

# TRIBUNE TOUR NO. 2

DIRECTLY BENEATH the news room of the Chicago Tribune, which is described in a previous article of this series, is the composing room. The name itself is the historic one applied for years to every newspaper's type department. It is here that written material is composed into type.

The Tribune's composing room, which covers virtually the entire third floor of Tribune Tower and the connecting newspaper plant, therefore is the workshop of the printers. Approximately 300 feet long by 100 feet wide, it is a workshop of vast proportions, yet it is in its size so much as in its unique arrangement and mechanical efficiency that it is amazing.

Laid out and equipped in 1920 under the direction of Leo Loewenberg, its superintendent, it has been enlarged once and modernized from time to time until today it is capable of handling any emergency.

"In planning our composing room," says Mr. Loewenberg, "we arranged to install our equipment so that all work moved in toward a central point (makeup tables), just as in the news room on the floor above all news stories converge on the center desk, which is presided over by the managing editor.

"We probably send our paper to press in shorter time than does any other plant in the country. The Tribune is more flexible as to schedule than any other paper, so we must be able to handle anything at any time. Not long ago we set up and made up twenty-four pages in twenty-five minutes. Our average time for an edition of the daily paper is one-half hour."

Mr. Loewenberg is well qualified to discuss the Tribune's composing room. On Oct. 4 last he observed the anniversary of his forty-five years with the Tribune, during thirty-two of which he has performed the duties of superintendent of the composing room. He learned the printer's trade serving German type for a country newspaper in Washington, Mo., and joined the Tribune force as a printer in 1893, the year of Chicago's first world's fair.

He saw the Tribune's first linotype machine installed in 1895, and is enthusiastic when it comes to telling how machines of this description have revolutionized the newspaper publishing business.

"It is common belief," he says, "that machines throw men out of work, but the linotype did exactly the opposite. The old hand set paper was limited in the number of men it could employ. But there are no employment limits to the mechanized newspaper."

It is to the composing room that newspaper copy comes, by means of a basket conveyor from the news department. It is delivered to the desk of a worker known as a copy cutter. If the story, which we shall trace in this article, is of any appreciable length it can be handled faster by several linotype operators than by one. So the copy cutter shears the paper upon which it is written into relatively short pieces, each piece being numbered to facilitate the assembly of type later, and passes it out to the men who operate linotype machines.

There are seventy-five of these linotype machines in the Tribune's composing room. They are, in reducing everything to its simplest terms, typesetting machines, and are operated by means of keyboards similar to those of typewriters. Employing molten metal to form their type, these seventy-five linotype machines naturally generate considerable heat, but this is more than overcome by a ventilating and air conditioning system that refreshes and cools the air and makes for pleasant and healthful working conditions. This ventilating and air conditioning system operates as well in all other departments of the Tribune plant, purifying the air and holding it at the most desirable temperature and degree of humidity. The frequency of illness in winter has been reduced noticeably since the installation of the air conditioning system.

Of the Tribune's linotype ma-

## Printing the World's Greatest Newspaper

chine, thirty-three are used for setting news type, six for setting headlines, three for making corrections (these are called ring machines), and thirty-three for setting advertisements. In addition there are two metal casting machines known as Ludlows that cast lines of type from hand set molds, two machines that manufacture type (monotypes), and three machines that make rules, borders, and like requirements for the assembly of type.

The regular force of the composing room consists of 280 workers, divided as follows: Eighty-five linotype operators, eighty-one men who set type by hand, thirty-seven proof readers, eleven copy holders, ten apprentices, four monotype operators, three metal men, and thirteen machinists. Over these are thirteen subforemen, an assistant superintendent, and the superintendent. In order to show that the Tribune's composing room force is remarkable for its regularity and continuity of employment, it might be well here to call attention to the fact that of the 280 workers 121 have seen more than ten years of service, forty-six have been employed more than twenty years, twenty-one have been on the pay rolls more than thirty years, and four have more than forty years to their credit. Other departments have similar records of long employment, which shall be touched on

Returning to the news story that we are tracing through this department, we find that it has been set up in type by one or more of the linotype operators. The type is assembled in proper order in column form in a long, shallow receptacle called a galley, and proofs are taken of the story. A proof is a trial impression of type on a sheet of paper, taken for the purpose of examination and correction. Eleven proofs comprise each set taken in the Tribune composing room. Some of these eleven are sent to the Tribune's syndicate department, others go to correspondents of out of town papers who have desks in the Tribune office, and still others are dispatched by means of a carrier to the news room for scrutiny by the editors and copy readers. One proof of each set is turned over to the proof department,

which removes metal from the surface of a cut. If it were not for a highly efficient ventilating and cooling system, the engraving department would reek of acids and be uncomfortably hot from open flames and drying apparatus. As it is, it is a comfortable and healthful place of employment. When a selection has been made from photographs produced by Tribune photographers or obtained from countless outside sources, the photograph thus selected is turned over to the art department for retouching, if this is necessary. It then goes to the engraving department. There by a series of processes involving photography, chemistry, and mechanics the image on this photograph is transferred in reverse to a metal printing plate, or cut.

On the fourth floor of the Tribune plant, adjacent to the news room, is the main workshop of the engraving department. This department overflows into a mezzanine floor above, and its color work is done in separate quarters on the sixth floor.

Employing 111 men, not including those in the rotogravure plant, which is concerned only with the production of Sunday paper features, the engraving department in appearance is a half laboratory and half machine shop. Its extremely intricate machines include eight giant cameras, five etching machines, four printing frames, two acid rocker tubs, three electric saws, two jig saws, four proof presses, three trimmers, and five routers. A trimmer is an apparatus with a circular knife that trims the edges of cuts, and a router is a machine with a vertical turning spindle at the end of which is a cutter

placed in the chase, however, advertisements allotted to the particular page are given their positions within the chase. Then the news type is fitted in around or adjacent to the advertisements. The scene around a row of these chases that are being made ready is an exceptionally busy one as the time draws near for the presses to start. Makeup men are speeding their work in order to finish their pages in ample time. Editors and copy readers from the news room above are on hand, making last minute corrections and eliminating lines here and there to make the stories fit the pages. To an outsider it all appears confusing indeed, although there actually is no confusion. Every-

thing and every one is working to one end—to get the paper out. It is these frequent sessions over the still warm type of the pages that get into the blood of newspaper men!

The shout of "Take it away!" from a makeup man as he gives the final twist to the last bolt, locking his chase . . . anxious eyes casting quick glances at the speeding minute hand of the clock . . . the penetrating odor of ink and benzine . . . the solemn gathering of a ring around the type that bears the type of the front page, usually the last to be locked up. All this and much more leave a permanent

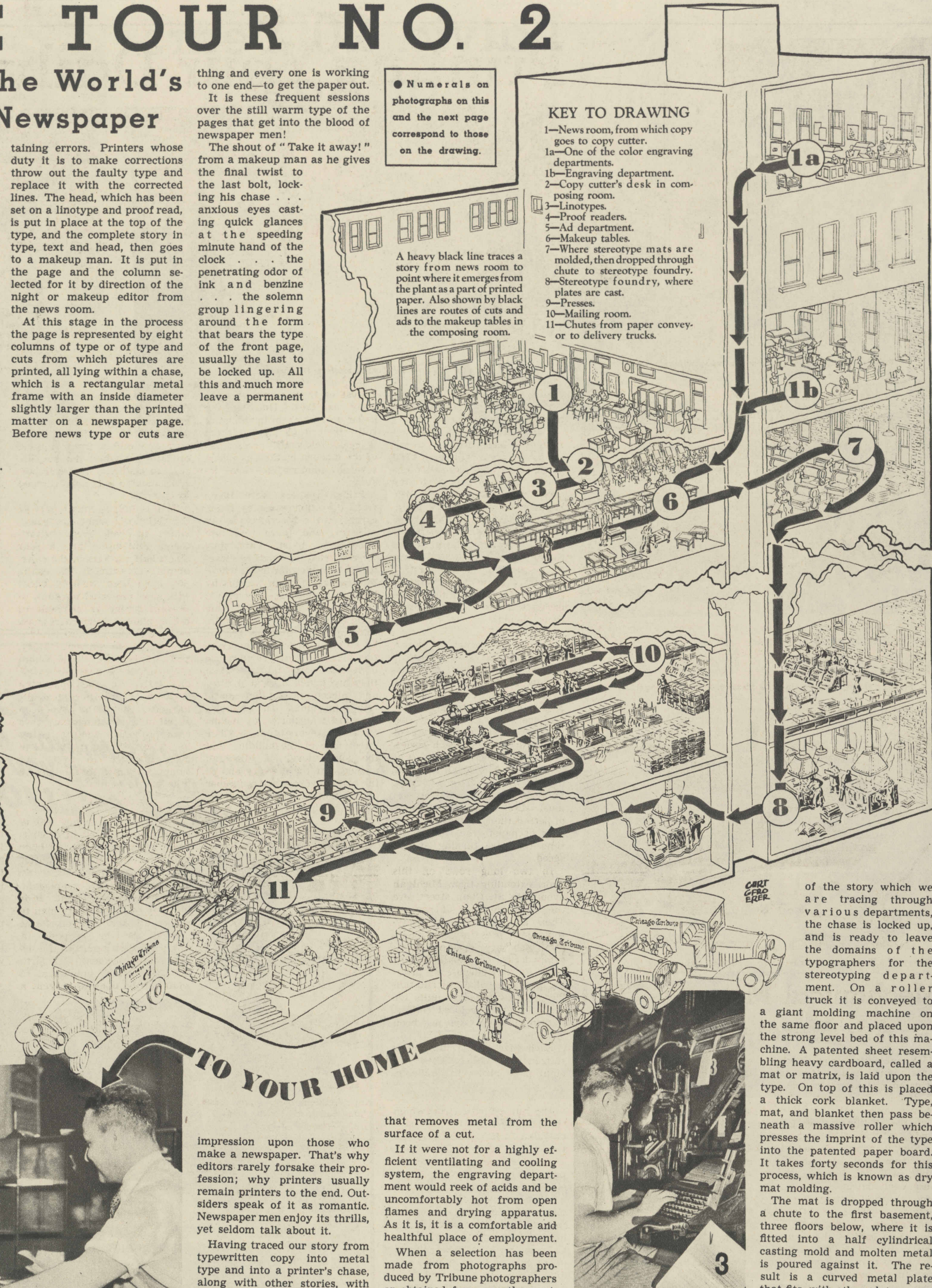
At this stage in the process the page is represented by eight columns of type or of type and cuts from which pictures are printed, all lying within a chase, which is a rectangular metal frame with an inside diameter slightly larger than the printed matter on a newspaper page. Before news type or cuts are

● Numerals on photographs on this and the next page correspond to those on the drawing.

### KEY TO DRAWING

- 1—News room, from which copy goes to copy cutter.
- 1a—One of the color engraving departments.
- 1b—Engraving department.
- 2—Copy cutter's desk in composing room.
- 3—Linotype.
- 4—Proof readers.
- 5—Ad department.
- 6—Makeup tables.
- 7—Where stereotype mats are molded, then dropped through chute to stereotype foundry.
- 8—Stereotype foundry, where plates are cast.
- 9—Presses.
- 10—Mailing room.
- 11—Chutes from paper conveyer to delivery trucks.

A heavy black line traces a story from news room to point where it emerges from the plant as a part of printed paper. Also shown by black lines are routes of cuts and ads to the makeup tables in the composing room.



of the story which we are tracing through various departments, the chase is locked up, and is ready to leave the domains of the typographers for the stereotyping department. On a roller truck it is conveyed to

a giant molding machine on the same floor and placed upon the strong level bed of this machine. A patented sheet resembling heavy cardboard, called a mat or matrix, is laid upon the type. On top of this is placed a thick cork blanket. Type, mat, and blanket then pass beneath a massive roller which presses the imprint of the type into the patented paper. It takes forty seconds for this process, which is known as dry mat molding.

The mat is dropped through a chute to the first basement, three floors below, where it is fitted into a half cylindrical casting mold and molten metal is poured against it. The result is a curved metal plate that fits, with other plates, upon a cylinder of a press. From this and other plates the paper is printed.

During the production of an average daily paper of thirty-six pages three huge molding machines are employed to mold about 200 mats. The work is done by seven men. In casting the plates six automatic casting machines are used, each of which delivers four plates a minute. The plates weigh fifty-one pounds each. For a thirty-six page paper about 2,100 plates are cast, representing a total of fifty-three tons of metal. Twenty-three men are employed in the casting.

For the production of an average Sunday paper 325 mats are required, and 4,300 plates. The last named totaling more than 100 tons in weight. The metal, which is 6 per cent tin, 14 per cent antimony, and 80 per cent lead, and thus varies slightly from linotype metal, which is an alloy of 4 per cent tin, 11 1/2 to 12 per cent antimony, and the remainder lead,

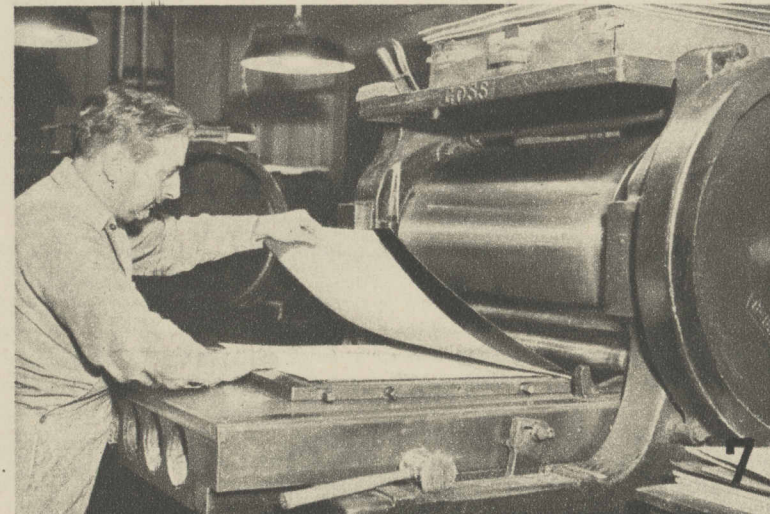
(Continued on page nine.)



Proof readers checking stories for typographical errors.



Makeup editors supervising the placing of type in page forms.



A stereotyper preparing mats from type forms.

## Mechanical Marvels That Are Merely Routine

(Continued from page eight.)

is maintained in a molten state for casting at a temperature of 575 degrees Fahrenheit.

Seven men make mats and thirty-two do the casting for the Sunday edition. (Production of the Sunday paper, where it differs from that of the daily paper, will be discussed in a subsequent article.) The entire force of the stereotyping department consists of fifty-two employees. Twenty-eight, or more than half of these, have been employed in the department more than ten years, four more than twenty years, three more than thirty years, and one, the superintendent, more than forty years.

The aforementioned mats are used for black press printing only. Those employed for casting plates for color work are molded on a direct pressure machine capable of exerting a maximum pressure of 800 tons. The mats in this case are damp, containing about 35 per cent moisture by volume, and require a drying period of about fifteen minutes before they can be used in the casting machines. The problem of register—the printing of each of three or four colors in its exact place on a page—makes this wet mat process necessary in color work, as it provides for greater precision.

Each color, it should be borne in mind, calls for a separate mat and a separate plate. Although color work enters into the production of the daily paper and by no means is confined to that of the Sunday paper, it is in the last named that it is employed to its full limitations. Therefore a more complete description of color printing will be reserved for a subsequent article dealing with the Sunday paper.

Work in the stereotyping department is done under the direction of Robert J. Longmore, the superintendent, whose record for years of service is almost comparable with those of Mr. Loewenberg and Mr. Racicot. Mr. Longmore first came to work for the Tribune on July 4, 1898, just in time to help mold the mats that bore the story of the American naval victory at Santiago de Cuba. On the first day of the previous May, the day that Commodore Dewey fought his famous battle in Manila Bay, he was in the employ of the Philadelphia Press. He had served his apprenticeship in Chicago, however, with the old American Press association, a concern that supplied "boiler plate" to country newspapers. Mr. Longmore, now a Tribune veteran of more than forty years of service, was made superintendent of the stereotyping department in 1902.

The casting machines of the stereotyping foundry are on the same floor—the first basement, or ground level—as the presses. The reason for this should be obvious. It is easy to drop mats from three floors above, since they are relatively light. But 51-pound plates could not be dropped without damage. And it would take time to lower them by elevators. So they are cast upon the same floor that bears the presses.

They are carried to the press room by means of a conveyor, a tracklike arrangement of a long series of rollers that turn beneath a guide plate and push the stereotype plates along. By means of this conveyor the plates are carried directly to each of the black press units. When the plates have been used on the presses they are removed to the stereotyping foundry by means of the same conveyor, a switch being used to place them on the return sec-

# Printing Your Daily Newspaper



The Tribune composing room as it appeared in 1897.

tion of the conveyor. This conveyor, including its return section, is 847 feet long. The plates that carry the story we have been following are locked upon cylinders of the press, along with plates of other pages. Since pages go to the press in inverse order of their importance, the plates of the inside pages first and those bearing later news afterward, it generally is only the plates of the first page that actually have to be rushed in the casting foundry. When everything is ready—all the plates are on the press—the head of the press room shouts:

"Let's go!" An electric switch is closed. A low rumble slowly mounts to a roar as the great and complicated machines that print the Tribune gather speed. Within a few moments these presses are operating at capacity, delivering papers at the rate of 45,000 an hour for each series, or hook-up, of press units, or at the rate of 225,000 an hour for five of these series of units. Four times an hour the presses must slow down momentarily to permit the splicing on of new rolls of paper—the rest of the time they are turning at full speed.

Two long rolls on this floor, extending from Michigan avenue to St. Clair street, are the main batteries of presses. There are on this floor ninety-four black press units, thirteen of which are equipped with color decks, or supplementary units for the purpose of printing pages in color. In addition there are twenty-eight units for the printing of colored comics, sixteen of which have just been installed.

Each black plate unit takes sixteen page plates. These are eight page plates in duplicate.

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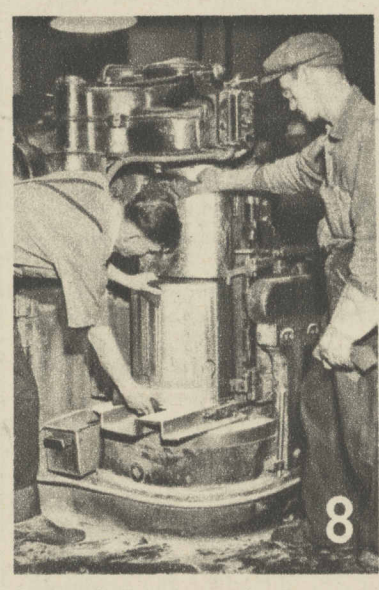
The rolls of paper from which the Tribune is printed are seventy-one inches wide, or twice the width of a double page. They are delivered into the paper room, or reel room, which is the basement directly beneath the press room, by means of automatic cars through a tunnel from the paper warehouses on the north bank of the Chicago river. Each roll of paper is from 36 to 38 inches in diameter, weighs between 1,700 and 1,800 pounds, and contains a ribbon of paper approximately four and a third miles long. A full run of a daily paper of thirty-six pages requires approximately 350 rolls of paper, which, if stretched end to end, would extend more than 1,500 miles. Paper requirements for a Sunday edition are considerably more than double, and frequently triple, this amount.

The Tribune's press room handles more paper than any other press room in the world. Up until about fourteen years ago rolls of newspaper paper were 32 inches in diameter and weighed approximately 1,200 pounds. At the former Tribune quarters at Dearborn and Madison streets these rolls were delivered by wagons directly to the plant, placed upon dollies, small wheeled devices for handling paper, and delivered down into the press room at a time by means of an elevator.

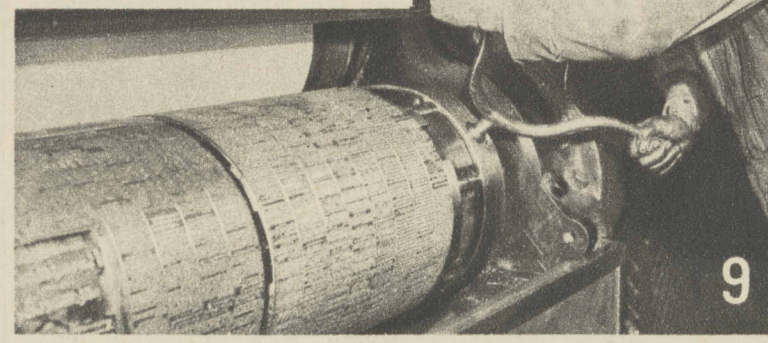
They were delivered to and hoisted up onto presses that usually ran at a speed of 19,000 papers an hour, as compared with the present day speed of 45,000 papers an hour. These old presses, which were the first in the world to be driven by electricity, were the best and

fastest of their times, even as early as 1901. Hoisting the paper up onto them in changing rolls, instead of placing them in reels below the presses, as in the modern method, required several minutes in each instance.

Printed papers were taken from the old presses by hand, carried to the floor above by an elevator, and there tied into bundles by hand. Then they were carried by another elevator to the sidewalk level, where they were placed in wagons by hand. In marked contrast is the present day way of handling printed papers. They are taken direct from the presses by automatic wire conveyors to the floor above, where they are delivered onto tables. Then they are taken, fifty at a time, and placed in an automatic tying machine. The bundles then are transported by means of belt conveyors to the St. Clair street side of the building and the lower level of Michigan avenue. At the delivery end of the belt conveyors are a number of distributing chutes which deliver the bundles to stations



Semi-cylindrical metal plate, cast from molten metal, ready for the press. (Tribune photos.)



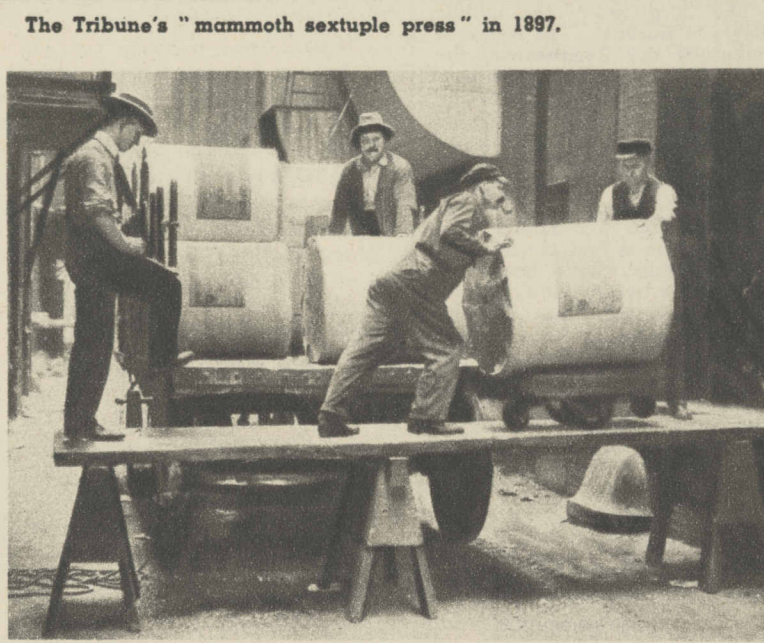
A pressman locks plate on a press cylinder alongside similar plates.

similar accident, and tells what steps already have been taken to prevent further accidents of this type.

From 1935 to 1937 accidents in the Tribune plant were reduced 23 per cent, preferring rather to have all the paper reprinted for a fifty-two page paper instead of adding four pages to make a fifty-four page paper. He made his decision in the interest of producing a better appearing and a well balanced paper.

Here is what happened that morning. The Tribune's press room is equipped to handle any emergency was revealed within recent months when an afternoon paper sent out an S. O. S. Its own presses had been put out of service temporarily by a fire in its plant. The Tribune offered the use of its presses, and, although the other paper's press width of 66 inches was 5 inches less than that of the Tribune's, the presses were readjusted and editions of the afternoon paper were rolled out with no great delay. Ten of the Tribune's ninety-four black press units were utilized in this printing.

The whole story of preparing and printing the Tribune is one of efficiency and speed. The last advertisement for the first edition is taken at 4:30 in the afternoon, and at 6:45 the presses start. But the time allotted for getting news stories ready and



The Tribune's "mammoth sextuple press" in 1897.

printing them is astoundingly brief by comparison. When Joe Louis not long ago knocked out Max Schmeling in the first round of their fight in New York the Tribune's special extra edition carrying the complete story of the bout was on the street in front of Tribune Tower within eight minutes and on the newsstands in the loop in less than ten minutes. This allowed for the editing and setting up of the story, forty seconds for the molding of the mat, one minute for casting the plates, and one minute for putting the plates on the presses.

Although there is a time limit for the receiving of advertisements for each edition, frequently a large amount of advertising comes in at the eleventh hour, causing a complete change in plans for the paper.

Such was the case on the fateful evening of May 6, 1937. The Tribune was scheduled to print forty-four pages in its first edition that evening, when suddenly it was confronted with six more pages of advertisements. The forty-four pages on nine different presses, some 400 plates in all, had to be taken off the presses, thrown back into the stereotype foundry, and recast. That evening the forty-four pages were reprinted to fifty pages, and then, just as the presses started running, came the first news of the Hindenburg disaster.

Mechanically this was a heavy blow to the managing editor. He called the editor by telephone and asked if he could put a "blanket" on the paper. A blanket is a Tribune term to describe four extra pages on the outside of the existing paper, and it represents the easiest way of taking care of an emergency such as this.

The editor decided against this, and instead preferred rather to have all the paper reprinted for a fifty-two page paper instead of adding four pages to make a fifty-four page paper. He made his decision in the interest of producing a better appearing and a well balanced paper.

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Two hundred fifty pressmen and their assistants are necessary to operate Tribune presses at capacity for a full day. Of these, 128 have more than ten years of service with the Tribune to their credit, twenty-six have more than twenty years, and four have more than thirty years. Their chief, the superintendent of the press room, is Edgar Mahar, a veteran in years of service. He first came to work for the Tribune in 1900, and was elevated to superintendent in 1910.

Because turning wheels and moving gears are likely to present a source of danger, the press room is provided with a nonslip floor, to prevent pressmen and others from slipping or falling against the machinery. In addition, wherever possible, moving parts are covered by guards.

But the time allotted for getting news stories ready and

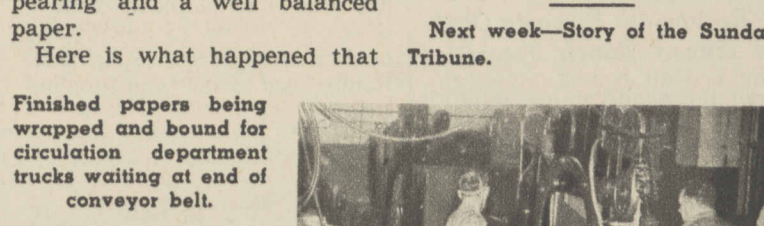
illustrative of another type of emergency that proves costly but nevertheless is met by the Tribune with the best interests of its readers in mind is that more pages of advertisements. During the night sixty-seven press units were thrown into action, and the stereotyping foundry cast 3,800 plates.

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In an edition of the paper of Aug. 7, last, there was printed the statement that the missing Hawaiian Clipper, the Pacific plane which had disappeared on a flight from Guam to Manila, had been reported found. After 16,000 copies of the Tribune bearing this statement had been printed and sent out the report was contradicted. The Tribune recalled all of these papers before any of them had fallen into hands of readers, suffering a loss in money and circulation rather than allow the misstatement to go out.

And so it goes! Exigencies may come up during the course of getting out the Tribune that will demand a complete change in plans for the news room, the engraving department, the composing room, the stereotyping department, and the press room.

That is why these departments are manned and equipped to meet emergencies. Next week—Story of the Sunday Tribune.



Finished papers being wrapped and bound for circulation department trucks waiting at end of conveyor belt.



Finished papers being wrapped and bound for circulation department trucks waiting at end of conveyor belt.