

## CHAPTER VIII

### LINE DELIVERY

#### When to Replace Delivery Slide Long Finger Block

**QUESTION:** I have been told that the long finger block is badly worn and should be replaced. These are expensive, and I would like to know how you decide this. — R. E. C., Mendenhall, Miss.

**LOOMIS:** I replace this block in one of only two situations: 1, when the long finger is canted so far backward that it rubs against the assembling elevator when the line is sent up; 2, when the delivery slide bar (the one with the notches to set the long finger) is canted so far down that the clamp is nicked by the first elevator back jaw. I have seen some of these get pretty worn, but as far as I can see, if one of these two situations is not present, there is no point in changing the block. I'll tell you a secret: a new block invariably has to be filed considerably to work freely in the slide, and often after you've got it fitted, you will be dismayed to find it is as sloppy as the old one.

#### What Lubricant to Use

**QUESTION:** A young war is raging in our shop. The night man put oil on the line delivery slides, and the day man hit the ceiling. He insists nothing but graphite should be used. Can you settle it? — L. T. S., Mill City, Wash.

**LOOMIS:** The overwhelming consensus seems to be for graphite. I prefer it myself. I put it on with a toothbrush, and it seems to maintain lubrication longer than oil — which I have tried deliberately. One bad thing about oil: you put it on and it takes a long time to get rid of it, daily washing out with gasoline, etc. It seems to go into the pores of the cast iron and come out gradually. I have also tried kerosene, which doesn't last. I keep a squirt can with white, unleaded gasoline and graphite. This is a good way to apply it.

#### The Long and Short Fingers

**QUESTION:** Should the short finger be straight, or should it be bent? — T. D. S., Winona, Mo.

**LOOMIS:** The short finger on old machines works best with a little curve to the right, to avoid hitting mats as they go up.

The long finger should be straight up and down. The new split ones are good, but not applicable to machines with old style delivery carriage, though you can buy the whole works. If you use a split finger, don't make the long flat copper spring too strong, or it will push mats out of the first elevator jaws.

The small brass friction plate that steadies the long finger should be renewed occasionally. The large screw in the top of the finger is an adjusting screw for spring tension. There is a small screw inside that holds the brass plate. Also, the surface where the brass plate rubs should be graphited. Turn up the headless adjusting screw enough to provide definite pressure on the plate.

#### **Long Finger Crawls to Shorter Measure**

**QUESTION:** I am having a heck of a time. We have a Model 8, and I get the clamp set to hold the long finger at 13 picas. I send a line over and look up and the long finger is at 10 or 11 picas. This happens consistently, and I cannot understand it at all. — N. R. T., Thief River Falls, Minn.

**LOOMIS:** This can be tricky, but it's easy when you know. Either the line delivery slide block is worn and canted (see above), or, more likely, the small parts of the clamp are worn, allowing the trigger to fall enough to hit the first elevator jaw. The trigger will hit on the corner of the jaw and be jarred to the right; it will usually show a mark of this. The clamp can be repaired, but I suggest getting a new one. Then it will be good all the way around.

At this time also it is desirable to examine the delivery slide bar on which the clamp fits. If the bar is worn smooth in some of the grooves, or if some of them are deeply gouged — in other words, if you've had trouble with it — this is a good time to replace it. You will need also D-1404, Delivery Lever Link Screw. This is best installed by screwing in tightly and then drilling a small hole from the top of the bar and putting in a pin, but if you tighten it with a good screwdriver, it should stay.

#### **How Can This Screw be Made to Stay in?**

**QUESTION:** The screw that holds the assembling elevator releasing bar (the trailing piece) to the short finger block is always coming out. It hits on the spaceband box chute and gets knocked sidewise. Now the hole is so sloppy we can't make anything stay there. — P. F. T., Pocahontas, Ill.

**LOOMIS:** You have embarrassed me, for I have just looked up and have seen the same screw loose on my Model 15. (Believe me, no machine ever got such a checking as this machine is getting while I do my part of this book on the machine.) But this trouble can be remedied. Get a 10x32 shoulder screw (a bigger size may be needed if the hole is sloppy.) E-1466 is the number for the 10; and get nuts to match.) Drill the hole with a No. 20 drill; tap with

a 10x32; put the screw in place and see that the releasing bar is free to move up and down; otherwise you will have trouble with the line delivery, and it will be very hard to find. If the releasing bar is a little too thick at the end, file it thinner; it won't take much. Tighten the screw and put the nut on the end. That last sentence sounds simple but it isn't always. Blocks differ; often there isn't room to turn the nut, so hold the nut in a pair of Vise-Grip pliers and grind down the sides until it will turn. This is a lot of monkey business, but if you do it right you will be happy.

#### How Fast Should the Line Delivery Go Over?

**QUESTION:** We are up against the old situation — two operators and only one machine. One operator wants the line delivery to slam over; the other wants it to go over softly. They keep changing it back and forth and arguing with each other until I'm almost ready to buy a second machine. That of course is silly. Please tell us how it should be set. — T. D. S., Daggett, Utah.

**HARDING** in the *Graphic Arts Monthly*: I will have to limit my answer to "according to accepted practice," for it sounds to me as if this is an argument. The delivery slide should operate quietly and smoothly. I do not favor slamming or jerking. It not only makes for undue wear but it squabbles lines and damages mats and even causes front squirts. I am aware that when an operator gets into his stride he can be awfully frustrated if he thinks the thing is dragging. Yes, it is enough to throw a man off stride. However, he should accustom himself to the highest speed he can get without slamming.

While we're at it, see that the delivery lever link screw and the hole in the link itself (under the spring) and the delivery lever link stud in the other end of the link are not unduly worn. Let's eliminate all the slack we can.

Now turn the machine over past the casting point and stop it. Send the assembling elevator up without mats and release the line delivery. It doesn't matter how fast it goes over, just so it doesn't crack or bounce. Many air cylinders have had holes drilled in them to allow the line to travel very fast until it reaches the first elevator; this often makes the line delivery slam when it stops at the waiting point.

Take out the piston. Change the leather if worn. Otherwise oil it and oil the walls of the cylinder. Replace the piston. Graphite the line delivery slide. Try it again. If it still slams in the waiting position, cut down the air. If that doesn't work look for a hole, and plug it with a bit of chewing gum and scotch tape. (Well, we've used everything but baling wire.)

**LOOMIS:** I have encountered this difficulty more on Intertypes of certain years, and usually the solution is to get a new line delivery spring. Don't ask me why; I don't know.

### **Adjusting the Line Delivery Slide**

There are two adjustments, one for the delivery stroke, one for the return.

**LOOMIS:** I set the screw in the left end of the face plate so the left surface of the short finger is  $13/32$ " inside the first elevator jaws. Got that? It's easy.

I set the return at the waiting position of the delivery. Back the machine to the waiting position. My idea is to have the right side of the short finger flush with the right side of the delivery channel, so no mats can drop down. If you let it go in too far, it won't come back far enough to latch.

The setting, of course, is on the split hub at the back, with two  $3/4$ " bolt heads that are best reached with a socket wrench. Have somebody hold the delivery slide in position; loosen the bolts; tap the arm until the cam roll is against the cam; tighten; then examine. If you are too far to the left, have your assistant hold it a little farther to the right and try it again. Turn the machine over and be sure the delivery latches when it comes back.

If there is a lot of slack in the joints (sometimes the short finger will move half an inch back and forth), I usually set with the short finger pushed to the left, for it has to be in this position when it returns to be locked.

### **Replacing the Line Delivery Link**

**LOOMIS:** The link (with a flat spring) is designed to come off under stress, such as a mat jamming the line delivery on the way back. It is not as hard to replace as it seems.

If the machine is at rest, reach over the face plate with your right arm and pull the delivery lever back about halfway, at the same time lifting the link to horizontal. The delivery slide usually is at the left. Lean away over and spot the screw that fits in the end of the link. Pull the slide to the right with your left hand. (This is one that can be done with only two arms.) Hold the link to meet it, and push them together. Snap! It's all over. Pretty soon you can do this by watching through the delivery slide channels, and later on without looking at all. Then you get a gold star.

By the way, if you have a Monomelt, wrap a wiping rag around your right forearm and it will be easier.

### **Adjusting the Line Delivery Channel**

**HARDING:** The channel should be adjusted by shims if necessary until it is just wide enough (on both ends) to allow free passage to a new or pi mat in both light-face and bold-face positions. If you have time, file a gauge from an old liner. A new mat measures  $.5625$ ", so your gauge should be about  $.570$ " to allow for older mats with slight deformities. This  $.570$ " gauge, however, should fit the channel snugly.

The channel must be aligned with the first elevator jaws – in or out as necessary.

The rails themselves are adjustable right and left. I have never seen them give trouble on the right, but they must be adjusted on the left, so that at least the thickness of a piece of newsprint is between them and the first elevator jaws.

Here's how: After setting the channels for passage of the mats, take out the two screws and take off the delivery channel assembly. (If your machine has a universal ejector, be sure to unhook the indicator rod and drop it out of the back channel plate first.) Now, with the assembly removed, you can loosen the three screws holding the back delivery channel rail. Turn them up again lightly. Replace the assembly. You can then tap the back rail either way, and when you get it set, take off the assembly and tighten the screws.

LOOMIS: There comes a time on old machines when you cannot get the delivery channel far enough to the rear to align with the first elevator jaws. Usually there is space between the back rail and the face plate, but you will have to take off the assembly and grind a little from the upper boss of the plate, first driving the pin back and making shallow depth marks with a three-cornered file for your guidance in grinding. Usually .005" is enough. If you take off too much, restore it with paper shims. This is a tricky job but often necessary.

Note that on the back plate there is a screw whose head tightens on the mold disk shield (often called the splash shield).

#### **Line Delivery Rails Not the Same Height**

LOOMIS: Once in a great while this happens. Test by laying a piece of brass rule, edge down, across the two. Unevenness will cause trouble when the mats go into the first elevator jaws. You can secure a little adjustment with paper shims under the rails themselves, and in extreme cases you can also loosen the bolt that holds the front plate on, then snug it back, and tap the front plate up or down with a rawhide hammer or a block of wood. Then tighten the bolt firmly.

#### **Why Does the Line Delivery Rattle or Stop Half-way Into the First Elevator Jaws?**

HARDING: The most frequent cause is misalignment of the first elevator jaws.

This will be covered in the next chapter under *Adjusting the First Elevator Jaws*.

**Front Jaw Adjusting Bar**

If this has been turned end for end, you will have to stone a bevel on the right end. As manufactured, it is not reversible without this.

**First Elevator Spring Pawl Broken**

This will stop a line so that it seems almost impossible to move it either way. If you finally get the line over, the next line will do the same thing.

**Line Delivery Goes Over but Machine Doesn't Start**

This is usually maladjustment or malfunction of the automatic stopping mechanism, and in some cases improper adjustment or undue wear of the clutch. These are treated under *Starting and Stopping Adjustments*, page 250, and *Why Won't the Machine Start?* page 252.

**Binding of the Delivery Slide Blocks**

May be caused by improperly fitted new blocks which are loose enough in certain spots, are loose anywhere separately, but bind when together; also by twisted blocks, caused by the long or short finger jamming on return. These blocks are malleable and to a certain extent can be bent back into shape with a fairly large Crescent wrench.

**Slowing Down Due to Swollen Toes**

An occasional line may go over slowly. If there is a noticeable difference between this and other lines, you probably have a mat with a swollen or bent toe. Examine the toes on both sides as soon as the line gets onto the second elevator.

**To Remove the Delivery Slide**

HARDING: Four steps:

1. Push in the clutch lever and open the vise.
2. Send the line delivery over. At the back of the face plate, use a screw-driver under the delivery slide link spring, and separate the slide from the delivery lever.
3. Remove the delivery slide stop screw bracket from the left end of the face plate, and pull out the slide.
4. Notice the relative position of the parts. These can be very confusing when you start to replace them — particularly on an Intertype.

**Squabbled Lines on Intertype**

HARDING: There is a coiled spring around the right end of the adjusting rod where it enters a hole in the short finger. This spring, if broken, will allow lines to squabble. Keep the adjusting rod graphited.

**Last Matrix Falls From End of Line in Elevator Jaws**

HARDING: There may be a number of causes:

*Long Finger Bent to the Left.* Open the vise and straighten the finger with a monkey wrench or a Crescent wrench.

*Misadjustment of Stopping Pawl.* If this allows the machine to start up too soon, the line may not be inside the jaws. See *Starting and Stopping Adjustment*, page 250.

*Worn or Broken Jaw Spring Pawls.*

*Badly Worn Back Jaw.*

**Right End of the Delivery Channel Rails Worn Down**

HARDING: These wear in time — usually from a too-low position of the assembling elevator when the mats go over. They should be repaired or replaced.

**Delivery Channel Aligning Piece**

LOOMIS: This occurs on Linotypes only. (Sometimes too you find a Linotype with Intertype delivery rails.) This is a movable piece pivoted on a small shoulder screw. The screw head should not extend above the surface of the rail. The piece itself should move freely but not sloppily. When the long duplex rail on the assembling elevator is pushed in, the duplex rail finger on the left end lifts the aligning piece to permit mats to go into the delivery channel in the bold-face position. Otherwise raised mats are deflected to the light-face position. The tricky setting is in the finger. It is fastened with only one small screw, and is subject to movement from side to side. It should be set so that it firmly catches the offset in the aligning piece and lifts it, without binding, to its maximum height. On occasion it is necessary to bend the finger a little up or down. Tighten the screw firmly.

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# LINECASTING OPERATOR-MACHINIST

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