passenger to do is to board the train without a last minute rush to the ticket office.

PRAISES PENSACOLA

An excellent testimonial of agricultural opportunities on the Frisco's new line, from Aberdeen Miss., to Pensacola, Fla., is contained in a letter from M. B. Radden, who, three years ago, moved from Ohio to a farm twenty-five miles from Pensacola. The letter, addressed to C. B. Michelson, colonization and marketing agent, follows:

"I moved here with my family three years ago from North Canton, Ohio, and now live on a farm in Alabama, twenty-five miles from Pensacola.

"We think chances for making a good living on a farm are better here than any place in the northern states we know of.

"I would like to write to people north, where we moved from. I think I could interest some to do like we did move here and help improve the business and live better.

"Now, if I could get some of your booklets to send to them, that would be much better than the writing I could do. I'd be glad to send stamps for mailing them if you wish."

HE MAKES DOLLARS FROM DROSS

STOREROOMS are very often "catch-alls", where old, discarded furniture, trunks and what-nots lodge. Seldom are they taken from the cob-webs and reclaimed. The discard is usually permanent.

But what about a storeroom of great railroads? Perhaps the first logical question might be, have they one? With high rents, storage space is at a premium, yet there must be a storeroom to store records, old files and stationery.

A storeroom which cannot be compared to another in existence has been working effectively and efficiently on the Frisco Railroad under the expert handling of Mr. J. L. Kiburz of St. Lou's.

The system started from the hobby of Kiburz, employed in the office of the comptroller in St. Louis in 1921. His services kept him in touch with records and files. When a file box was found with a top torn, or a flap loose, a new one was substituted. Waste paper was saved and sold, but not on a systematic basis. His hobby was to save and reclaim.

In 1921, Kiburz was appointed supervisor of records under the direct supervision of Mr. E. H. Bunnell, comptroller, and he started in earnest his system-wide storeroom plan.

In 1923 he planned his concentration of records program at Springfield, Mo. Records of the general offices at that point were stored in thirteen different buildings and the search for an old file was indeed a task. Under Kiburz' arrangement the old banana plant of Frisco Lines in that city was converted into a record room and the records of the offices of the railroad company at that point were concentrated in the banana plant, as well as the records from the offices of the system superintendents. The removal of the old records from these various offices resulted in giving more space for desks. Roy Arnold is now in charge of the record room and a phone call from any of the offices at Springfield or a wire from a superintendent requesting a file or information is answered promptly by him without delay at either end.

The Springfield system record room has shelving twenty-two feet high, and the cubic content of the shelving of this room is equal to the cubic content of thirty box cars.

During 1928 there were 1,265,629 pounds of waste paper sold, bringing

Hobby of Frisco Employee Now Saves Road Thousands of Dollars—An Ingenious Reclaiming Program



J. L. KIBURZ

back into the treasury of Frisco Lines a gross of \$10,147.52, which is, indeed, piling up a credit from waste. This total amount was divided as follows: system record room at Springfield, 258,274 pounds; St. Louis record room and building, 376,355 pounds; reclamation plant, Springfield (gathering waste paper from points on line), 631,000 pounds.

But that is only one phase of this storeroom system, and a description of what was done at that point.

In the concentration of the records, desks, filing cabinets and chairs, in fact all manner of office equipment was naturally released. Kiburz was ingenious and promptly removed the excess furniture and turned it to store stock, from whence it is now requisitioned as required.

The Frisco Railroad has not bought a stick of furniture, except for new offices created and new stations, for the last five years, due to this manner of handling, and the reclaimed desks, varnished and shiny, do credit to

those which are purchased new.

The rent of the rooms in the Frisco Building at St. Louis is enormous, and Mr. Kiburz directed his attention toward reducing this cost. Records from each office were sorted, removed and stored in the St. Louis record rooms where there is 20,000 feet of storage space in the Tower Grove station, equal to two large rooms; sixteen rooms at the Inbound Freight Depot and 9,000 feet of storage space on the thirteenth floor of the Frisco Building.

By concentrating records from the general offices in St. Louis in these three storage places sixteen empty rooms were turned back to the building as not needed for office space. A total of 5,927 square feet of space was turned back to the building from 1923 to 1927, a total saving of \$10,253.71. This amount of space has not been increased since. With a new rental rate in effect from 1927 for a period of nine years the total rental saving at the end of that time will amount to \$102,537.

There were 11,910 standard file boxes salvaged in 1928 and put back into use. They are purchased new at a cost of 25 cents each and the approximate saving made was \$2,977.50.

Other containers such as tickler boxes, tabulating machine boxes, script and mileage boxes, which totaled 3,311 containers, made a substantial saving of \$1,262.00.

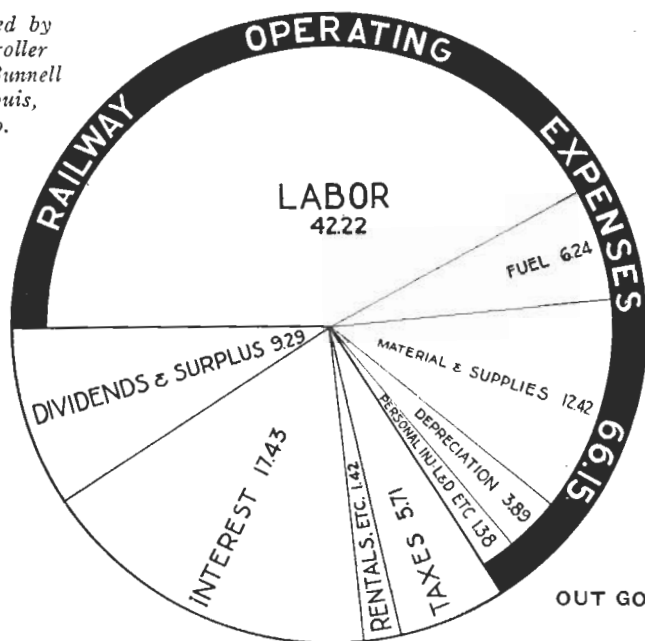
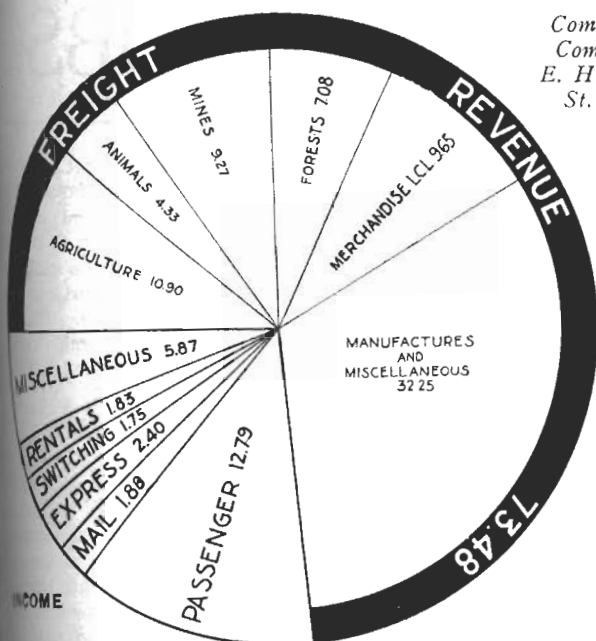
Two binding machines were installed, one in the Springfield record room and one in the St. Louis record room. Bound records conserve space and make for neat filing rooms and a total of 3,405 books were bound at Springfield and 10,554 in the St. Louis offices in 1928.

In order that space may be conserved in each office, when a move is contemplated Mr. Kiburz is called in to give complete change. Perhaps the most pronounced record of efficiency and speed of this department occurred during 1928 on the occasion of the moving of the claims division of the law department from the Frisco general office building at St. Louis to the office building at Springfield.

Ten employees left their desks at 1:00 p. m. on a Saturday in the St. Louis office building, and reported for work in the office building at Springfield on Monday morning, 20 miles away and promptly went to work. The office desks, filing cabinets

The 1928 Frisco Dollar—Where It Came From and Where It Went

Compiled by
Comptroller
E. H. Bunnell
St. Louis,
Mo.



The two charts above show graphically the source of every dollar of Frisco income and its disposition. Unlike a cross-word puzzle, where the objective is fretted out by knowledge, skill and patience, the charts clearly visualize the relative proportion of the various items of income and outgo related to a basis of one hundred cents. It is hardly necessary to say that the main source of the railway's income is derived from transportation of commodities in carload lots or less; however, this is clearly indicated in the chart showing that 73.48 cents of every dollar is produced by that particular branch of service.

Transportation of persons, mail and express matter produces 17.07 cents, switching 1.75 cents, rent of facilities and rolling stock 1.83 cents. The remaining 5.87 cents designated on the chart as miscellaneous, includes an allowance for transportation of men engaged in and on material used for construction work; dividends from corporate investments, interest on bank balances, etc.

But this one hundred cents does not remain long in the Frisco's treasury. Out of every dollar earned 42.22 cents is paid for labor; 6.24 cents is required to feed the iron-horse and 12.42 cents represents cost of replacement

material and miscellaneous supplies. Depreciation of rolling stock takes 3.89 cents and payments for personal injuries, loss and damage to property amounts to 1.38 cents. These items, representing operating expenses, total 66.15 cents or approximately two-thirds of every dollar. Then Uncle Sam and his stately family take a cut of 5.71 cents for taxes; rent of facilities and rolling equipment requires 1.42 cents, and interest on funded debt amounts to 17.43 cents, leaving a balance of 9.29 cents available for dividends to stockholders, for additions and improvement and other corporate purposes.

and equipment were in as perfect order in the Springfield office as they were in the office which they had left in St. Louis and there was no interruption in the work of either accident prevention department, nor was there an interruption in the work at the St. Louis office of J. L. Kiburz. His reported for work in St. Louis today morning.

Kiburz is the only man on the road who handles the records of the entire system, irrespective of departments. E. H. Bunnell, comptroller, is the only man on Frisco Lines given authority by the Interstate Commerce Commission to destroy old records and ever so often an order is sent to agents and superintendents to destroy old records. These are issued by Mr. Kiburz and the useless ones destroyed and the valuable

Payments by the Metropolitan Life Insurance Company to insured officers and employees during January, 1929, totaled \$40,354.79 divided as follows:

Shop group, health, \$4,330.44; total and permanent disability, \$1,276.01.

Supervisory group, total and permanent disability \$2,193.04; death, \$26,000.00.

Clerk's group, total and permanent disability \$1,134.30; death, \$5,421.00.

ones, according to the I. C. C. rules, are stored. Kiburz has stored the original payrolls dating from 1863, for all employees on all lines purchased to make up the present parent company. Also every improvement order for

addition and betterment work from 1863 to date has been stored away and these records are used constantly. Many of these records are used in valuation work and are vitally necessary.

These are the high lights on the work which started with just a hobby. The smaller items, such as dictaphones, typewriters and stationery which come under this man's conserving eye have not even been mentioned. Only items which saved in thousands the price of new articles, have been mentioned.

Lies slumbering here one William Lake; he heard the bell, but had no brake.

At 50 miles drove Allie Pidd; he thought he wouldn't skid, but did.

At 90 miles drove Eddie Shawn; the motor stopped, but "Ed" kept on.

NEWS of the FRISCO CLUBS

Fort Worth, Texas

W. O. MOORE, chief clerk to the vice-president and general superintendent of the Texas Lines of Frisco Lines, was re-elected president of the Frisco Employees' Club of Fort Worth, Texas, at the annual meeting held January 12. Miss Leda Belle Durrett was re-elected treasurer and will assume, in addition, the duties of secretary.

President Moore has appealed to Frisco employes within the Fort Worth Club's territory to lend their co-operation in an effort to make the club one that will "command the admiration of other clubs, our employers, and the railroad in general."

"Let's forget departmental lines," said President Moore, "and any personal or petty differences, and resolve to pull together during the year 1929 for the common good."

The club at this meeting decided to drop the monthly dues of fifty cents and to endeavor to take care of the club's expenses by popular subscription. Membership cards are no longer necessary in the Fort Worth area and each employe is considered a member of the club.

Joplin, Mo.

Beginning with the February, 1929, meeting of the Frisco Employees' Club of Joplin and continuing in effect for some time, various departments of the Frisco at that city will have charge of meetings of the club. L. S. Baney, its president, announced after the club's meeting of January 16.

This meeting was attended by approximately 50 men and women. A check-up of results of recent tips given by members of the club showed: Five passengers to New York, eleven to Kansas City, one to St. Louis and 1,500 pounds of freight to Chicago.

More than enough money was raised to finish paying for the club's piano, and the surplus was placed in the flower fund.

Sapulpa, Okla.

Leonard Wright, completion report clerk of the accounting department, was elected president of the Frisco Employees' Club of Sapulpa at the club's semi-annual meeting held January 22. Miss Maurine Mahan, stenographer, accounting department was elected secretary-treasurer. Vice-

The second annual meeting of Presidents of Frisco Employees' Clubs was held at Pensacola, Fla., February 25, 26 and 27. Obviously the meeting was held too late in the month for inclusion among the news events chronicled in this issue of the Frisco Employees' Magazine.

The April issue will contain a complete report of the event, with pictures. Tentative entertainment arrangements for the sixty-five presidents invited, included: motor tour of historic Pensacola, boat trip as guests of the Pensacola Chamber of Commerce, banquet as guests of Frisco Lines, airplane rides at Pensacola Naval Air Station, through courtesy of Admiral J. J. Raby, and addresses by S. S. Butler, general traffic manager; E. H. Bunnell, comptroller; J. W. Nourse, passenger traffic manager, and H. L. Worman, superintendent of motive power. The meeting was in charge of W. L. Huggins, Jr., chairman of the central committee on personnel.

presidents were elected as follows: Quin Baker, Mr. Mitchell, H. McAlister, George Duke, W. H. Smart and F. J. Cooper. All were elected for the ensuing six months. Mr. Wright succeeds Mr. Baker and Miss Mahan succeeds Miss Jennie F. Aitchison.

The meeting was called to order by Mr. Baker, who read several notices sent out by the department of publicity, and owing to the illness of J. A. Macmillan, chairman of the finance committee, also read the financial report. Mr. Wright made a hearty acceptance talk and promised to do all he could to have a successful term.

Decision was reached that the club sponsor a juvenile choir, composed of employes' sons between the ages of eight and fifteen. The choir will be directed by Leonard Wright, who is a talented singer.

Clinton, Mo.

Twenty-six persons, including eight visitors, attended the meeting of the Frisco Employees' Club of Clinton, Mo., held January 20.

Arrangements were completed for

the annual ball and banquet scheduled for February 2 at the Masonic temple. Communications read included a letter from Congressman C. C. Dickinson, in reply to one the club sent him, asking that he support retention of the Pullman surcharge. The congressman gave a favorable reply. President A. T. Laney talked on Frisco business.

Drummond, Okla.

Report was made at the meeting of the Frisco Employees' Club of Drummond, Okla., held January 26, that, as a result of the recommendation made by J. T. Howell, secretary of the club that each club member, when purchasing coal from local dealers, request coal originating on Frisco rails, one of the coal dealers at Drummond purchased a car of coal from a mine on Frisco rails and employes purchased a supply and boosted the sale of the car of coal. As a result, the car was sold out and another car was ordered within ten days. For several years previously the Frisco received only an eleven-mile haul of all coal sent to Drummond.

Report was made, at the meeting held January 26, that the club obtained all-Frisco routing on a car of implements which was loaded on another line's rails and which the Frisco received in switch service at point of origin. Previously, cars from the shipper sent to Drummond came to the Frisco at Enid, the Frisco receiving only an eleven-mile haul. The meeting was presided over by T. T. Cowley, president.

Oklahoma City, Okla.

Approximately 200 persons attended the "H. C. Conley Program", given by the Frisco Employees' Club of Oklahoma City, January 17, at the American Legion hall, in honor of Mr. Conley, who was retired January 1 because of his having reached the age of seventy years. Mr. Conley's last title in Frisco service was assistant general freight agent.

The program: H. C. Conley sung by the Friscoettes; vocal solo, "You're a Real Man", by Geo. L. How to the tune, "You're a Real Son of a heart"; reading, Buddy Boy Lynn violin solo, Miss Helen Blake; reading, Brownie Mallory, Jr.; reading, Cecile Rosengren; watch presentation by M. G. Buffington; presentation