

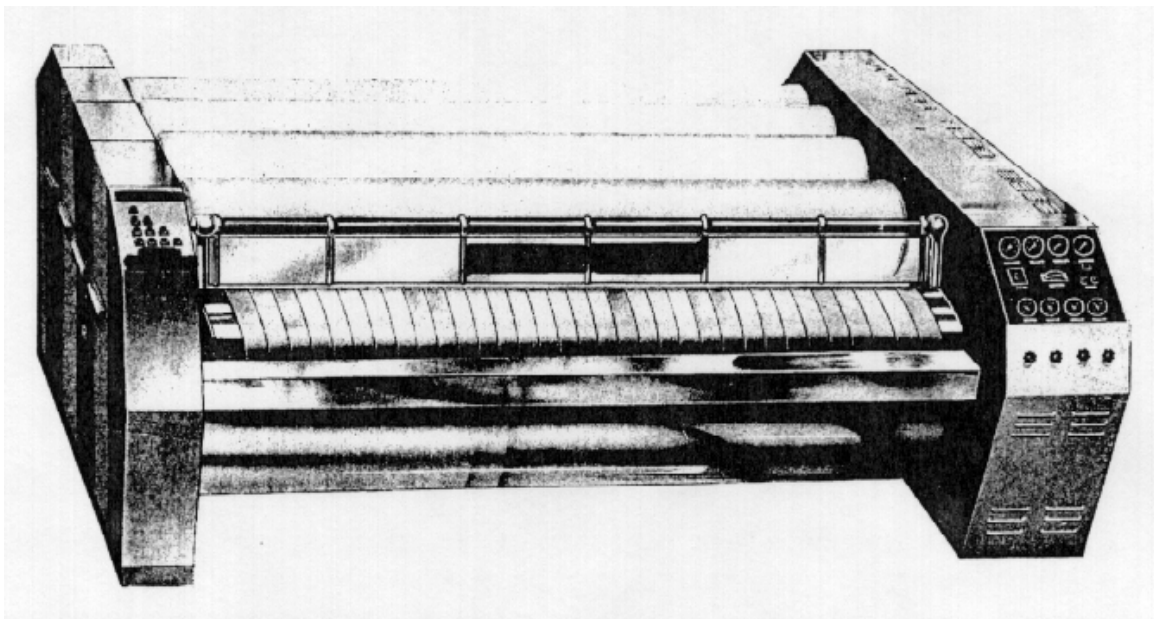
TROUBLE SHOOTING

FLATWORK IRONERS, DRY CLEANING PRESSES

GARMENT PRESSES, AND SHIRT UNITS

The Flat Work Ironer Book

Nineteen Hundred Seventy-four



Cramer Co.'s editorial note:

Much of the material in this publication is dated; there have been numerous advances in materials, techniques and acceptable procedures. However, this guide can be an invaluable resource as most of the information is still relevant. The American Ironers discussed here have not changed since the original publication of this booklet.

This technical information is purely indicative and is given in good faith but without warranty. Guaranties in respect of the existence of certain properties of the products mentioned are only valid if agreed upon in writing. Cramer Co. does not endorse or recommend any brand name that may be mentioned unless specifically stated in writing.

Use of the materials and/or techniques listed should only be done so at the operator's own risk. Cramer Co. assumes no responsibility for any damage or injury that may result from information offered here.

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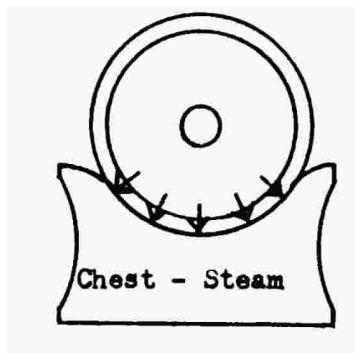
INTRODUCTION

When the book is completed and we understand that an ironer irons and is not a mangle to '*mangle* clothes', we hope to leave you with the knowledge that "True Quality and True Economy are One and the Same Thing", they cannot be separated.

HOW DOES AN IRONER IRON?

Just because we put heat into ironer chests, fill the padding space and cover the rolls, turn on the power and the rolls turn, does not mean the linens fed into the front will come out the back smoothly and neatly ironed. There are four things that must be put into interdependent operation; the four things that do the basic job are the PRINCIPLES OF IRONING:

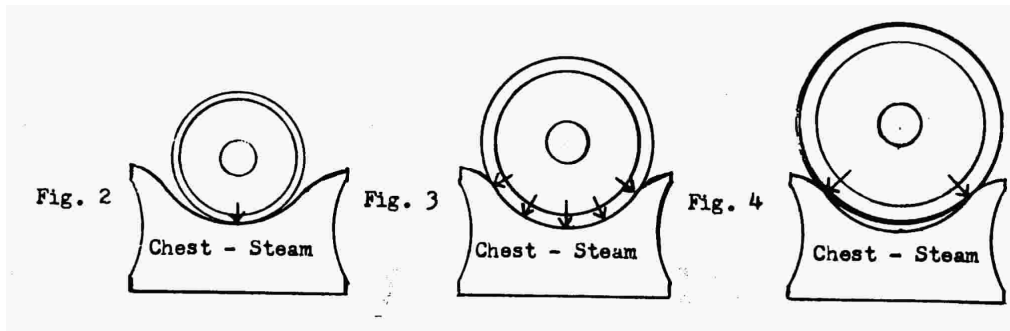
1. Heat from the chests momentarily drives the moisture from the linens being ironed into the padded rolls, directly into the atmosphere over the exposed chest areas. This is how the moisture is DISPOSED of, not absorbed. An aid to moisture elimination is the pull of vacuum from the interior of rolls on some ironers.
2. Gloss, sheen, or crispness is supplied to the sheet by sliding or gliding it tightly over clean, smooth, polished-lubricated chest surfaces.
3. The resilience in the padded rolls absorbs irregularities of cloth, seams, embroidery, etc., and creates uniform ironing throughout the entire cloth areas. In addition resilience forces the rolls to fully fill chest cavities. This is a most important part of mechanical ironing and will be covered in detail later. Refer to Fig. 1 to see how this resilience operates.



4. Much of the drying and finish comes from the sheet being pulled tightly over the chest portions between the rolls. Each succeeding roll MUST be larger than its predecessor, giving that following roll greater circumferal speed so as to keep PULLING the sheet through the ironer, not merely accept it.

These are the four things that make your ironer do its basically intended job. If any one fails its intended function, the other three cannot compensate for it.

ITEM ONE -- HEAT The only way padded rolls get their heat is in their contact with the hot chests. The padded rolls must be hot so the moisture they pick up while in contact with the wet linen will be disposed of rapidly so that point can be sent back into the chest to again pick up moisture. It is logical the greater the roll contact with the chest the more heat is transferred to the roll. Figures 2, 3, & 4 show that in Fig. 2 the roll is too small with little roll-chest contact, Fig. 3 is proper size with maximum contact, and Fig. 4 is too large, again with not enough contact to pick up sufficient heat.



This improper roll size, large or small, is the prime cause of slow drying and ironing.

ITEM TWO -- CLEAN CHESTS Will be covered in Chapter 6.

ITEM THREE - RESILIENCE Resilience in the padded rolls is used to absorb the irregularities of the various cloths being ironed. This RESILIENCE must be substantial enough that the pad containing it will not pack down for long periods of time and keep the linens in contact with the hot chests to the fullest degree possible.

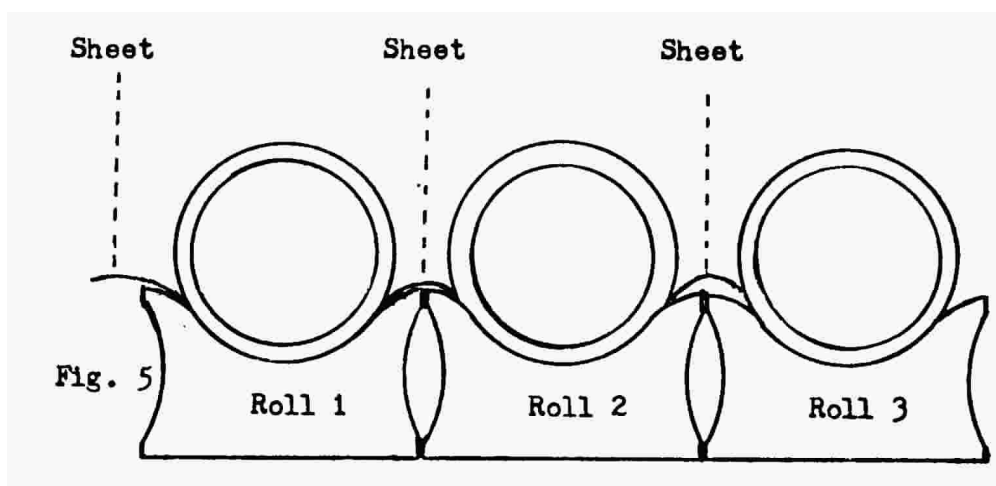
ITEM FOUR -- ROLL SIZE . In this is the complete interdependence of all sections of the Principles of Ironing. In order to show this we'll first try to disprove Item Four: it says that each SUCCEEDING roll must be larger than its PREDECESSOR. This appears false since we know that each basic ironer roll, and chest radius, on any given ironer, is exactly the same. How, then, can we make the succeeding rolls larger in circumference, circumferal speed, and/or diameter? The key word is RESILIENCE, and resilience ONLY.

1. This graduation is accomplished by placing padding on the rolls with enough RESILIENCE that it continually forces the roll out against the chest cavity, as seen in Fig. 1. Expanding outward to "fight" the tendency to be compressed at any point on the roll as it turns tightly into the chest, and then return to original size as that point becomes exposed again.

2. In doing this we do make the succeeding rolls slightly larger with the knowledge that the RESILIENCE will compensate itself as any segment enters or leaves the chest. This gives each following roll a bit larger overall diameter; transpose this to circumference and you have the greater circumferal speed for the "pull" we now know we need; example is roll 2 pulling from roll 1, 3 from 2, etc.

RESILIENCE, then, does three things: 1. Fills the chest cavity for the best roll heat, 2. Absorbs cloth irregularities, and 3. Enables us to get the graduation for the needed PULL through the entire ironer. Most important, though, is it maintains the full roll size.

Fig. 5 shows illustrations of these above mentioned three things. Remember that measured roll size is only indication of amount of resilience left in padding since all basic roll and chest radii are constant on any given ironer. Actually when you measure the size of an ironer roll you are not really measuring the size of the roll but the amount of the resilience left in the padding assembly. Below, roll 1 shows proper resilient roll size, roll 2 is properly larger than roll 1 and is pulling the sheet from roll 1. BUT, roll 3 is smaller than roll 2 and is unable to accept the sheet, let alone pull it, causing the "buckling" of the sheet between rolls 2 and 3.



We can now see that an ironer irons when we have the proper heat, clean chests, good resilience, and proper roll sizes.

PURPOSE OF COVERS. Materials Past And Present

Flat work ironer roll covers, like all supply items on the equipment DO serve a real purpose, they are NOT intended "just to lay there and look pretty". Their intended function is quite important; has much to do with the final finish developed and the eventual life of the padding under them. Let's look into what covers do, how they do it, and how they supply necessities in today's operations.

COVERS ARE USED TO:

1. Protect basic padding from the constant abrasion and tearing as the rolls turn tightly against the chests.
2. Protect whatever is being ironed from the coarseness and irregularities of the padding.
3. Keep dirt from the padding, and to prevent padding particles from adhering to the linens being ironed.
4. Hold the padding assembly in proper position.

In addition to the basic use requirements, covers should have the following facilities:

1. Smoothness and fine weave so they will not imprint linens with any objectionable weave-pattern.
2. Be free from shrinking and stretching that could bring wrinkles and creases that create rapid wear and poor finish.
3. Resistance to burning from the hot chests.
4. Resistance to abrasion as they turn against chests.
5. Be flexible so as to permit padding resilience to operate to its fullest extent.
6. And to last as long and economically as possible.

NORMAL SERVICING. Heat. Pressure. Level. Warpage. Vacuum.

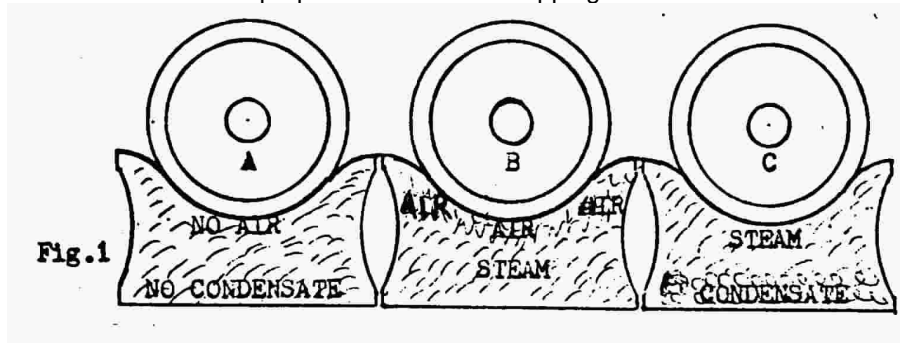
In addition to knowing why ironer's iron, and the supplies needed to enable them to do so, certain mechanical conditions are important. These conditions become integral parts of total interdependency in ironer operation. Safety factors from standpoint of personnel and equipment, even without regard for economical operation, require that these be understood and constantly checked. The five following sections outline what these conditions are, why they are needed, with suggestions for check-service systems to make certain they are always operable.

HEAT The best compliance with the Principles of Ironing, of Padding, and of Covering is useless without heat in chests to perform the moisture elimination-drying part of ironing: "You Cannot Dry Sheets on a Cold Ironer".

STEAM Use the maximum pressure available from boiler, consistent with the certified capabilities of the chests. Using less will prevent maximum productivity. BUT, any pressure over the rated chest capacity brings serious safety problems to personnel and equipment and results in excessive fuel use. Boiler inspections, insurance certificates, and your fire marshall help in determining allowable pressure, but best follow manufacturers ratings for YOUR chests.

We know that few domestic boilers are legally rated for the higher pressures shown for some of the ironers made abroad, so exceeding their limits is unlikely. We also know that there are more oil heated ironers becoming available. However, we have little or no data on them. When in doubt consult with your manufacturer and operating manual.

Steam pressure we must have, yes, but its quality and condition is almost as important as its actual pressure. "Wet" steam will not contain the heat of "dry" steam, but if there is no "wetness" you'll have "air pockets" at the top of the chest interiors. When this occurs you insulate and reduce transferable heat. In Fig. 1 "A" is good, "B" is too dry, and "C" is too wet. "C" could be caused from just plain wet steam or from improper return lines or trapping.



A good pyrometer is certainly a modern necessity. Use it often. If you have more than 10% to 15% variation in chest temperatures you know something is wrong. Maybe it is a faulty trap (traps do go bad and should be checked at least semi-annually), or an "air bound" condition as in "B" in Fig. 1 (if indicated see 1 below), or too much condensate as in "C" in Fig. 1 (if indicated see 2 below).

1. Many times the most effective way of relieving this "air bound" condition is to drill into the end of the chest, as close to the top of the interior as possible, and insert an 1/8" pet cock; crack open the pet cock so that OCCASIONALLY you see just a whisp of steam escape. This will "bleed off" the air pockets.

2. If condensate is indicated, check the trapping again. A very common cause of condensation is having return lines that are too small. Every manufacturers manual I've over seen calls for return lines as large as inlet lines. Check yours, they may also be corroded almost closed. International Fabricare Institute has exceptional bulletins on this topic; they are really worthwhile. (Write to I.F.I., Joliet, Ill. 60434)
 - A. An inexpensive and effective "gadget" for checking traps can be made from a doctor's stethoscope: remove the "microphone" and insert a length of copper tubing in its place. Hold copper tube against trap, with earpieces in place, and the sound of active trap will be plainly audible.

Still another place to check, in event of poor drying, is the exhaust fan in the canopy. It's amazing how often they are clogged with dirt and lint that reduces their operation about 50%. They are intended to pull the moisture saturated air from above the ironer so more can be eliminated into that space; if the fans are sluggish they won't serve their function.

But above all, insofar as heat is concerned, before equipment or supply is blamed, do check the extraction and/or conditioning. The human element in the washroom certainly can have an effect. Never try to operate efficiently with more than 50% moisture retention, and today we are going down as far as 40%, 30% and even lower with some of the blend fabrics in use.

And check to make sure that the boiler pressure gauges, and those at the ironer, are accurate, there is really no excuse for not knowing "for sure" what you have.

PRESSURE (IRONING or ROLL) "A Flat Work Ironer Is NOT An Extractor Nor A Conditioner", we do not "squeeze" moisture out of ironed work. The greatest cause of resilience destruction, and cover wear too, is more roll pressure than is really needed! Little more than the actual weight of the roll is all that is required, more will help very little. Here are the normal methods of setting and checking roll pressure:

On American (or Canadian) Standard, Streamline, Sylon, and Super Sylon, on Troy Standard and Speedline, all Super, Hagen, Hoffman, Paramount, and Smith Drum ironers, use any, or all of the following methods; each with heat and running:

1. On each side of front of ironer, just beyond feed board and out against the bearing bar frame, is a vertical steel rod 1" to 1-1/4" in diameter, this is the bar that pulls bearing block assembly and rolls into chests when pressure is being applied. When you have added enough pressure so you can forcibly "wiggle" this bar, stop there you have enough.
2. Just above ends of each roll shaft and bearing block, in the moveable frame assembly, is a cotter pin. Add pressure just to the point these pins turn free, that's enough. Use this in conjunction with system 3:
3. Add pressure to expected requirement, then use a piece of wrapping paper about 24" wide, fold double, and insert well into first chest, NOT under preferably not under finger roll and preferably not under ironer tapes. You'll know you have proper pressure when you can hold it with both hands and not have it torn nor pulled from you. If it slides out there isn't enough. Don't insert paper near roll ends, stay about 30" in.

American Hy-Pro pressures are "pre-set", 2 rolls at a time, by air pressure on control panel. This is proper, no more, no less.

Troy Rollmaster manual reads: "Feed a piece of wrapping paper 6" wide by 4 feet long into the first roll. Proper Pressure is applied when the paper can ALMOST BE WITHDRAWN WITH THE MACHINE

RUNNING, WITHOUT TEARING PAPER". Further, "UNDER NO CIRCUMSTANCES SHOULD THE PRESSURE ON THE ROLLS EXCEED 70 PSI"!!

On all other ironers: consult operating manuals, pressure setting is spelled out in detail. Follow these instructions explicitly.

Once you've determined proper pressure mark pressure indicator gauge where it is to be set and caution all operators to leave it unchanged. When new padding is installed, it will be necessary to check and adjust pressure several times a day until padding has "seated". Beyond that seldom will it be necessary to change it. Limit switches are helpful in stopping unauthorized changes, if too much pressure is added the switch will stop the ironer or ring a bell and the supervisor can correct the setting.

When excessive pressure is applied padding resilience is destroyed rapidly, friction on covers is greatly increased, and much strain is placed on ironer creating the potential for damaging bearings and gears. Excessive pressure does NOT increase drying.

LEVEL Out-of-level ironers are on a "twist", as well made, as they are they will become un-level if the floor isn't perfectly true or if it settles just a little. This will cause chests to shift allowing rolls to roll out of the center of the chests; some rolls will rub against the chest front and others rub against the back, or front on one end and back on the other. This is very damaging to covers and padding, producing excessive-wear, tearing, and rapid resilience loss. Even worse will be the need for frequent bearing replacement and bearing block sticking. Do check the level, and unless ironer is on an absolutely solid level base, this should be done at least once a year, oftener if covers begin to pull unevenly. Here's how to check the level:

With VERY FEW EXCEPTIONS every ironer has two or more machined smooth leveling surfaces. They are located on either side of the ironer inside the guards and slightly to the rear of center. Wipe them clean and use an accurate spirit level, if not level then adjust ironer to make it so.

To check chest level, NOT WARPAGE, completely clean off all the "gunk" from LEAD edge of chests at point where they drop off a bit from previous chest, clean it well. Use long spirit level at this point lengthwise of chest. If not level, add shims to underside of chest ends at points where they are bolted to frame, to make them so.

This is a simple operation but unfortunately one that is far too often overlooked, or forgotten, and which can eliminate much cover-padding problems.

WARPAGE This has long been a truly serious problem, even though modern ironers are built in such a way as to overcome some of the occurrences. The only REAL way to correct it is to prevent its cause, which, simply, is brought about by turning full pressure steam into cold chests. It is simple to prevent warpage by:

1. Install small by-pass valve on steam inlet and allow only a small percentage of the steam to enter. When chests are very WARM to touch, THEN turn to full pressure; or
2. Turn steam valve to full on BEFORE boiler has any pressure at all and let the pressure climb in the chests as the boiler produces it.

Is a chest is warped, there is a real problem, and unfortunately a new chest is sometimes needed. Warpage downward almost never occurs, the upward "bulge" is the culprit; it pulls covers badly and destroys pad resilience at those points. Since roll size at those points is smaller ironed work travels at a

different rate causing very bad creasing and wrinkling. Here are some things to TRY, if you haven't already done so:

1. Remove chest, re-machine and polish. CAUTION: not too much lest you thin down the metal, make it weak so that it will not hold steam pressure.
2. If warped chest is not first or last on ironer, but is back of center, exchange it with an unwarped one near the front. The following rolls and chests will work out some of the finish problems after linens pass it.
3. Use padding you can afford to dispose of more rapidly, or attempt to thin out pads at warp point when installing. "Batt" type asbestos adapts to this system reasonably well.
4. Please tell padding supplier of condition, he may be able to help and will certainly lead you away from padding-cover types where warpage allowances cannot be made.

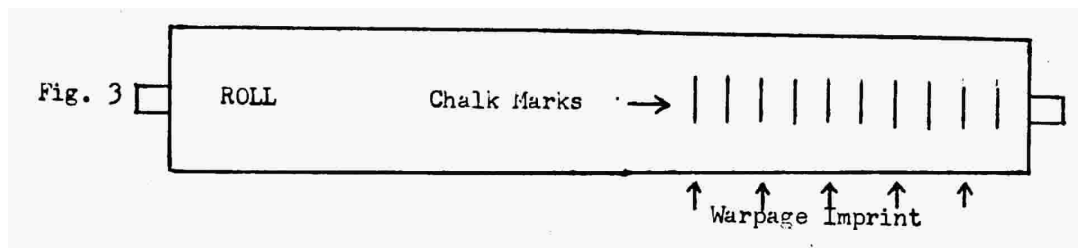
But, before taking these steps, make sure you HAVE warps, here's how to check:

1. Place pencil, or similar object, on top of clean chest, pull strong string across length of chest holding tightly stretched pencils at each end. If there is greater space, anywhere, between chest and string there is warpage at point of least space. Measure location, amount, its taper, and go from there.

See Fig. 2, below:



2. If roll padding is several months old, mark covers with chalk every 6 inches, measure diameter with Velocity Steam Calipers, or circumference with ironer tape (NOT string) at these intervals. Do this to the preceding and following roll and compute the change in size; since the upward bulge is imprinted into padding the roll at warp point will be smaller. See Fig. 3, below:



Ignore measurements on unused ends of rolls; they will be artificially large if padded or small if unpadded.

VACUUM Too many ironers equipped with roll vacuum, with any age at all, are not operating anywhere near their efficiency. Vacuum systems are simply plugged. Lint from padding, covers, linens, dirt from atmosphere, excess lubricating wax, and corrosion from springs combine with moisture being pulled and fill the tubes. As tubes fill less volume of air-moisture can be pulled through them. They NEED to be cleaned regularly. Here's how:

Remove guard from vacuum side of ironer and unfasten elbows where tubes leave roll and turn downward toward dispersal pipe. Use STIFF round wire brush and clean out the accumulation, in and out of roll and down to dispersal pipe. When finished, open each end of dispersal pipe (BE SURE PIPE IS DETACHED FROM VACUUM PUMP) and flush with hot water or steam.

Now place your hand on vent pipe and feel the increased heat, the vacuum is really working. This can increase operable speeds by as much as 20% because the vacuum is now doing its intended job of moisture removal. One ironer manufacturer insists this be done every 6 months, we agree heartily.

Most important, for all the preceding five sections use your manuals, if you have none get one and use it as a Bible.

Now we know why ironers iron, how and why to dress the rolls, and have made certain the equipment is in the best possible condition -- ready to iron.

FEEDING PRACTICES. Covering Ironer, Padding Length, Pre-Heating.

COVERING IRONER

Serious problems are created when areas of rolls are padded and then not used. Those areas of the rolls remain large while consistently used space "packs down" padding resilience. If this practice continues many bad things result: larger sections hold rolls out of chests leaving not enough pressure in used areas, dirt accumulates on unused chest areas and occasional pieces will touch it and become dirty, excessive cover wear from higher roll pressure, and friction even to the point of tearing covers loose. All unnecessarily expensive!

Where To Feed Whatever width of roll is padded MUST be used! Not always easy but necessary. These will help:

1. Induce feeders to shift from side to side regularly, giving uniform use of padded surfaces. Develop a system and insist it be adhered to; like one side for so many baskets, lots, or time; then shift to the other side for a like amount of work or time. Many plants shift at half hour intervals or at break time, in some the feeders even forego incentives with violations.
2. Always feed heaviest pieces to extremities of padded surfaces; pillow cases, heavy towels, bath mats, etc.
3. Continually move positions when feeding small pieces. Unless positive lane feed ironer, never continuously feed in same locations.

This is another indication of True Quality Being true Economy. Poor feeding increases costs by too frequent pad-cover changes, by "re-washes" from dirty work, by quality loop-backs, and to top it all, by slower drying that eventually occurs. Avoid these pitfalls by reading and following suggestions in the next section.

PADDING LENGTHS

Seldom is enough thought given to how much of the roll really needs to be padded. Second only to the decision on what tape is best for you should come "how much to pad and pay for". If you don't need it don't pad it, if you don't pad it don't pay for it, but you MUST use what you pad. Here's how to determine correct pad length, save the dollars involved in unused portions and eliminate "Oh, So Many Problems":

1. Remember there are apron guides under ironer prohibiting use of last inch on each end of roll.
2. Know width limits of automatic folder. if any.
3. If automatic sheet feeder is used, but not constantly, know its width limits.
Here and on item #2, know how much further on rolls items are FREQUENTLY fed.
4. When automatic feeder is ALWAYS used, determine the width it really uses.
5. Look for "dirty" feed ribbons, "dead-give-away" ironer is not being fed beyond that point. Watch how often, if any, operators feed into the dirty ribbons, then allow for extra padding, as taper, if infrequent.
6. Look for dark or dirty cover ends, you'll know these areas are never used
7. Talk with the operators, ask questions, they'll know how much of the ironer they really use and how often they need "just a bit more" than normal.

There are greater variations in sheet and specialty sizes today, but there are ways to compensate for them. When you KNOW your needs here's how to get proper pad widths:

PAD ONLY THE MAXIMUM WIDTH YOU WILL USE, plus 1½ to 2" more on each end to allow for feeding variations. Most -manufacturers make pads available in 100", 110", or 120" sizes. But if you insist on variations you'll get them. If you cannot then buy the next larger amount than needed and cut off the excess.

COVERING LENGTH OF ROLL YES, cover it all! Even though portions of roll ends are not padded the

entire roll MUST BE COVERED. Most covers are, and should be made to extend about beyond each end of the roll, be sure they do. This extra length ensures that pad particles will not work out onto chest creating dirt. It also makes sure pads will not become exposed if there is some cover shift or shrinkage. This extra length gives sufficient material for use of cover springs which prevent trailing cover ends from "flopping" or folding under, and still keep the springs off the chest surfaces.

PRE-HEATING

When wet linens are run at the start of daily operations without first heating roll-pad assemblies moisture is put into the rolls when they have little ability to exhaust it into the atmosphere. This moisture will then condense and leave wet padding resulting in slow production during the considerable time needed to dry them out. Even worse is the staining and spotting of ironed items bringing many costly "re-washes".

To prevent this: after chests are hot, or at least too warm to touch, bring rolls to proper pressure and run EMPTY ironer 10 to 12 minutes BEFORE feeding. Roll-padding assemblies will then be thoroughly hot and ready to do their jobs of moisture disposal. This time can be used to clean and wax chests in preparation for the days work.

Running ironer AFTER end of feeding day is just as important as the Pre-Heating. There is some moisture left in the padded rolls from the last pieces fed. If allowed to remain it will condense as rolls cool resulting in wet rolls to start the next day; and the pre-heating that following day will take much longer than would otherwise be needed.

Allow ironer to run, with pressure, after the last feeding of the day, for 6 or 8 minutes. All moisture will then be exhausted with rolls dry overnight and to start the next day. This is especially important in cold or wet climates where moisture condensing is even more prevalent.

Altogether too often I see a practice of continuing to feed ironer after steam is turned off at the end of the day. This continues until fed linens just will not dry. This attempt to save fuel and/or time actually results in just the opposite -- rolls are completely saturated with moisture, which will require very MUCH more drying and pre-heating the next day. If you find it exists, discontinue the Practice and save many dollars and much aggravating time.

Your Bonn Man can help you in interpreting these ideas – he's experienced and is trained to help.

CLEANING LUBRICATING, Chests, Covers, Bearings -- Routines.

General cleaning and lubricating is the one preventive maintenance servicing that is often missing. This chapter proposes to indicate why it is so important to use this preventive maintenance with its accompanying economies, and to suggest some routines to follow in performing this servicing.

GENERAL CLEANING

It's just good housekeeping to keep the ironer, and the area around it, clean and shining; as you would your home and auto. The resulting accessibility for repairs and elimination of fire hazard makes it a necessity. Those, plus some almost hidden economies, are the reasons for these suggestions:

Beyond Ends of Chests "Honest Injun"! There are ironers that look as though this space hadn't been cleaned in 5 or 6 years. Several fires have started in this accumulation of lint, grease, and oil wax, and old padding-cover pieces. When the ironer heats up, the grease and oil thins and creeps onto the chests and rolls; think what this does to clean linens and the ever narrowing clean surface available for ironing. The prevention of these things, and their correction when they exist, are almost the same things:

1. If these accumulations are present, clean them out! If it takes scrapers and putty knives, use them. When clean, wipe off the bearing bars, roll shafts, ends of rolls and chests, and frame, with cloths moistened with cleaning solvent.
2. When padding or covering, use air hose after stripping ironer, and again after the job is finished. Get rid of the old wax saturated padding, and the lint or metal articles from the new pads, which will become grease and oil soaked soon.
3. Insist that janitorial or maintenance personnel use high pressure air in this area at least once a week for 5 minutes per ironer side.
4. Just as often be sure that excessive grease is not "oozing" out from the bearings, you'll prevent atmospheric lint and dirt from being caught and accumulated. "Oozing" also indicates bearing wear and you'll catch this before it becomes an expensive break down or wastes costly grease.
5. After the weekly dirt "blow-down" be sure the accumulation isn't left around or under the ironer. Get rid of it, don't "sweep it under the rug".
6. Cleanliness in this area, and others, leaves OSHA in a good mood, too.

CHEST CLEANING-LUBRICATING

Here's something that has REAL bearing on economy and quality. How can spotlessly laundered linens come out of an ironer looking like "Snow white" if the chests are dirty, dull, and rough? They can't! Those chests are SUPPOSED to be bright and shining clean, the ironer manufacturer made them that way so the ironed items would "slide" through the ironer, not be forcibly pulled.

Back in the days before "perma-press" and detergents we knew the chest "buildups" were primarily traces of soap, alkali, sour, sizing, and atmospheric dust. While there were pieces of tape from hospital linens, and other oddities, we basically loosed for improper rinsing, and insoluble sour. These are still true, but today we've added a couple of new dimensions: traces of "perma-press" resins that soften in washing and cling to the hot chests, and the absence of natural lubrication in laundered work. This natural lubrication care from residual traces of tallow soap combining with zinc based sour into a sort of "zinc ointment" and the linens "glided wonderfully". Now tallow soap is almost nonexistent, and while the detergents are preferable they do not produce this "glide", rather they remove all traces of oil and lubrication natural or otherwise. This lubricating absence is one of the primary reasons for the strong recommendation for use of fabric conditioners on everything that will pass through an ironer.

So chest cleaning-lubrication is now more important than ever before. Come up with positive cleaning - waxing schedules like these to prevent problems:

Cleaning First give the chests a really good cleaning to remove the "caking" which may be present. Pay special attention to chest ends (particularly bad on the newer large-roll ironers), the "gap-drop" between chests, and the first few inches of the first chest:

1. Use putty knife to clean the "gap-drop" at beginning of each chest.
2. Unused chest ends may well require use of scrapers, putty knives, and coarse steel wool to remove really heavy accumulations. But they **MUST** be cleaned.
3. Use medium grade steel wool and a bit of liquid cleaner-wax compound where you've used the scrapers and putty knives. This is, also, particularly helpful on beginning of first chest and all the last one that can be reached.
4. Where there are known rough spots on chests polish with **VERY FINE** emery or crocus cloth. Use extreme caution, emery will scratch metal surface when used injudiciously. Apply by laying it under trailing edge of the cover, wrap it around roll and run **BRIEFLY** with full ironing pressure.
5. With ironer hot follow all of these procedures with steel wool chest cleaner by-passing aprons and folder completely. **ALWAYS** follow steel wool cleaner with several cloths, preferably heavy ones, to remove the dirt the cleaner loosened.
6. Build-up of starch and sizing on tie covers should be remove by scrubbing with hot supersaturated water-sour solution. The presence of this buildup indicates several largely preventable things:
 - A. Insufficient cleaning and waxing of chests and covers.
 - B. Use of un-cooked starch or sizing, it must be cooked somewhere but preferably before it reaches the ironer.
 - C. Not enough running time in wash wheel: add minutes, heat, and sour to the sizing cycle.

Once chests and covers are in good condition, set up, and force the use of, a **DAILY** wax and clean procedure such as these:

1. Use chest cleaner. Be cautious of "kerosene cloths", today's higher chest temperatures bring considerable fire hazard.
2. We repeat, **ALWAYS** follow each application with 2 or 3 pieces of old heavy cloths to remove dirt loosened from full chest width. **DO NOT** use wax cloth for this purpose, you'd just get it dirty.

Now set up a schedule for waxing and insist that it be followed. Any strong fabric will do for a wax cloth, one 54" wide by the length of chest, preferably with flannel attached, is best.

1. Under normal operating conditions:
 - A. Feed cloth into first chest of **HOT** ironer leaving 2/3 of it outside finger roll. Spread wax evenly over cloth on feed board area and fold remaining cloth up covering wax. Run through ironer with full operating roll pressure.
 - B. Run **EACH** morning after steel wool cleaner routine, prior to start of feeding.
 - C. Use about ¼ cup of wax per roll then run cloth twice more with no additional wax. I'm partial to powdered wax but know there are paste wax-cleaners which are good; plain "trough grease", though, has little lubricating quality.
 - D. Run empty wax cloth once at noon.

- E. If ironer does not operate full shifts reduce wax quantity slightly.
 - F. Follow morning waxing with 3 or 4 soiled linens to remove excess wax.
2. On operations faster than normal, where sizing is used, or when "build-ups" are frequent and heavy:
 - A. Use steel wool cleaning and waxing routine MORNING and NOON using ½ cup of wax per roll each time. Run empty wax cloth 3 or 4 times after each and don't forget the 3 or 4 soiled linens to remove excess wax, which could soil the clean linens.
 - B. Use empty wax cloth twice more during morning, similarly in afternoon.
 3. When breaking-in a new set of covers:
 - A. On first day use cleaner about 5 times normal and follow with 8 or 10 dry cloths. There will be much dirt to remove.
 - B. Wax with ¾ cup per roll broken into two operations and follow with empty wax cloth 4 to 6 times. Clean off excess with 8 or 10 soiled linens. After feeding for 15 to 20 minutes and work flow is not good, repeat this step using half the amount of wax.
 - C. Again at noon with ¼ cup per roll followed with empty wax cloth 2 or 3 times and then with 3 or 4 soiled linens to remove excess.
 - D. Run empty wax cloth at 1 to 1 ½ hour intervals all that first day.
 - E. For next 1 or 2 days use the "first day system" but with only half the amount of wax.
 - F. Then revert to normal schedule.
 4. Whenever using wax TURN OFF VACUUM SYSTEM, there is no percentage in pulling it into the vacuum tubes.
 5. On the newer large-roll ironers increase wax amounts by roughly 1/3.

When chests are kept well wax-lubricated, you have automatically done the same thing to the covers. This greatly reduces chest-roll friction, considerably increasing cover life, and eliminates linen clinging tendency. CAUTION: the adage "If a little is Good More is Better" isn't true here. Too much wax will carbonize on chests and covers requiring more cleaning, clogs vacuum, brings fire-hazard on fabric pads, and increases supply costs. NEVER throw wax over an ironer except in dire emergency such as new pads and covers being too tight in chests and refusing to turn. Most of that "thrown wax will do no good and eventually sticks, carbonizes, and stains linens. This could be reason for "soap specks" you thought you had.

BEARING LUBRICATION

We hate to hear a "squeaking" bearing, you, your employees, and I. Damaging wear is occurring and much static electricity is being created. We service-lubricate our cars to increase their lives and make them operate smoothly, let's do it to our ironers.

Make and enforce a frequent regular routine:

1. Check ALL bearings; gears, fittings, and chains to be sure they are in good condition. Repair or replace faulty ones, paying particular attention to grease fittings and oilers. Make sure they are operating as intended.
2. Determine which greases and oils are best for YOUR ironer. Oil companies and your operating manuals will help, don't guess.
3. Once a week on normal operations, twice on high speed or multiple shift ironers, check EACH point for clogging. Then lubricate them. If operating manual suggests oftener do so.
4. Remember apron and feed ribbon idler rolls, they turn, wear, and dry ones create static electricity. These are the most forgotten lubrication areas,

5. Again, don't go for "If a Little is Good More is Better". "Gobs" of grease and dripping oil help only your supplier.
6. Be sure all employees know the problems in just one dry bearing and report the "squeaking".
7. Don't forget belt dressing on belt driven ironers.
8. Post required routines so everyone involved understands and respects them.

These nine points are reasons for smooth uninterrupted operation with less drag on motor and clutch. Again we say "if you have an ironer manual use it, if you don't have it - get it". International Fabricare Institute (IFI), Joliet, Ill. 60434, has exceptionally good bulletins available on this subject, they are well worth having.

STATIC AND ROLLING, Causes and Elimination

There may well be as many reasons for static and rolling as there are days in a year and it would be impossible to discover and discuss them all. About 80% or 90% of them fall into a manageable number so we will attempt to cover these more common ones. Many of the reasons are pretty nebulous and we never really find out why they happened; but, that does not make them any less bothersome. Then, too, these conditions are sometimes brought into being away from the ironer but the ironer seems to get the blame anyway.

Whatever the reason and wherever the cause they are nonetheless troublesome when either or both of them take place. Ironed linens cling and stick together in either manual or mechanical folding when static is present. The sting, pain, and bruises from jumping static sparks bring understandable complaints from the ironer girls. Fire hazards are present, although I've never heard of a serious resulting fire. These problems are frequently connected; one of the prime reasons for rolling is static electricity.

Rolling is destructive, more so than static. Linens won't travel from one chest. or roll. to the next; they pile up into a chest against a roll and just "roll" up. This breaks ironer tapes and rips or tears loose covers and pads. More destructive is the linen damage and worst of all is the work stoppage needed to remove the rolled and damaged lines. There must be some sort of "law of adversity" involved, this seem only to happen when you are behind schedule.

Even though static and rolling are sometimes related it will serve our purposes best to consider them in separate sections. In either we will tend to "ramble" going back into 35 years experience remembering cases, causes, and cures. We'll not always have them listed in order of importance or frequency but will attempt to keep them in reasonable formality. I hope some of these references will help answer your particular static and rolling "headaches".

STATIC

We must first realize that this is wayward and unwanted electricity. It must be eliminated from the ironer and sometimes its removal is the only answer when the real cause cannot be found. Even so we'll try to help you do both.

Probably the proper order of correction would be to locate cause of static, overcome it, and arrange to prevent its recurrence. This procedure is frequently too time consuming and the static too severe to endure. So, let's first look into some methods of draining the static from the ironer THEN go into causes and their possible preventions:

Draining Static From Ironer: We can use all the "gimmicks", and "gimmicks" they be, like Christmas tinsel hanging across ironer and linens, metal threads in the aprons, even static accumulator-eliminator bars. But unless provision is made to take the static completely AWAY and dispose of it we haven't helped, the static is still there! Use any of the "gimmicks" you wish but you MUST tie them into an effective method of elimination. This can be done well by:

1. At a convenient point back of ironer, in front of folder, away from normal walk-ways to prevent stumbling over it, break a hole through floor 4" or 5" in diameter. Obtain 5 or 6 foot length of black iron pipe, galvanized is acceptable but not as effective. At one end of pipe beat a rough point so it can be driven and not fill with soil. On same end drill, at random, 30 or so 1/8" holes in first 2 or 3 feet of pipe. Through the hole in floor drive the pipe as far into ground as possible. Cut off battered top of pipe leaving 2 or 3 inches above the floor and fill space around pipe with concrete.

Then:

- A. Weld, don't use bolts or clamps, 3 pieces of #4 or larger copper wire to the top of the pipe.
 1. Weld opposite end of one wire to end of last chest.

2. Weld opposite end of one wire to any place on frame of ironer.
 3. Weld opposite end of one wire to any place on folder. attaching to static eliminator bar is acceptable but not necessary.
- B. You are creating an electrical ground in the earth and the contact is far more efficient if that normally dry -soil is wet. So, ONCE A WEEK FILL THE PIPE WITH WATER.
2. If ironer is above ground floor, or there is something underneath floor which the grounding pipe might interfere with, use this system:
 - A. Use insulated wires and attach one end of each to ironer and folder as described above then insert them into plastic pipe. Do NOT use metal pipe or electrical conduit.
 - B. Run plastic pipe up out of the way to the nearest window or hole in outside wall. Make sure the wires are not exposed or touch any metal on the ways
 - C. Bring pipe down outside of building and attach opposite ends of wires to top of pipe that has been prepared and inserted into ground as described above.
 - D. Even though pipe is now outside building exposed to weather you can't depend on earth being moist enough for proper grounding. Pipe must still be filled with water WEEKLY to supply needed moisture.
 3. Do not ground more than one ironer onto the same Pipe system; you could defeat purpose by "funneling" static from an ironer with much static to one with little. Nor should ironer be grounded onto plant water or steam system; it very likely already has been and if it were effective you wouldn't have static present on the ironer. Here are some of the reasons why:
 - A. Proper machinery parts have not been directly grounded to the water system.
 - B. Even if they were the distance to final ground point is too great.
 - C. Water or steam pipes touch far too many other pieces of metal dispersing, and even picking up static, rather than disposing of it.
 - D. Real clincher is that everything else in the plant, equipment and electrical system, already grounded into that same system. Static from other pieces of equipment, plus occasional electrical shorts (which is really static) can very well be fed onto an otherwise "static clean" ironer.

This system has proven exceptionally effective in many hundreds of ironers and can do so for you. But the precautions in installation, and the 'WEEKLY pipe filling, MUST be followed.
 4. An alternate to putting pipe into soil would be putting wires into plastic and running them to washroom sewer. This entails frequent messy wire cleaning and is honestly not nearly as effective.
 - 5- Climatic static in very dry cold, or hot desert, areas does really occur and will create problems that require "draining" system. When it is not severe nor frequent enough to need system outlined in Item 1, occurring only for a hours or days and is then gone for months, try this:
 - A. Place 8 or 10 "cake pans" under the ironer and keep them filled with water. Yes, this sounds like "an old wives tale" but is frequently temporarily helpful. Its help may be in putting moisture into dehydrated atmosphere.
 6. When all else fails and the ironer girls complain of sting from jumping static sparks:

Remove any rubber or plastic floor mats from their work areas.

 - B. INSIST that they do NOT wear rubber soled shoes.
 - C. Then most static will be dispersed into floor reducing their problem.
 7. We repeat; the "gimmick" attachments like the tinsel dragging on linens and aprons, or aprons with metal threads woven into them, are still incomplete gimmicks". They do pick up static, yes, but are useless in draining it from the ironer. They can be made useful, though, in directing the static to a real elimination system.

Causes of Static We remarked earlier there are many reasons for it. Following are some of them along with suggestions for correction:

1. As mentioned earlier it can be coming from other machinery or the electrical system if they are all grounded to a "central" system. The obvious correction is to install individual elimination systems.
2. Atmospheric condition, VERY low humidity either very COLD or very HOT. The water filled "cake pan" idea may help if this is infrequent or temporary.
3. Dry bearings, even one, on ironer or folder is a prime cause. This was covered in Chapter Six in considerable detail. Recheck lubrication, especially the remote points on apron and feed ribbon idler rolls. Static from turning shafts on folder can cause trouble so do check these points as well.
4. Dirty, broken, or ungrounded static bar on folder is a real culprit. If it is type that uses light bulb to "use-up" the electricity do these things:
 - A. Replace broken or burned out bulb.
 - B. If bar is broken repair or replace. Be sure it IS attached.
 - C. Blow it off daily AFTER use using air hose in or around ironer-folder area. When covered with lint and dust it cannot serve as intended.Improper wax-lubrication of roll covers is one of the greatest causes of static. Preventing it is just one of the reasons for and cleaning chests and rolls. Review wax-lubricating systems in Chapter Six.
5. Pads and covers CAN be cause.
6. Slipping aprons and feed ribbons bring friction and static, is also responsible for their rapid wear.
 - A. Tighten the drive rolls. Better still, apply build-up materials to them. Use prepared rubber type or wrap with coarse emery cloth.
 1. Slipping aprons bring shifting from one end to another plus rapid wear and static. This also frequently permits such slow apron speed that they will not pull linens from last chest without buckling and creasing.
 2. These rolls were knurled when new but usage wears them smooth and slippery.
 3. It is imperative that same amount of build-up be applied to upper and lower apron drive rolls. Aprons MUST travel at same speed or they, too, will cause much static.
 4. Check feed ribbon sizes, variation of ¼" in length will cause some to pull and others to slip. Slipping ones create friction and static.
 - B. Applying anti-stat silicone spray to aprons is expensive and relieves static for only a few hours at a time.
8. Look to the washroom and conditioning tumblers.
 - A. Excessive or insoluble sour brings much "drag" as linens pass over chests, again friction and static. A good indicator is "squeaking" as linens pass.
 - B. Traces of alkali and/or detergents, from improper rinsing, do much the same in addition to discoloring linens.
 - C. Over or under conditioning can also be guilty. Work should contain 20% or more moisture but certainly less than 50%.
 - D. If there is static in conditioning tumbler linens will pick it up. Operator should be aware of this so it can be corrected quickly.
9. Don't overlook possibility of cold chests. Be sure enough heat is being delivered to ironer and all traps are operating as they should.

We mentioned earlier there were many reasons for static electricity and reminded you of the prime ones. Try to locate YOUR causes, but, if you are unable to find the reason then drain it from ironer-folder. You may find you can live with what is left.

ROLLING

Not as many things cause rolling as bring on static, but rolling is far more destructive when it occurs. Thank goodness rolling reasons are usually easier to locate and correct. When it happens, sooner or later it will, and the rolled items must be removed STOP THE IRONER FIRST. I know of three very recent accidents that resulted from not stopping first: in each instance an operator girl reached into ironer with mop handle, broomstick, or long pipe to pull out the rolled items. Yes, you guessed, in each instance the stick got caught and tore off covers and pads, in one case even the springs under the pads. Damnably expensive! One was in a one-ironer-plant and with no local friend to help out the plant was down for more than three days.

It is far cheaper to prevent rolling than to correct it so try these preventive measures.

1. Static is a very common cause, we just finished digging into that one.
2. Linens sticking to roll fronts, climbing part way up then falling back onto chest in a pile:
 - A. Ironer wax-lubricating again.
 - B. And static.
 - C. Missing ironer tapes. One of the reason tapes are used is to prevent this.
3. Cold chests, even total cold ironer, cause leads of wet linens to cling to metal chest surface and slow down their entry under a roll. Then the trailing portion of an ironing item, and those which follow, will be pushed into a pile greater than the roll will accept, and rolling has resulted.
 - A. Check traps and overall heat.
 - B. Don't overlook size of return lines or if they are clogged or "waterlogged".
4. Dirty or unlubricated chests. Chapter Six covered this almost to point of boredom. Nevertheless this in the most common cause of rolling, it is well worth reviewing wax-lubricating-cleaning of chests.
5. Damaging effect of rough chest spots, these really hold back linen travel. If this is a common occurrence in same location, check it. A simple effective method is to run a shoot of tissue paper under pressure at suspected point. If it is torn or abraded there is no doubt, chest is rough. Corrective procedure was outlined in Chapter Six.
6. Frequently linens are too wet to move over chests. If they have more than 50% moisture you'd save more time sending them back for more extraction or conditioning than trying to run "as is".
7. Improper feeding can put such large wrinkles across lead of linens that somewhere enroute through ironer one of the rolls will not promptly accept one. Result is a "pile up" and rolling.
8. Indentations in improper padding size leaving flat spots across rolls. If lead of linen hits flat spot at instant both enter chest there will be momentarily pause in the "pull". Especially on high speed ironers this will bring same situation outlined in item 3 of this section.
9. Improper roll graduations cannot be overlooked. Refer to Chapter One Fig. 5 between rolls 2 and 3. 'When this "buckling" is pronounced, particularly if conditions outlined in item 3 & 8 this section exist, you'll get rolling.
10. Sizing in first-time-laundered linens can cause some rolling, usually not severe unless run fast and continuously for an hour or so. Completely worn ones can do the same thing.
11. Accumulations of sizing on roll covers, if heavy and linens are a bit wet, will cause clinging to roll and cheat-resulting in rolling. Go back to Chapter Six for sizing removal method.
12. When rolling starts remove the "roll" at once. Delay will only permit its size to increase enhancing opportunity for serious pad-cover damage.
13. Use of fabric conditioners certainly DO help,, they supply lubrication that is often missing even in the best of operations, and give "limp body" to the linens for easier proper feeding, more "fluid"

work travel, and definitely better "crisp" finish. I honestly recommend continual fabric conditioner use on all ironed work, with the possible exception of towels.

WHEN TO RE-PAD AND RECOVER. Roll Size Importance

Good regular flatwork ironer maintenance actually SAVES many times the costs of that absolutely necessary care. This certainly includes keeping pads and covers in proper operating condition! How can re-padding or re-covering SAVE when either adds dollars to your budget? The best answer is in reviewing Chapters One, Two, and Three, which we will do shortly. More directly, though, through faster drying, less servicing, reduced down time, and fewer "go-backs" from poor quality. These combine into far LOWER production costs and customer turnover. After all aren't happy patrons the very key to our operations?

Too often we fall victim to the disease "We Can't See The Forest Because Those Damn Trees Are In The Way". The ironer operates hour after hour, day after day, month after month, and we fail to see changes in quality and productivity until something drastic happens. Changes ARE there, the moment new pads and covers are installed they start to deteriorate and continue to do so until they no longer serve their intended functions. As in the fine cars, alluded to earlier, when the tires are worn and badly damaged they are replaced; so must pads and covers on the ironer rolls. Neither was placed there just to fill up some available space.

The question is when to do these jobs, we'll try to help determine the time:

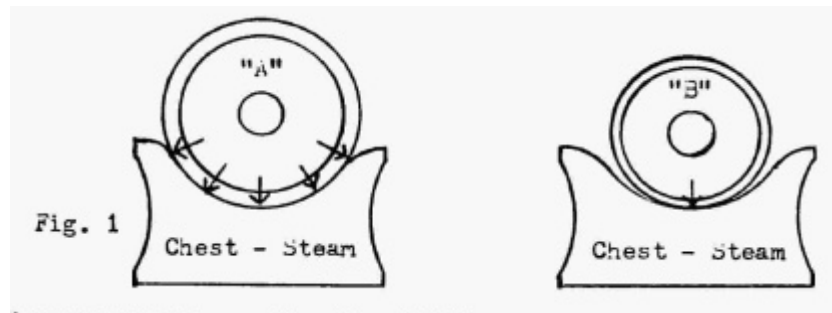
WHEN TO RE-PAD

Roll size is NOT the real criteria! It is merely indication of how much RESILIENCE is left in the padding. But, since resilience is almost impossible to measure, roll size remains the number one yardstick. Because RESILIENCE is truly the master key to the entire ironer operation we repeat some data set forth earlier:

From Chapter One, Principles of Ironing "RESILIENCE, then does three things: 1. fills the chest cavity for best roll heat, 2. for absorbing cloth irregularities, and 3, enables us to get the roll graduation for the needed PULL through entire ironer. Most important, though, is its maintaining the full roll size."

From the same chapter: "The only way padded rolls get their heat is in their contact with the hot chests. The padded rolls must be hot so the moisture they pick up while in contact with the wet sheet, will be disposed of rapidly so that point can be sent back into the chest to again pick up moisture. It is logical the greater the roll contact with the chest the more heat is transferred to the roll." And "Remember that measured roll size is only indication of the amount of resilience left in padding since all basic roll and chest radii are constant on any given ironer. Actually when you measure the size of an ironer roll you are not measuring the size of the roll but the amount of the resilience left in the padding assembly."

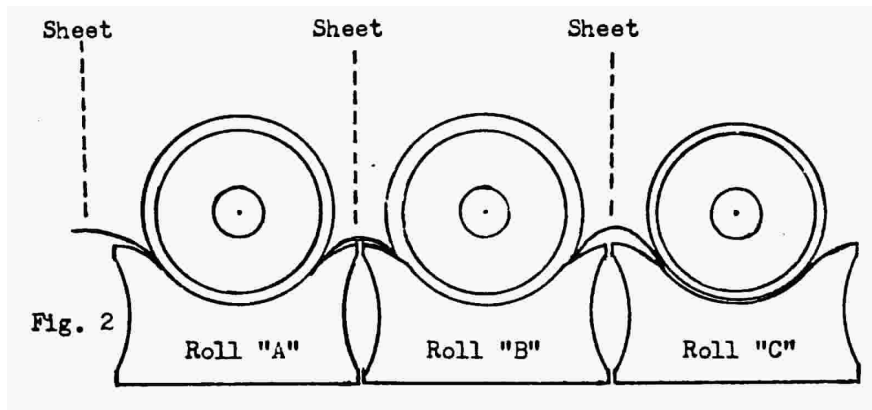
With these thoughts in mind, refer to Fig. 1 below. Roll "A" is getting maximum chest contact for best heat transfer and ironing; Roll "B" is getting neither and is seriously ready for changing because its roll-size-resilience has been used up.



Though roll-size-resilience combination IS the measurement that must be final indicator of change, other things must be considered too:

1. When drying slows and a lower operating speed is needed to obtain moisture elimination. This is poor utilization of equipment capacity and you got considerably less value for your productive labor money. Those soon surpass pad replacement costs.
2. Poor ironing quality. To who is the quality acceptable, is it what you really want to supply, are customers happy or are competitors enticing them?
 - A. Quality? Are linens crisp or dull? Is the finished product filled with wrinkles? How about "crows feet" along seams and ironer tape positions?
 - B. When padding "weave" shows through covers it is being ironed into linens.
3. When marks of fastening devices, or trailing ends of pads, show through covers you KNOW the life is gone.
 - A. There is no resilience remaining to absorb these marks.
 - B. Rapid cover wear results, hard padding cannot accept these irregularities so the covers take a "beating".
4. Remember, when you've added pressure to the limit without gaining any drying, linens cannot be "squeezed" dry. But you HAVE "squeezed" the life out of the pads and friction wear on the covers accelerates.
5. Hit roll with a fist, does it "ring like a bell"? Push against it, if resilience is gone so is the reason the padding is there.
6. In Chapter Two reference was made to lack of complete graduation in many types of padding. Toward the end of its life this becomes considerably aggravated. The sometimes small variations are largely eliminated, in many cases their graduations have actually been reversed.
 - A. Work flow is no longer acceptable, tight between some rolls and loose between others.

- B. Long pieces "buckle" so badly that hard creases are placed into them.
- C. These conditions are so prevalent we review an illustration shown earlier, Fig. 2, below, shows Roll "A" is properly padded, Roll "B" is correctly larger causing it to pull linens from Roll "A", but Roll "C" is smaller and will not even accept work from Roll "B" causing serious "buckling":



You can wait no longer! Above all don't use mere age as the criteria for change; when they are worn out they are worn out and it's time for the change. It costs too much not to.

The section on "Technical Data" will cover the one big thing missing here; proper minimum and maximum roll sizes for YOUR ironer. These are of major importance because chest cavities, in some makes of ironers, DO vary from one ironer to another.

When apprehension arises that your flatwork ironer covers are not lasting as they once did, or giving the service you expected, consider these points:

1. Were they really matched to your needs and ironer to start with?
2. Were they properly installed? Carelessness to start brings uselessness later.
3. Have wax-lubrication and proper pressure settings always been used?
4. Were careless accidents involved? Impress upon all personnel the expense of these accidents and what the resulting cover costs are,
5. Were trailing edges allowed to "flop", catch, and tear? A very common destructive practice is failure to use roll end springs.
6. Finally, were the last sets knowingly, or unknowingly, down-graded in their original quality?

Regardless of make, kind, or type, remember the remark in Chapter Five: COVER THE ENTIRE ROLL, plus 1 to 1 ½ inches on each end, not just the pad length. This saves extra chest cleaning, keeps dirt from linens and provides space and location for proper use of cover end springs. Manufacturers prefer to supply and install in this manner.

Covers are the "first line of fire" on the roll, they are expected to catch the brunt of abuse, normal or otherwise. Always use the very best, they will be the most economical in the long run. Appearance will be their best indicator of remaining service. As stated at the end of the WHEN TO RE-PAD section: "when they are worn out they are worn out and it's time for the change". It costs too much not to.

TECHNICAL DATA. Ironer Types and Sizes.

To help in this determination, and to give maximum and minimum roll sizes, along with recommended cover dimensions, we supply the following data -- complete and accurate, to our best knowledge, at this writing:

MANUFACTURER AND MODELS	ROLL DIAMETER		ROLL CIRCUMFERENCE	
	Min.	Max.	Min.	Max.
<u>AMERICAN</u> Standard, Streamline & Sylon <u>Regular 12-3/16" Dia. Chests</u> Serials up to & INCLUDING: 3112-M-3824 EXCEPT 3112-M-3820 3114-M-31758 EXCEPT 3114-M-3175 3116-M-33359 3118-M-31459 114-M-3036 118-M-3396 116-M-3137 110-M-3023	12-1/8"	12-7/16"	38.10"	39.10"
<u>AMERICAN</u> Standard, Streamline & Sylon <u>Larger 12-3/8" Dia. Chests</u> Serials BEGINNING WITH: 3112-M-3825 PLUS 3112-M-3820 3114-M-31759 PLUS 3114-M-31756 114-M-3037 118-M-3397 116-M-3138 110-M-3024	12-5/16"	12-5/8"	38.70"	39.70"
<u>AMERICAN</u> Super Sylon (Larger Rolls) <u>Regular 13-3/16" Dia. Chests</u> Serials up to & INCLUDING: 126-M-3005 126-M-3019 EXCEPT 128-M-3011 & -3013	13-1/8"	13-7/16"	41.25"	42.20"
<u>AMERICAN</u> Super Sylon (Larger Rolls) <u>Larger 13-3/8" Dia. Chests</u> Serials BEGINNING WITH: 124-M-3001 126-M-3006 128-M-3020 PLUS 128-M-3011 &-3013	13-1/4"	13-5/8"	41.65"	42.80"
<u>AMERICAN</u> "Hypro" All Serials	19-9/16"	20"	61.50"	62.85"
<u>BEAVER</u> All Serials Chest Diameters 12-3/8"	12-5/16"	12-5/8"	38.70"	39.70"
<u>HAGEN</u> (American) <u>PARAMOUNT</u> (Std) <u>PROSPERITY</u> (Std) Prior to 1951 <u>SUPER LAUNDREY MACHINERY</u> (Std)	12-1/8"	12-3/8"	38.10"	38.90"

Early Models Before 1951

MANUFACTURER AND MODELS	ROLL DIAMETER PADDED & COVERED		ROLL CIRCUMFERENCE PADDED & COVERED	
	Min.	Max.	Min.	Max.
<u>PROSPERITY</u> 2RRA - Two Roll All Models & Serials	13-1/4"	13-5/8"	41.65"	42.80"
<u>PROSPERITY</u> Matchless (Early) 16" Diameter Chests Serial Numbers: MA-2132-A-1 MA-6132-A-4 MA-2132-A-2 MA-6132-A-5 MA-4108-A-1 MA-6132-A-7 MA-4108-A-01 MA-6132-D-1 MA-4108-A-5 MA-6132-1-1 MA-4108-A-6 SMA-4108-A-3 MA-4108-A-7 SMA-6108-A-1 MA-4132-A-2 SMA-6132-A-8 MA-6132-A-1 SMA-6160-A-1 MA-6132-A-2 SMA-6160-N-1 SMA-6161-A-1	15-3/4"	16-1/4"	49.50"	51.00"
<u>PROSPERITY</u> Matchless (Later) 16-1/2" Diameter Chests Serial Numbers: MA-6132-A-9 MA-8132-A-1-01 MA-6132-A-11 MA-8132-A-2-02 MA-6132-A-12-04 MA-8132-A-3-03	16-1/4"	16-3/4"	51.00"	52.65"
<u>SUPER LAUNDRY MACHINERY</u> Customatic -- Solid Roll Imperial, Majestic - Over Springs	13-1/4"	13-5/8"	41.65"	42.80"
<u>TROY</u> Standard Big 2, 4, 6, & 8 All Serials:	12-1/4"	12-5/8"	38.50"	39.70"
<u>TROY</u> "Speedline" (Larger Rolls) All Serials:	13-1/4"	13-5/8"	41.65"	42.80"
<u>TROY</u> "Rollmaster" (EXTRA All Models Larger Rolls)	25.10"	25.80"	78.75"	81.00"
<u>REINEVELD</u> Rolls available 98-1/2" 118", 137-3/4", and 157" Over springs Bare Rolls	31-1/2" 31-3/8"	31-5/8" 31-2/3"	98.90" 98.10"	99.20" 99.40"
<u>MULTISTAR</u> (POENSGEN) Assuming all Models	31-1/3"	31-2/3"	98.40"	99.40"

<u>MANLOVE</u> , All models EXCEPT				
Euracorde	23-3/4"	24-1/4"	74.60"	76.20"
Euracorde data unavailable				
ROLL DIAMETER	ROLL CIRCUMFERENCE			
MANUFACTURER AND MODELS	PADDED & COVERED		PADDED & COVERED	
	Min.	Max.	Min.	Max.
<u>BAKER PERKINS JAXONS</u>				
Rolls and Chests are	27-1/4"	27-5/8"	85.60"	86.70"
Size Graduated				
<u>D'HOOGHE ADDIRONER</u>				
Rolls are geared each travels	23-5/8"	24"	74.25"	75.40"
progressively faster, pad				
graduation unneeded.				

A Complete technical file should be kept on all equipment, we feel it important enough to suggest keeping it in several locations, one of them fireproof. Here are some of the items we'd suggest having permanently at your instant disposal:

1. Make, model, serial, and type of your ironer. In event model plate should become lost or destroyed all necessary data can be built from this.
2. Complete operations manuals, in plural, on all ironers. Make notes in them of ANY modifications made to equipment.
3. If ironer has been re-built or dismantled, for any reason, be certain that parts were not interchanged from another machine. Note specifically so there is no future uncertainties.
4. Should replacement rolls or chests ever become necessary it is vital that they fit ironer in every respect, especially sizes and diameters. These, too, should be recorded.
5. If buying a used ironer insist on guarantee that all chests and rolls are matched to what ironer is represented to be. Some years ago it was common practice to use rolls and chests from different ironers, even different makes, and put them together. More often than not the result was such a misfit that it could never be made to serve decently. I hope those days are gone forever! If you have such a thing the sooner you replace it completely the happier you'll be.
6. A reasonable knowledge of the age of springs will help. They do compress in use and this change from the original tension can, and MUST, be compensated for, in padding, to provide accurately sized rolls.
7. There are two basic types of spring s used on domestic ironers, several others on those from abroad. Suppliers MUST know which type is involved.
8. If ironer rolls once had springs, but are now deteriorated beyond use, they MUST be replaced. Rolls for use with springs are NOT the same as regular bare ones, they are what is known as a "float-roll". To pad this roll two separate applications are required 4 to 6 weeks apart. This results in much misery and great added-costs. This extra pad cost and labor will offset the price of springs in just a set or two of "float-roll" pads.
9. Make this information available to your supplier. If he says it isn't important and is unwilling to respect chest variations, find another one quickly, he hasn't yet been trained to help YOU.

You cannot be accurate without accurate details, when you have them many problems will soon disappear.

HOW TO INSTALL FABRIC PADS AND THEIR COVERS

These next three chapters will be devoted to complete details-on how to install all types of pads and covers. This Chapter Ten is dedicated to those persons who must install, use, and service fabric ironer pads and their covers.

MATERIAL CHECK

Little is more exasperating than to strip an ironer for re-padding and discover some of the required materials are missing. Prevent this situation by opening ALL cartons and packages and go through this check list.

1. Proper number of correct size pads.
2. Proper number of correct size covers.
3. Proper number of cover end springs.
4. Proper size and enough fastening devices:
 - A. If bare roll; rivets, drive screws etc. whichever is to be used, and make SURE they are the correct size.
 - B. Drill bits, one per roll, if fastening devices are different than those currently in use on ironer.
 - C. Special padding clips if ironer in either type bare roll Hy-Pro.
 - D: Enough extra Hamilton spring clips, and 8/32"s screws, if ironer is equipped with Hamilton springs.
 - E. If ironer has Zeidler springs you'll need 2" "T" Pins, about 1/3 pound per roll.
 1. If not enough "T" pins are present, best quick source for them is a beauticians supply house; these same pins are used in re-styling wigs.
5. #20 gauge soft wire, on bare roll installations, allow 12 feet per ironer roll.
6. If covers are to be clipper laced, proper number and length lacing wires.
 - A. Don't attempt to mix "clipper lace" with "alligator lace", they won't interchange. This should have been determined when covers were ordered.
7. Tube of "liquid iron" or very fast drying gasket cement.

TOOLS REQUIRED

Save time searching for tools, use this list and have them ready at ironer:

1. Electric drill with sufficient extension cord.
2. Measuring tape, 10 foot or more.
3. Chalk line and chalk.
4. Drill bits of proper sizes.
5. Thread tap for 8/32's screws if installing over Hamilton springs.
6. Two types of pliers; regular and "dikes".
7. Adjustable wrenches; 8 and 12 inch ones.
8. Large pair of scissors or shears.
9. 2 or 3 hammers, any type.
10. Screw drivers; 3 or 4 sizes.
11. Scrapers, putty knives, stiff wire brushes for cleaning rolls and chests.
12. Very fast drying aluminum paint and paint brushes.
13. Cleaning rags and solvent-paint thinner.
14. Pocket knives.
15. Air hose.

With all materials checked, and tools accumulated, let's start the job:

STRIPPING IRONER

Release roll pressure to OFF position, raise canopy if one is present, turn off vacuum motor, and remove ironer tapes or strings. Remove and lay aside finger roll, stop bar, and tape-spool tightener bar at front of ironer and spool bar at the back. Now you're ready to strip off pads and covers:

1. Unhook cover end springs from all rolls.
2. Start with roll 1, at front of ironer, turn roll so fastening devices are at top of roll.
3. Unwrap cover-pad assembly to point of attaching. Assuming binder is being replaced, pull everything loose from fastening devices.
 - A. If bare roll ironer remove fastening devices (rivets, drive screws etc.) and check new ones to be sure they fit the holes already in the rolls; if they do not fit and new holes must be drilled, do this:
 - I. FILL ALL HOLES with "liquid iron" or gasket cement. Leave NO open holes in the rolls, they'll cause rust-staining later on.
 - B. If over Hamilton springs merely pull binder out of the spring clips.
 - C. If over Zeidler springs remove binder and all "T" pins holding it.
4. Now pull entire pad-binder-cover assembly from under roll, pull toward front of ironer, and dispose of the assembly.
5. Repeat process until all rolls have been "stripped".
6. Now is a good time to clean vacuum tubes as outlined in Chapter 4.

PREPARATION OF ROLLS AND CHESTS

Allow the time needed to do the job right, time skimping and leaving steps undone leaves dirt which will eventually come out through new pads and covers, causing dirty covers and linens. Use scrapers, putty knives, or coarse steel wool to completely clean any accumulations of build-up from the unused cheat ends. Then prepare the rolls for covering:

Bare or Hard Rolls

1. Clean entire surface of rolls. Use stiff wire brushes, scrapers, and putty knives if needed to get total accumulations of "goop" loose and off.
2. Wipe rolls with rags wet in solvent-paint thinner to remove rust wax. It WILL be there, especially on first half of the ironer.
3. Blow off all rolls, chests, and space between cheat ends and frames.
4. Again check for unwanted open holes that may have been hidden by dirt.
5. A complete professional job includes painting rolls with very fast drying aluminum paint. This ensures rust will not come up through pads later on; it will also increase heat reflected to padded roll surface.

CAUTION: run heavy cloth into ironer to protect chests from any paint drippings, an old apron is fine.

Spring Covered Rolls

1. Blow the dust and dirt out of springs; there WILL be MUCH there!
 - A. protect yourself from dust inhalation by using a surgical mask over nose and mouth. Otherwise actual physical illness can result.
2. On Hamilton springs check EACH spring clip replacing all that are weak, badly bent, or broken; you'll depend upon these clips to securely hold the now pads and covers for many months.
 - A. Don't leave clips extended fully upward; they could scratch chests at unpadded rolls as they turn.

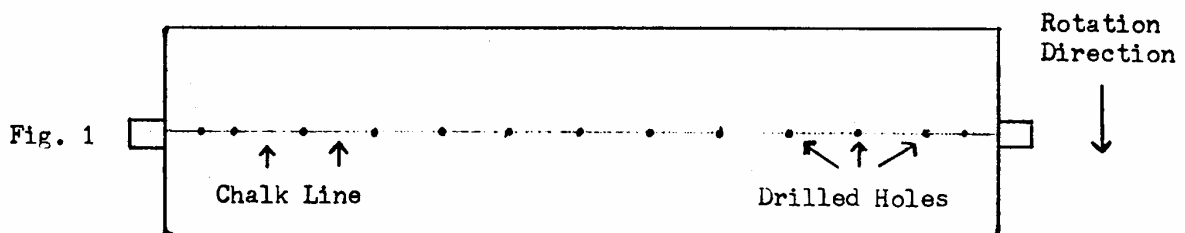
- B. Tighten clip screws, if new screws are needed use 8/32's by 1/2" long; brass or stainless steel ones are preferable.
3. During roll stripping an occasional spring is badly pulled, it is not possible to put it back into position, or to replace it; so cut it off.
4. If springs are missing in area larger than 1-1/2" across this hole must be filled lest it leave a low spot in the finished padded roll.
 - A. Fill the hole tightly with STAINLESS steel wool if available.
 - B. Or use just-removed wax-saturated padding (not cotton), pound it in tightly with a hammer to height of the springs remaining.
5. Should spring plates be loose; pull a spring, drill a new hole, and insert a screw to snugly attach plate.
6. If you find Zeidler springs loose at trailing end of spiraled spring "rope"; tighten and re-insert their holding clips and wires.

ATTACHING BINDER-COVER

Do JUST ONE ROLL AT A TIME, completely pad and cover each roll before going to next one. Cover-binders and pads should NEVER be applied to a cold ironer; heat "softens" most cover fabric, makes it flexible, and reduces initial friction with chests. I've seen new substantial covers BADLY torn attempting to install on a cold ironer. At this point put 15 to 20 pounds of STEAM INTO CHESTS; enough so chests will be quite warm - 125° to 135°. Determination on roll pressure screw must be made NOW; if re-padding with same type-make pads as just removed, and if there were NO adjustments made to the screws during the life of the old padding, leave them alone. BUT, if you ARE changing type-make of padding, or if screw adjustments WERE made on old pads; remove the pressure screws, wire brush their threads, add a drop or two of oil, and replace them LOOSELY.

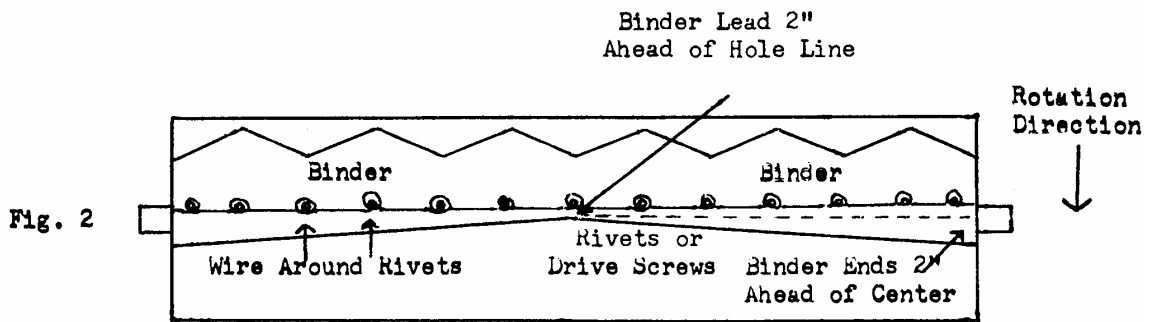
Bare or Hard Rolls We repeat, if you are not using any of the existing holes on the rolls FILL them. Then starting with roll 1, at front of ironer, eliminating steps 1 and 2 if you ARE using the old holes, do these things:

1. Use chalk line truly centered at top of roll.
2. Drill holes to fit rivets, drive screws etc. at 6" or 7" intervals. At each end of roll add an extra hole at half usual spacing. See Fig. 1 below:



3. It is a good idea to "stagger" hole lines on rolls as you progress back on ironer; this eliminates having small pad lead "bump" on all padded rolls meet linens at the same moment with a resultant "jumping".
4. Lay binder, or binder-cover if they are attached, back over following rolls with lead edge toward front of ironer. Center it across roll, by measuring, and position binder lead edge straight across roll about 2" forward of line of holes.
5. Insert rivet etc. through binder into CENTER hole 2" back of lead edge, tightly but temporarily. Pull binder snugly to one roll end and PULL BINDER END FORWARD 1-1/2" to 2" and insert rivet etc. through binder into last hole to hold binder snugly; repeat process at other end of roll.
 - A. Placing "bow" into binder lead eliminates circumference wrinkles in cover when pad-covering is finished. See Fig. 2 below for "bow".

6. Start at either end of roll and wrap #20 gauge soft wire around the first rivet and drive rivet solidly into place. Go to next hole, insert rivet and wrap continuing wire around rivet once keeping wire wrap to FRONT of rivet, drive that rivet firmly in place with wire under rivet head; continue across roll using ALL holes in the same manner.
 - A. Wrapping wire around front of rivet makes certain wire will not be pulled loose as roll turns under pressure. See Fig. 2 below:

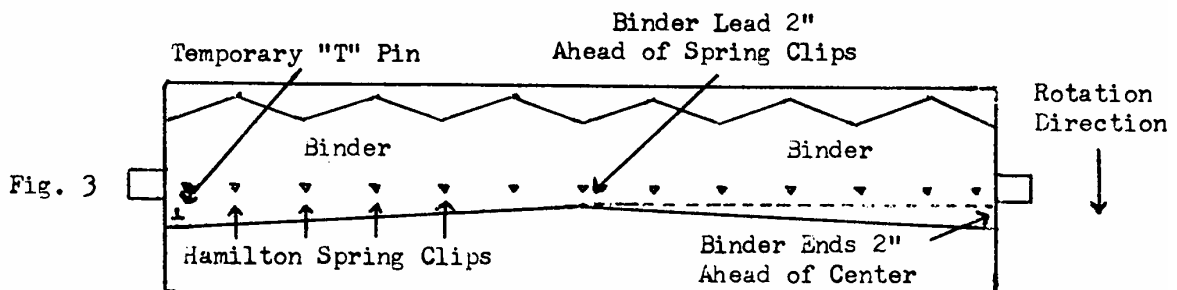


7. Do not proceed to other rolls until this one is completely padded as described in Inserting Pad section later in this chapter.

Spring Covered Rolls Method of attaching binder over springs is different than bare roll and there are two types of springs to be considered:

Over Hamilton Springs

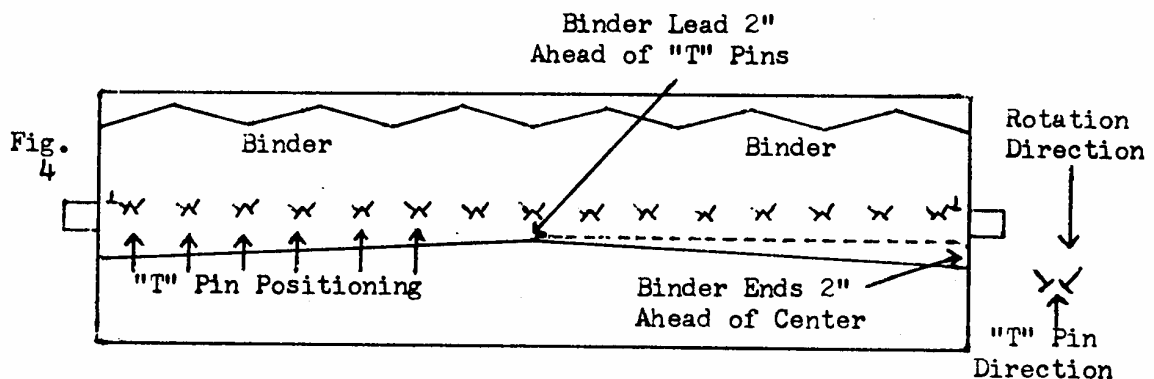
1. Position first roll with spring clip row at the top.
2. Bend spring clips to full upright position and again check each clip.
3. Lay binder back over following rolls with lead edge toward front of ironer. Center it across roll, by measuring, and position binder lead edge about 2" forward of line of spring clips.
4. At center clip cut hole in binder just the width of clip, 2" behind lead edge, using "dike" pliers or shears. Push hole to full depth of clip, bend clip FORWARD and flatten with hammer. Roll binder to one roll end and PULL BINDER END FORWARD 1-1/2" to 2"; insert "T" pin to hold binder snugly and repeat process at other end of roll.
 - A. Placing "bow" into binder lead eliminates circumference wrinkles in cover when roll pad-covering is finished.
5. Working from center toward roll end, cut holes in binder, insert over clips, bend clips forward and flatten with hammer, as in item 4, until ALL clips have been used. Clip line will be straight even though binder is "bowed". See Fig 3. following:



6. Use of wire under clips isn't needed but not harmful if desired.
7. Do not proceed to other rolls until this one is completely padded as described in Inserting Pad section later in this chapter.

OVER ZEIDLER SPRINGS

1. Use any position on 1st roll but DO stagger positions from roll to roll so attaching points will all be different.
2. Use chalk line truly centered at top of roll.
3. Lay binder back over following roll with its lead edge toward front of ironer. Center it lengthwise of roll, by measuring, and position it so lead edge of binder is straight across roll about 2" forward of chalk line,
4. At center of roll, 2" behind binder lead edge, insert 2 "T" pins through binder into springs so pin heads form a "V" about ¼" apart; be SURE heads are toward front of ironer and point directed to rear! Insert pins at about 30° off horizontal into springs; "V" angle should be about 100° at heads.
5. Pull binder snugly to one roll end and FULL BINDER END FORWARD 1-1/2" to 2" and insert "T" pin to hold binder snugly and repeat process at other end of roll.
 - A. Placing "bow" into binder lead eliminates circumference wrinkles in cover when roll pad-covering is finished.
6. Working from center toward roll ends, insert "T" pins at 4 or 5 inch intervals in "V" manner described in item 4 adding 2 or 3 extra pins at each end. "T" pin row will be straight even though binder is "bowed". See Fig. 4 below:



7. Do not proceed to other rolls until this one is completely padded as described in Inserting Pad section later in this chapter.

At this point, before inserting pads, in all installations, do these things:

1. If covers are to be clipper laced to binder, and did not come attached, lace them now.
 - A. Cover will be wider than binder so make sure cover is centered with same amount extending beyond each end of binder.
 - B. Alternate lacing "loops" i.e. one loop of cover then one loop of binder etc. inserting lacing wire as you go. Use ALL the loops.
 - C. Leave 1" to 1-1/2" of lace wire beyond each end and sharply bend ends to at least a 90° angle and insert angles under the cover-binder.
2. Add another 10 to 15 pounds of steam to ironer.

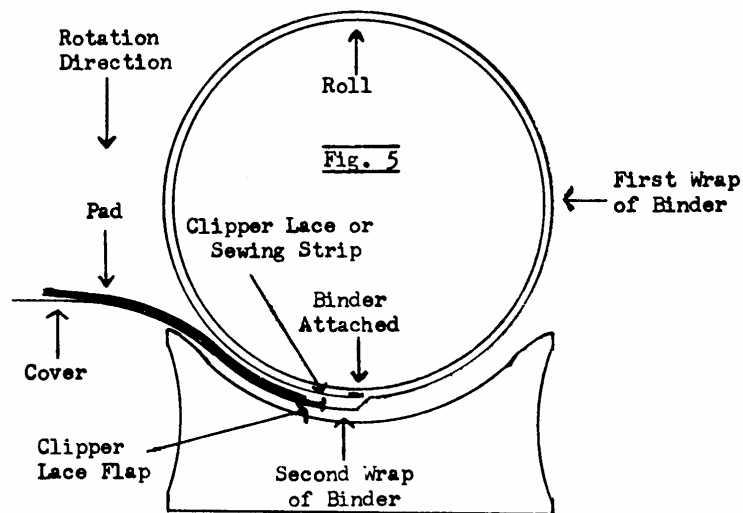
3. Using hand mechanism, if possible, add just enough pressure so covers and pads will snugly touch chests as they are rolled in. NOT full pressure.
4. In event you are NOT replacing binder, just clipper lacing new covers to old ones and inserting new pads, do these things completing 1 roll at a time:
 - A. Position roll to lacing point and remove lacing wire and old pad.
 - B. Completely blow all dirt from ENTIRE ironer, including old binder.
 - C. Attach new cover to binder, as detailed above.

Complete installation by following all the procedures that follows:

INSERTING PADS

After binder-cover is securely fastened to first roll (don't attempt to attach binder-cover-pad on more than one roll at a time) follow those steps:

1. Rotate roll 1 full turn plus a bit less than another 1/2 turn so clipper lacing (stitching on sewn covers) approaches bottom of roll.
2. Flip remaining amount of cover-binder to the forward end of ironer.
3. Lay pad down into chest on top of the remaining cover-binder making sure pad is centered on roll, measure don't guess. Lead of pad MUST be straight across roll
4. Lead edge of pad MUST JUST TOUCH TRAILING EDGE OF CLIPPER LACE FLAP, just to stitching on sewn combinations. This is especially important; TRAILING EDGE OF PAD MUST COVER CLIPPER LACING, or stitching on sewn ones, by about 1" when completely wrapped onto roll. This is to prevent cover wear from lacing, or stitching, when new pad-covers are in position.
 - A. Some binders have a line indicating point of pad insertion, use it.
5. Leaving cover and pad lay toward front of ironer; rotate ironer at lowest speed until assembly has revolved 3 or 4 times. See Fig. 5 below:



6. Check roll pressure, it should be snug but still NOT ironing pressure.

Repeat ATTACHING BINDER COVER and INSERTING PADS operations until all rolls are completed. Then proceed to:

PREPARATION OF IRONER FOR PRODUCTION

Bring ironer to full heat with amount of steam used in production. While heat is being increased do these things:

1. Add a bit more roll pressure, still not that needed for ironing.
2. Replace tape-spool guide bars front and rear, then the stop bar, and finally the finger roll.

With air hose blow ironer off completely to remove all loose dirt from the chests, rolls, and space between chests and frames.

4. Clean and wax chests! Refer to Chapter Six, Waxing Schedule, item 3; "When Breaking in a New Set of Covers", and follow it EXPLICITLY. This is a VERY important operation.
6. NOW, if pressure screws at ends of rolls were removed as discussed in last two sentences of first paragraph of ATTACHING BINDER-COVER section in this chapter, or just to be sure of their settings loosen them now, then:
 - A. With ironer running start at LAST roll and bring set screws down to just finger tight and lock in that position. Go to next forward roll, bring screws to finger tight PLUS 1/8 turn and lock in that position. To the next forward roll and bring screws to finger tight PLUS 2/8 turn and lock in that position. Proceed forward through ALL remaining rolls and make the same adjustments adding 1/8 turn progressively at each roll.
 - B. CAUTION: This is a "one man" job. It isn't important which man, but only one should adjust the screws; each person has different finger strength so more than one person would bring different settings.
7. Bring rolls to full ironing pressure. We repeat pressure setting instructions from Chapter 4:

On American (or Canadian) Standard, Streamline, Sylon, and Super Sylon, on Troy Standard and Speedline, all Super, Hagen, Hoffman, Paramount, and Smith-Drum ironers, use any, or all of the following methods; each with heat and running:

- A. On each side of front of ironer, just beyond feed board and out against the bearing bar frame, is a vertical steel rod 1" to 1-1/4" in diameter. This is the bar that pulls bearing block assembly and rolls into chests when pressure is being applied. When you have added enough pressure so you can forcibly "wiggle" this bar, stop there you have enough.
- B. Just above ends of each roll shaft and bearing block, in the moveable frame assembly, is a cotter pin. Add pressure just to the point these pins turn free, that's enough. Use this in conjunction with system C:
- C. Add pressure to expected requirement, then use a piece of wrapping paper about 24" wide, fold double, and insert well into first chest, NOT under finger roll and preferably not under ironer tapes. You'll know you have right pressure when you can hold it with both hands and not have it torn nor pulled away from you. If it slides out there isn't enough pressure.

American Hy-Pro pressures are "pre-set", 2 rolls at a time, by air pressure on control panel. This is proper pressure, no more, no less.

Troy Rollmaster manual reads: "Feed a piece of wrapping paper 6" wide by 4 feet long into the first roll. Proper pressure is applied when the paper can ALMOST BE WITHDRAWN WITH THE MACHINE RUNNING, WITHOUT TEARING PAPER."

8. Install cover springs to secure cover ends from flapping; attach hook of spring into grommet on trailing edge of cover, rotate roll half way and insert remaining hook into the other grommet. Do this to each end of each roll.
9. Turn on vacuum motor and lower canopy, ironer is ready to iron!

There remain several specialized topics that need to be discussed:

Troy Rollmaster Ironers There is a change from normal attaching procedure on these. Again quoting from Troy Rollmaster instruction manual: "Drill through the 3/16" x 3/4" strap (there are two on each roll but use only ONE for current padding-covering) and roll using the pilot holes provided for spacing. (holes may already be drilled so determine size of rivets or drive screws etc. needed) Over-lap (insert) binder cloth approximately 1-1/2" (use "bow" method of attaching outlined earlier in this chapter) and start drive screws (or rivets) part way in. Using #20 gauge wire and starting at one end take one turn around screws (or rivets) proceeding across the roll (as described in Bare Roll Section in this chapter). With the wire in place drive the screws (or rivets) down flush with the fabric." In all quotes from Troy manuals the ()'s are those of the author of this book.

Now follow a procedure detailed for all other ironers in the INSERTING PADS and PREPARATION OF IRONER FOR PRODUCTION sections in this chapter. It is imperative that unused portions of chest be thoroughly cleaned on this ironer; because of its high speed production dirt build-ups become much heavier at those points with greater susceptibility to damaging cover wear.

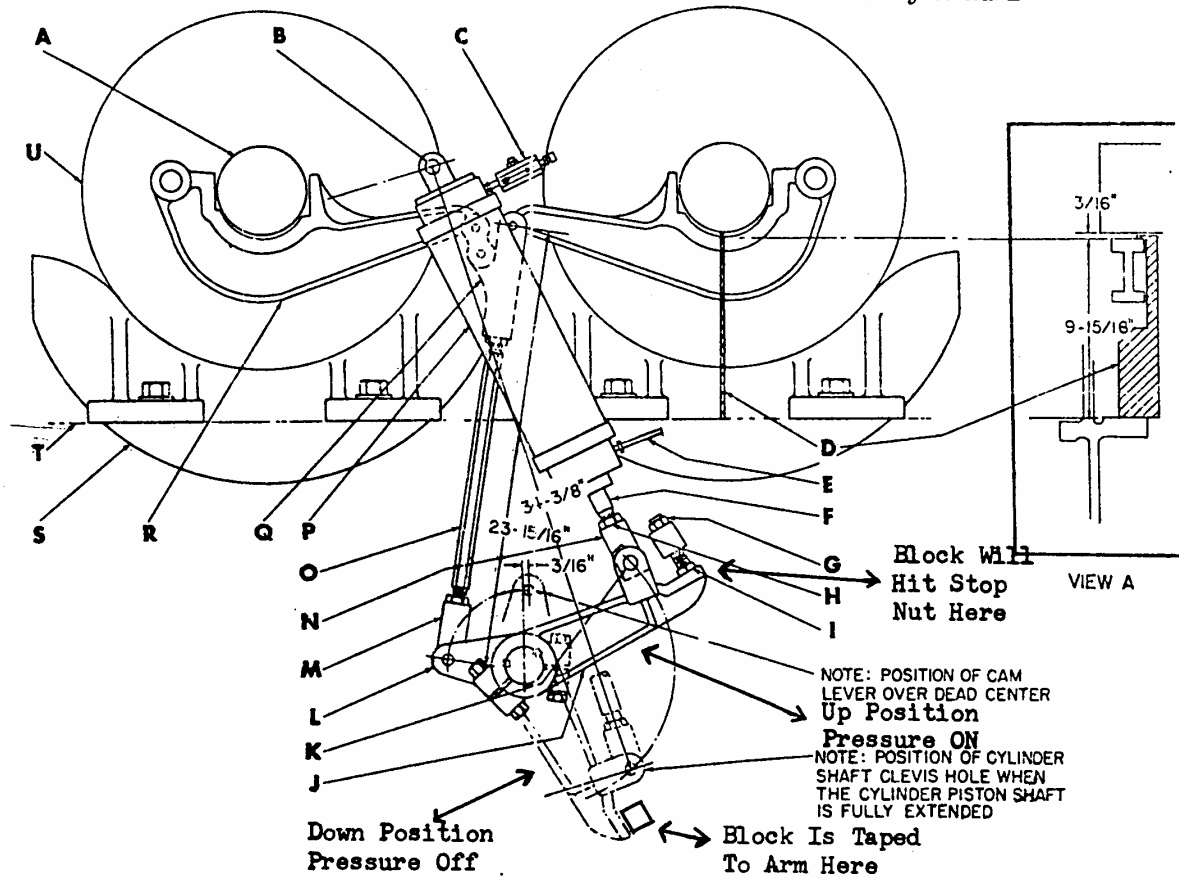
American Hy-Pro Ironers There are three types of rolls on these ironers, it is necessary to know in advance of ordering padding-covering which is present. One type has Hamilton springs and the system for installing covers and pads is almost identical to any other ironer similarly equipped. There are also Perforated Plate and Steel Mesh rolls; each of these requires special attaching clips and the clips are different for each type roll. Be certain at time of ordering pads and covers you will have enough of the PROPER clips. In any event binders MUST be attached with "bow" system. After binder-covers are attached follow standard procedures for all other ironers in the INSERTING PADS and PREPARATION OF IRONER FOR PRODUCTION sections of this chapter.

It is also imperative that unused portions of chests be thoroughly cleaned on this ironer; because of its high speed production dirt build-ups become much heavier in these points making them more susceptible to damaging cover wear.

Hy-Pro pressure is either ON or OFF and it is recommended that rolls do not receive full pressure when installing new padding to avoid damage to springs or new padding and covers. A metal or wooden block 2" thick should be taped to the top of the pressure arms; there is one of these arms for each two rolls, located inside the guards on the left side of ironer. This shortens the stroke so when pressure arm comes to rest at the Stop Nut there will be greater clearance between roll and chest. See Fig. 6 below:

Fig. 6

From American Laundry Machinery manual



REMOVE THESE BLOCKS AFTER IRONER HAS BEEN COMPLETELY PADDED AND COVERED!
Ironer will not iron if they are still attached.

PREPARING IRONER FOR PRODUCTION: Bring ironer to FULL HEAT; while it is being increased let ironer continue running and do these things:

1. Adjust pressure screws starting with LAST ROLL, rear of ironer: ELIMINATE THESE STEPS ON HY-PRO AND ROLLMASTER IRONERS.
 - A. Set both screws finger tight and lock in that position.
 - B. Next roll FORWARD; turn screws finger tight PLUS 1/8 turn and lock them.
 - C. To next roll FORWARD; set screws finger tight PLUS 2/8 turn and lock them.
 - D. Repeat at each preceding roll adding 1/8 turn progressively to each roll.
 - E. NOTE: this is a one-man job, each man has a different feel for finger tight.
2. Replace all parts removed from ironer before stripping.
3. Replace ironer tapes:
 - A. Fasten tape to towel, feed through ironer, and bring over spool bar at rear of ironer and back over rolls to front. DO NOT cut tape; feed through tape tightener arm, fasten together, run

through again to make 2nd tape before cutting 1st tape loose. Proceed in this manner until all tapes are in place.

- B. Tapes should be heat sealed (or stapled with a tape flap between staples and chest), NEVER TIE TAPES: KNOTS DESTROY PADS!
4. Blow off running ironer chests, rolls, and covers, between rolls and frames.
5. Clean and wax chests and covers:
 - A. Run steel wool chest cleaner 5 or 6 times on each side of ironer.
 - B. Run 8 or 10 old cloths to remove dirt that cleaner loosened.
 - C. WAX with 3/4 cup per roll broken into 2 operations, then empty wax cloth 4 to 6 times. Remove excess wax with 8 or 10 soiled linens. BREAK IN COVERS WITH WAX - NOTHING ELSE.
 - D. For next 2 days repeat A, B, & C with half amount of wax.
6. Apply full normal operating pressure: REMOVE THE WOODEN OR METAL BLOCKS ATTACHED TO HY-PRO PRESSURE ARMS, ironer will not iron with them there.
 - A. Add pressure until cotter pin in bearing block on first roll turns free, OR
 - B. Use wrapping paper 24" wide, fold double and insert well into 1st chest. Proper ironing pressure is when you can just hold paper with both hands without its tearing or pulling away; if it slips out there isn't enough.
 - C. For Rollmaster pressure settings see last page of Rollmaster ATTACHING SHEETS.
7. Attach cover end springs; hook into trailing cover grommet, turn roll half way and hook into 2nd grommet.
8. Ignore "buckling" of linens from last chest to aprons; this will likely exist in decreasing amounts for 4 or 5 days until newly padded rolls have properly "seated" into chests. If this is objectionable after that time, contact your F. H. Bonn Co. representative; apron drive roll build-ups may be needed. NOT APPLICABLE TO HY-PRO AND ROLLMASTER IRONERS.
9. Turn on vacuum pump and lower canopy; you are now ready to operate with the FINEST pads and covers available.

TIPS FOR MORE EFFECTIVE IRONING

1. Pre-heat rolls under pressure 10 to 12 minutes each morning so feeding moisture is not put into cold rolls and result in condensing-staining.
2. Run ironer 8 to 10 minutes after end of feeding day; this removes all moisture and leaves dry rolls the next morning.
3. Use the narrow chest cleaner that accompanied Tex-Steel pads! Run it along roll and chest ends at least once each day on each end.
4. Always keep ironer clean and waxed; use system outlined in Item 5 above, sections A, B, & C EXCEPT cut everything by 2/3.
5. For 1st weak check pressure every 2 or 3 hours of operation; add if NEEDED.
6. NEVER use excessive pressure. Check daily and caution all personnel to let setting alone once it has been determined as proper.

MISCELLANEOUS TIPS AND HINTS.

This is a series of just what it says, Tips and Hints. They are not in any particular order and they may or may not have been detailed earlier in this book. They are merely thoughts that may be of help in day-to-day flatwork operations, with a genuine desire to make this book more helpful than anything heretofore compiled.

Let's begin with suggested routine for starting and ending the operating day.

Turning Steam Into Ironer: Turn it into ironer gradually! Turning "full-bore" steam into cold chests causes almost all warpage. If you don't already have it install a by-pass valve. At least give the ironer a good 30 minutes to slowly be brought to full heat.

Pre-Heating Ironer: When ironer has become hot, at beginning of the day, add the proper roll pressure then clean and wax. But DO let ironer run 10 to 12 minutes at full heat before feeding begins. You'll have rolls hot all the way through padding, covers, and roll itself. You'll prevent feeding moisture condensing, and staining, because of cold rolls. Equally important is drying out rolls at end of feeding day; run ironer at full heat and pressure 6 to 8 minutes to eliminate all moisture from rolls. The ironer will be dry to start the next day.

Lack of Heat: Too often plants have grown like "Topsy" and demand more and more steam but boiler capacity hasn't increased to keep pace. Is your boiler really large enough to supply today's demand? Then there is the possibility you are losing heat in long un-insulated steam transmission lines. Yes, many degrees of needed temperature are lost in this manner. Old pipes fill with scale which isn't visible; without you realizing it transmission lines are not delivering the steam they should and you think they are. Take the temperatures of the chests and see if you really are getting the heat into the ironer your boiler gauge says you should be getting.

Roll Pressure: An ironer isn't a "squeezer", moisture is eliminated from linens with heat and NOT extra pressure. Many pages were set forth earlier in this book discussing the importance of pressure and how to determine the amount needed. Determine where pressure should be set and be cautious of over application. Once determination has been made caution operating personnel to let it alone! Designate engineer, superintendent, and supervisors to be the ONLY ones to touch it.

Very helpful in preventing over pressure application is the use of limit switches; when someone applies excessive pressure ironer will stop or a bell will ring, pressure can then be corrected before damage is done.

The same caution is needed for roll pressure screws; once they've been set LET THEM ALONE! Call your padding-covering supplier before tampering with them. I know of a clever sign on an ironer reading "Don't Screw Around with These Screws or We'll Screw Around With Your Pay Check".

What to do if pressure bar has been permitted to go "over center". Best if it had been prevented, if it HAS happened use large warning sign so all pressure setting personnel are aware pressure bar operates in reverse. Then the very next time rolls are unpadded run it back over center where it belongs.

Staining of Covers and Linens: Is there is a row of stain spots running straight across some rolls? They could well be coming from holes left open from some previous padding job. Traces of moisture from linens enter them into the rolls. That moisture then rusts and/or mixes with dirt that was already there when the ironer was made, condenses overnight, and runs out soaking pads and covers. If stains are new unwrap the pads and fill the holes. Otherwise you will need to completely re-pad and

re-cover since both items will be filled with the stains; when you do this be sure to fill those open holes.

But look overhead for the cause; un-insulated water pipes drip moisture and more than once I've seen these drippings exactly paralleling an ironer roll. Wrap the pipes and prevent this.

Are soap specks bothering you? If your washroom technician isn't able to locate the cause maybe they aren't soap specks at all. If someone has been throwing wax over the ironer at random you'll find the wax is carbonizing and spotting linens just like soap specks. Throwing wax is a real "no no".

Feeding Practices: People are not "born" with inherent ability to properly feed an ironer; they must be taught. Train them properly, it will pay huge dividends, and quickly, too.

Insist operators use ALL THE SURFACE OF THE ROLL PADDED. Otherwise ends of rolls and chests never get fed, it is easier for operators to find excuses for not feeding ends than it is to move over and use the ends, result is dirty chests and covers, VERY rapid cover wear, and dirty linens when something IS fed there. The next time you pad don't pay for, nor pad, portions of the rolls that will not be used.

Even so some dirt will accumulate on the chest and roll ends. This can be greatly helped by placing a piece of flannel, cotton if available, about 12" wide over the roll ends. Pin the flannel to the "stop bar" in front, let it lay loosely over the roll ends, and pin it to the spool bar at the rear. It really works by wiping the dirt off the covers after they have picked it up from the chests.

A very popular effective way of getting feeding properly spread is to insert colored feed ribbons at the points you expect the girls to feed.

Cleaning and Waxing: There just isn't enough can be said about the need for this! As much damage to covers, pads, and chests comes from dirty chests as from all other causes combined. Re-read Chapter 6 and pick out the cleaning-waxing procedure that best fits your operation and USE it.

Do use steel wool type chest cleaners. Those with emery have a tendency to rapidly fill with dirt and become useless. Then, too, bits of emery can, and do, come loose, attach to covers and continually grind "grooves" in the chests.

If you are using steel pads you were supplied with a narrow chest cleaner to help keep chest ends clean. Do, by all means, run this along each end of ironer at least once a day. It helps stop accumulations of dirt in those hard-to-get-to locations, and will keep the narrow amounts of infrequently used pad level with the remainder of the roll. If you don't have one of these the F.H. Bonn Company will be very happy to supply one at a very nominal charge.

You "wax" for lubrication, wax does it best. Trough grease gives very little lubrication, unless you use it to grease pans in a bakery, but then you aren't running a bakery. In fact it is many times felt that trough grease actually makes chests and covers sticky; just the reverse of what you are seeking.

Ironer Tapes: Dacron by all means! Nylon, almost unavailable anyway, was so abrasive it scored chests and actually "sliced" covers into strips. Nylon strings will do the same thing.

Never tie knots in tapes! The knots are bumps always in the very same locations on the roll. They are very destructive to padding in those areas. Always fuse or staple the tapes. Use staples by leaving a loose "flap" under staples keeping them off the chests which they could scratch; try aluminum ones as are used in some dry cleaning operations.

Are your tapes breaking faster than they should? They could be applied too tightly; or in wrong positions over tape tightener arms. Too, the speed of tapes is governed by the circumferal speed of the last roll since it, because of roll graduations, is the largest on the ironer; there might well be too MUCH difference between last and first rolls causing tapes to snap.

If you need to continue with aprons and they are running too slow to take the linens from the last chest or wearing too rapidly, they are likely slipping on their drive rolls. Build up those drive rolls; use apron duck, dacron or NOMEX cover material, emery cloth, but best of all are the prepared "rubber" ones made specifically for the job. CAUTION: you must build-up both upper and lower drive rolls exactly the same way and in the same amount.

Why Linens Climb Rolls: Reasons are many but most are simple. Using wax substitutes that do not lubricate for one. Linens too wet going into ironer. Cold rolls or chests. Ironer tapes at last roll going around the back of last roll instead of spool bars will let linens climb right up the back of that last roll. New covers may be a bit "fuzzy" and sticky for a few days, WAXING very heavy will usually help. And that old bugaboo static electricity; go back to Chapter 7 and re-read about static cause and elimination. The most common reason, though, is improper rinsing leaving too much sour and traces of other washing compounds on the linens.

Preventive Maintenance: Really one of the least operating costs you have. Suppose ironer is "down" a couple of hours because of a preventable mechanical failure; multiply the hourly rate of the many people standing around until it is repaired and add the overtime costs it brings. Compare that cost with the price you would have paid an engineer or maintenance man to take the hour or so, of non operating time, needed to prevent the break down. The difference is truly amazing! And think of the reduction in parts and labor that preventive maintenance could have caught before it became serious.

Foreign Articles in Ironers: I cringe to think how often someone drops a tool into an ironer and takes the attitude "the roll will bring it around THEN I'll take it out". Yes, the roll MAY bring it out but along with pieces of the chest, cover, and pad, in so doing. Stop the ironer and take it out NOW!

Never reach into a moving ironer to pull out anything, either with hand or a "mop" handle, something or someone always gets hurt. I've seen broken burned hands from just this. And I've seen "mop handles" tear pads, covers, and springs torn off. These are not, unfortunately, infrequent and the resulting costs are prohibitive -- doctor and hospital bills, new pads, new covers, new springs, and much down time.

Let's Not Forget OSHA: As if they would let us. There are several things OSHA requires on ironers, and rightfully so: 1. The stop bar MUST be operative. 2. Guards to height of 6 feet from floor that will repel a ½" ball. 3. No grease and oil on the floor around the ironer. 4. No makeshift electrical connections to control box or panel. 5. All moving parts; gears, bearings, chains, belts, shafts etc. must be covered with guards. 6. All steam lines within 7 feet of an operator or 7 feet of the floor must be covered with an insulating heat resistant material. There are probably other details involved, most of which can be taken care of with good housekeeping and preventive maintenance.

In summary: let's keep everything clean, we ARE a cleanliness industry. Prevent potential problems, it costs too much not to. And continually ask yourself "is good ENOUGH really GOOD enough" in supplies, maintenance, training, and equipment knowledge.

Remember "True Economy And True Quality Are One And The Same Thing", I hope I've helped you get both.