TYPEWRITER MECHANIC'S HAND-BOOK

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FIRST EDITION

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INDEX

PARTS OF THE TYPEWRITER

1. **Cylinder knobs** (also known as thumb wheels). At both ends of the cylinder. For turning the cylinder.
2. **Carriage release.** At right and at left of carriage (the movable mechanism that rests on the frame of the machine). For disengaging the spacing mechanism, so that the carriage can move freely from side to side.
3. **Carriage scales.** One or more scales (aligning scale, line scale, cylinder scale, front scale) close to the roller. For determining the writing space from left to right, for indicating the position of any point on the writing line, and for aligning the paper.
4. **Paper guide.** At the left edge of the paper shelf (see No. 6). For fixing the position of the left edge of the paper.
5. **Paper guide scale.** On the paper shelf. For determining the position at which the paper guide is set.
6. **Paper shelf** (also known as paper table). Behind and above the roller. The plate on which the unused portion of the paper rests.
7. **Roller** (also known as cylinder, platen). Along the front of the carriage. The device around which the paper is rolled.

8. **Paper bail.** On the roller. A bar with two or more small rubber rollers. For holding paper in place against the cylinder.

9. **Paper clamps** (also known as paper fingers). Two metal clips in front of the roller. For holding in position paper, envelopes, cards, labels, etc.

10. **Paper release.** At the right of the carriage (on some models, at the left). For straightening or removing the paper.

11. **Printing point indicator.** On or near the carriage scale. For indicating the typing point on the scale.

12. **Margin stops.** On the carriage or at the top of the frame. For setting the points at which the writing line begins and ends.

13. **Guide keys** (also known as home keys). Eight keys of the second row from the bottom (ASDF;LKJ), from which the fingers start to type.

14. **Space bar.** In front of the first (bottom) row of the keyboard. For spacing forward on the writing line.

15. **Line space lever.** At the left of the carriage (on some models, at the right). For returning the carriage and at the same time raising the paper to the next writing line.

16. **Line space gauge** (also known as line space adjuster, line space regulator). At the left of the carriage. For setting the machine for single, double, or triple spacing.

17. **Shift keys.** To the left and to the right of the bottom row of keys. For typing capitals and some special characters.

18. **Tabulator stops.** Small, flat pieces of metal on the tabulator rack at the back of the carriage. For stopping the carriage at one or more desired points on the writing line. On older models, the stops are set by hand; on newer models, they are set by means of a special key on the keyboard (see No. 19).

19. **Tabulator stop set key.** On or near the front of the frame. For setting the tabulator stops.

20. **Tabulator stop clear key.** Usually on or near the front of the frame on the side opposite to that of the tabulator stop set key. For clearing the tabulator stops.

21. **Tabulator key or bar.** On or near the front of the frame. For moving the carriage to the point at which the next tabulator stop is set.

22. **Margin release.** On or near the front of the frame. For enabling the typist to write beyond the point at which the margin stop is set.

23. **Shift lock.** Directly behind the left or the right shift key (on some models, behind both). For locking the shift mechanism in order to type a series of capitals or other upper case characters.

24. **Backspace key.** At the left of the top row of keys. For bringing the carriage back one space.

25. **Variable line spacer.** A button, usually in the center of the left cylinder knob. For rolling the paper to any desired level not fixed by the line spacing mechanism, thereby establishing a new writing line. (Compare with No. 28.)

26. **Type bar guide.** In front of the roller, at the midpoint of the machine. For indicating the typing point on the paper.

27. **Card holder.** A small attachment near the type bar guide. For holding cards, labels, etc., close to the cylinder.

28. **Ratchet release** (also known as line space release). A lever on the left side of the carriage. For rolling the paper to any desired level not fixed by the line spacing mechanism. When the line spacing mechanism is reengaged, the previous line of writing is restored. (Compare with No. 25.)

29. **Ribbon switch** (combination of stencil switch and ribbon indicator). At the right on the frame. For disengaging the ribbon mechanism when cutting a stencil; also, for typing on either the upper or the lower half of a bichrome (two-color) ribbon.

CHECK-UP ROUTINE

1 – See that *all* screws and nuts are tight.

2 – Check for end play; lost motion or binding in carriage rails.

3 – Proper carriage tension and ease of operation.

4 – Test paper feed rolls.

5 – Single line, double and triple spacing mechanism.

6 – No slipping in variable. See that release is easy.

7 – No end play in platen; must spin easy when feed rollers are released with ratchet disengaged.

8 – See that paper fingers slide easily on the paper finger bar and that they have the proper tension, or, check the bail to see that rollers are uniform against platen on both sides.

9 – See that carriage rack release levers properly release from either end of carriage.

10 – See that left marginal stop is so adjusted that it stops carriage at point set with no banking or running over.

11 – See that the right marginal stop rings bell properly and locks carriage and releases.

12 – Check tabulator mechanism.

13 – Check escapement dog rocker to see that it rocks back and forth freely with a minimum of side play. See if dogs are worn and if type bars trip escapement at proper distance from platen.

14 – See that back space pawl engages properly and that carriage back spaces easily when back space key is depressed.

15 – Check carriage motion. See that upper and lower case characters are in perfect alignment and that carriage shift lock works properly.

16 – Check ribbon mechanism.

17 – Test line finder scale for proper position.

18 – See that there is no binding of key levers in comb or of type bars in the segment or guide and that bars are set on abutment ring and in alignment.

19 – See that machine, type, feed rolls and platen are clean. Oil bearing surfaces carefully, excepting, of course, segment slots, which must never be oiled.

R.C. ALLEN TYPEWRITER

CAUSE OF TROUBLE

Carriage-crowding or piling

1 – Flimsy desk causing vibration.
2 – Uneven desk causing carriage travel uphill.
3 – Erratic touch of operator.
4 – Insufficient Mainspring tension.
5 – Rack too deeply meshed in Pinion.
6 – Platen end shake.
7 – Pinion binding on shaft.
8 – Escapement Rocker binding on Pivots.
9 – Tabulator Rack binding on Tabulator Set or Clear Lever.
10 – Mainspring Drum binding on bearings.
11 – Universal Bar Pivots loose, improperly seated or binding.
12 – Starwheel binding on Backlash Pawl.
13 – Space Bar out of adjustment.
14 – End shake in Rack.
15 – Loose Dog not positioned properly on starwheel tooth.
16 – Escapement Rocker Spring disconnected or insufficient tension.
17 – Dirty Carriage Rails.
18 – Insufficient clearance between Loose and Stationary Dogs.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

IMPRESSIONS — Imperfect

1 – Carriage loose in Rails.
2 – Platen pitted, slick, inflated, or improperly fitted.
3 – Abutment ring not parallel to Platen.
4 – Individual typebar not aligned to abutment ring.
5 – Motion adjustment Incorrect.
6 – Typebars sticking in guide.
7 – Typebars sticking in Segment Slot.
8 – Loose type on bar.
9 – Worn or battered type face.
10 – Platen ground down to too small diameter.
11 – Platen Shell Loose on Core.
12 – Poor Alignment.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

Keyboard not level

1 – Loose Keylever Bracket.
2 – Deformed or worn Typebar Rest.
3 – Keylevers sticking in Keylever Comb.

CAUSE OF TROUBLE

Line spacing irregular

1 – Glossy Platen and/or Feed Rollers.
2 – Ratchet Release engaged.
3 – Platen not even.
4 – Platen shell loose on Core.
5 – Variable slipping.
6 – Line Space Lever Stops incorrectly adjusted.
7 – Line space pawl spring broken or disconnected.
8 – Line space lever spring broken.
9 – Line space detent roller worn, binding or not riding the ratchet.
10 – Line space lever pivot screw or nut loose.
11 – Feed rollers irregular sized or binding.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

Margin Irregular

1 – Margin stop not holding on Margin Rack.
2 – Margin stop limit screw improperly positioned.
3 – Glossy Platen and Feed rollers permitting paper to slide to left.
4 – End shake in Platen.
5 – Starwheel backlash pawl too high or low.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

Paper Feed

1 – Platen and feed rollers glossy.
2 – Platen shell loose on Core.
3 – Feed Rollers binding on shaft.
4 – Feed Roller bearings dry.
5 – Bail Rollers binding on shaft.
6 – Variable slipping.
7 – Platen binding or improperly fitted.
8 – Ratchet detent not contacting ratchet properly.
9 – Worn ratchet or detent roller.
10 – Insufficient ratchet detent tension.
11 – Improper sized feed rollers.
12 – Flat, cracked or inflated feed rollers.
13 – Paper deflector improperly positioned or formed.
14 – Lack or uniformity of feed roller tension.
15 – Too much or too little feed roller tension.
16 – End shake in feed rollers excessive.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

RIBBON (won't feed or reverse)

1 — Improper spool or ribbon not used.
2 — Ribbon not directioned properly off spool.
3 — Ribbon spool improperly installed on shaft.
4 — Reverse, Trigger or lever binding.
5 — Ribbon spool shaft binding.
6 — Eyelet in end or ribbon preventing reverse.
7 — Spool catch spring screw loose or spring lacking tension to hold reverse trigger upright when ribbon spool is removed.
8 — Lower ribbon universal bar spring too loose.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

RIBBON (Cutting off tops of letters)

1 — Proper spool or ribbon not used.
2 — Ribbon not directioned properly off spool.
3 — Ribbon spool improperly installed on shaft.
4 — Ribbon twisted.
5 — Ribbon reverse failure.
6 — Ribbon spool shaft sluggish or binding.
7 — Adjusting screw to raise or lower ribbon out of adjustment, or loose.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

SKIPPING (General)

1 – Flimsy desk causing vibration.
2 – Rebound of keylever caused by faulty touch.
3 – Rack not properly meshed in pinion.
4 – Worn or broken tooth in rack.
5 – Rack binding on Pivots or some obstruction preventing Rack from meshing properly in pinion.
6 – Broken tooth in Pinion.
7 – Pinion pawl not seating in pinion or Pawl spring deformed, broken or misplaced.
8 – Escapement rocker spring disconnected or improper tension.
9 – Escapement Rocker loose on pivots, or too much end shake.
10 – Universal Bar binding on Pivots or improperly adjusted.
11 – Loose Dog broken, loose on Pivot or Pivot bent.
12 – Loose Dog not positioned flush on Starwheel tooth.
13 – Trip not adjusted properly.
14 – Starwheel tooth worn or face rough.
15 – Too much clearance between Loose and stationary Dogs.

MECHANIC'S NOTES:

CAUSE OF TROUBLE – SKIPPING

(Specific skipping in same space on each line)

1 – Worn or broken tooth in rack.

CAUSE OF TROUBLE – SKIPPING

(Equal number or spaces between skips)

1 – Broken Pinion tooth.

CAUSE OF TROUBLE – SKIPPING

(After shifting)

1 – Rack not meshed properly in pinion or insufficient Rack Spring Tension.
2 – End shake in Escapement Rocker.

CAUSE OF TROUBLE – SKIPPING

(After Spacing or on space bar depression)

1 – Space Bar Trip incorrectly adjusted.
2 – Rack not meshed deep enough in Pinion.

MECHANIC'S NOTES:

CAUSE OF TROUBLE — SKIPPING

(At beginning or end of line)

1 — Rack not level.
2 — Rack Adjusting stop screws not uniformly Adjusted.

CAUSE OF TROUBLE — SKIPPING

(After Tabulating)

1 — Insufficient Tabulator Stop Blade on Tabulator Stop.
2 — Tabulator Stop not fully set.
3 — Tabulator Rack lever incorrectly adjusted.
4 — Rack not meshed properly in Pinion.
5 — Tabulator Bar incorrectly positioned.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

Capital Letters out of Alignment or Splitting

1 — Operator using Shift Key incorrectly.
2 — Rubber Key Cap (on shift key) binding on frame or shift lock key.
3 — Excessive tension on shift springs.
4 — Motion out of adjustment.

MECHANIC'S NOTES:

FOR ALL TYPEWRITERS

CAUSE OF TROUBLE

TYPEBARS (Sticking or Conflicting)

1 – Dirt in segment slots.
2 – Not aligned to clear Type Guide.
3 – Burred at point bar enters guide.
4 – Links conflicting.
5 – Type cleaner affecting Rubber Typebar rest.
6 – Typebar Rest uneven or cracked.
7 – Lack of uniform Keylever tension.
8 – Keylever binding in Keylever Comb.

MECHANIC'S NOTES:

R. C. ALLEN TYPEWRITER

CAUSE OF TROUBLE

Carriage won't hold

1 – Rack lever binding, Rack not engaged in pinion.
2 – Broken loose dog on escapement rocker.
3 – Escapement rocker disconnected or removed.
4 – Pinion Pawl binding, not seating in pinion, or pawl spring broken or disconnected.
5 – Tabulator keylever sticking in Comb.

MECHANIC'S NOTES:

R. C. ALLEN TYPEWRITER

CAUSE OF TROUBLE

Carriage — won't escape, binding, or sticking

1 – Drawband broken or disconnected.
2 – Mainspring broken or insufficient tension.
3 – Margin Stops improperly located.
4 – Line lock not releasing.
5 – Escapement Rocker Pivots binding Rocker.
6 – Back Space Pawl engaged in Rack.
7 – Starwheel binding.
8 – Typebar sticking in guide.
9 – Cowl binding carriage by stopping ribbon.
10 – Line Space Lever binding on Typebar Cover. (Cowl)
11 – Tabulator Set or Clear Lever engaged between Tabulator Stops.
12 – Margin Stops fouled.
13 – Anti-Creep Rack binding or displaced.
14 – Drawband off drum or wound around Drum Shaft.
15 – Rails too tight, not properly adjusted.
16 – Pinion Wheel binding.

MECHANIC'S NOTES:

WOODSTOCK TYPEWRITER

CAUSE OF TROUBLE

Carriage crowding or piling

1 – Flimsy desk causing vibration.
2 – Uneven desk causing carriage travel uphill.
3 – Erratic touch of operator.
4 – Insufficient Mainspring tension.
5 – Sub-carriage improperly fitted (end shake).
6 – Rack too deeply meshed in Pinion.
7 – Platen end shake.
8 – Pinion binding on shaft.
9 – Escapement Rocker binding on pivots.
10 – Tabulator Rack binding on Tabulator Set or Clear Lever.
11 – Mainspring Drum binding on bearings.
12 – Universal Bar Pivots loose or binding.
13 – Starwheel binding on Backlash Pawl.
14 – Space Bar connections binding Rocker.
15 – Space Bar Keylever Spring broken or stretched.
16 – End shake in Rack.
17 – Loose Dog not positioned properly (flush face to face) on Starwheel tooth.
18 – Escapement Rocker Spring disconnected or insufficient tension.
19 – Dirty Carriage Rails.
20 – Insufficient clearance between Loose and Stationary Dogs.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

Impressions Imperfect

1 – Main Carriage Loose in Rails.
2 – Platen pitted, slick, inflated, or improperly fitted.
3 – Platen not parallel to abutment ring.
4 – Ring and Cylinder adjustment improper.
5 – Individual typebar not aligned to abutment Ring and Cylinder.
6 – End shake in Sub-Carriage.
7 – Motion adjustment incorrect.
8 – Typebars sticking in guide.
9 – Typebars sticking in Segment Slot.
10 – Loose type on bar.
11 – Worn or battered type face.
12 – Platen not even.
13 – Platen ground down to too small diameter.
14 – Platen Shell Loose on Core.
15 – Poor Alignment.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

Keyboard not level

1 – Loose Sub-frame or Keylever Bracket.
2 – Deformed or worn Typebar Rest.
3 – Keylevers sticking in Keylever Comb.

CAUSE OF TROUBLE

Line spacing irregular

1 – Glossy Platen or Feed Rollers.
2 – Ratchet Release engaged.
3 – Platen not even.
4 – Platen shell loose on Core.
5 – Variable slipping.
6 – Line Space Lever Stops incorrectly adjusted.
7 – Line Space Pawl Spring broken or disconnected.
8 – Line Space Lever Spring broken.
9 – Line Space, Detent Roller worn, binding or not riding the Ratchet.
10 – Line Space Lever Pivot Screw or nut loose.
11 – Feed Rollers binding.

MECHANIC'S NOTES:

WOODSTOCK TYPEWRITER

CAUSE OF TROUBLE

Margin Irregular

1 – Margin Stop not holding on Margin Rack.
2 – Margin Stop Banking or Limit Screw improperly positioned.
3 – Margin Stop Bar improperly positioned or screws loose.
4 – Glossy Platen and Feed Rollers permitting paper to slide to left.
5 – End shake in Platen.
6 – Starwheel back lash pawl too high or too low.

MECHANIC'S NOTES:

WOODSTOCK TYPEWRITER

CAUSE OF TROUBLE

Paper Feed

1 – Platen and Feed Rollers glossy.
2 – Platen Shell loose on Core.
3 – Feed Rollers binding on Shaft.
4 – Feed Roller bearings dry.
5 – Finger or Bail Rollers Binding on Shaft.
6 – Variable slipping.
7 – Platen binding or improperly fitted.
8 – Ratchet Detent not contacting Ratchet properly.
9 – Worn Ratchet or Detent Roller.
10 – Insufficient Ratchet Detent tension.
11 – Improper sized feed rollers.
12 – Flat, cracked or inflated Feed Rollers.
13 – Paper Deflector improperly positioned.
14 – Lack of uniformity of feed Roller tension.
15 – Too much or too little feed Roller tension.
16 – End shake in Feed Rollers excessive.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

RIBBON (won't feed or reverse)

1 – Proper spool or ribbon not used.
2 – Ribbon not directioned properly off spool.
3 – Ribbon spool improperly installed on Shaft.
4 – Typebar Cover binding ribbon spool.
5 – Reverse Plunger, Trigger or Lever binding.
6 – Ribbon spool shaft binding.
7 – Eyelet in end of ribbon preventing reverse.
8 – Spool Catch Spring Screw loose or Spring lacking tension to hold Reverse Trigger upright when Ribbon Spool removed.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

RIBBON (Cutting off tops of letters)

1 – Proper spool or ribbon not used.
2 – Ribbon not directioned properly off spool.
3 – Ribbon Spool improperly installed on shaft.
4 – Typebar Cover binding ribbon spool .
5 – Ribbon twisted.
6 – Ribbon Reverse failure.
7 – Ribbon spool shaft sluggish or binding.
8 – Loss of Escapement Trip account lower U-Bar loose on Pivots.

CAUSE OF TROUBLE

RIBBON (Bleeding)

1 – Ribbon Guide binding.
2 – Guide connection to vibrator arm worn or elongated.
3 – Requires Ribbon Bichrome Adjustment.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

SKIPPING (General)

1 – Flimsy desk causing vibration.
2 – Rebound of Keylever caused by faulty touch.
3 – Rack not properly meshed in pinion or machine equipped with wrong pitch Rack or Pinion.
4 – Worn or broken tooth in Rack.
5 – Rack binding on Pivots or some obstruction preventing Rack from meshing properly.
6 – Broken tooth in Pinion.
7 – Pinion Pawl not seating in Pinion or Pawl Spring deformed, broken or misplaced.
8 – Escapement Rocker Spring disconnected or improper tension.
9 – Escapement Rocker loose on Pivots, or too much end shake.
10 – Escapement Rocker binding on attachments.
11 – Universal Bar binding on Pivots or improperly adjusted.
12 – Loose Dog broken, loose on Pivot or Pivot bent.
13 – Loose Dog not positioned flush on Starwheel tooth.
14 – Loose Dog edge not positioned flush with edge of Starwheel tooth.
15 – Trip not adjusted properly.
16 – Starwheel tooth worn or face rough.
17 – Too much clearance between Dogs.

MECHANIC'S NOTES:

CAUSE OF TROUBLE — SKIPPING

(At beginning or end of line)

1 – Rack not level.
2 – Rack Adjusting stop screws not uniform.

CAUSE OF TROUBLE — SKIPPING

(After Tabulating)

1 – Insufficient Tabulator stop blade on tab stop.
2 – Tabulator stop not fully set.
3 – Tabulator Rack Lever incorrectly adjusted.
4 – Rack not meshed properly in Pinion.
5 – Tabulator Bar incorrectly positioned.

MECHANIC'S NOTES:

CAUSE OF TROUBLE — SKIPPING
(Specific skipping in same space on each line)

1 — Worn or Broken tooth in rack.

CAUSE OF TROUBLE — SKIPPING
(Equal number or spaces between skips)

1 — Broken Pinion Tooth.

CAUSE OF TROUBLE — SKIPPING
(After Shifting)

1 — Rack not meshed properly in Pinion or insufficient Rack Spring Tension.
2 — Space Bar Trip incorrectly adjusted.
3 — End shake in Escapement Rocker.
4 — Sub-frame loose.

CAUSE OF TROUBLE — SKIPPING
(After spacing or on space bar depression)

1 — Space Bar Trip incorrectly adjusted.
2 — Rack not meshed deep enough in Pinion.

MECHANIC'S NOTES:

CAUSE OF TROUBLE
Capital Letters out of Alignment or Splitting

1 — Operator using Shift Key incorrectly.
2 — Rubber Key Cap (on Shift Key) binding on frame or Shift Key Lock.
3 — Sub-carriage not making full throw.
4 — Sub-carriage not seating properly.
5 — Shift Rail bent or loose on Pivots.
6 — Excessive tension on Shift Balance Springs.
7 — Motion adjustment required.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

Back Space overthrows or underthrows

1 – Back Space Pawl Tooth worn or broken.
2 – Improper mesh of Back Space Pawl in Rack.
3 – Pinion Pawl binding.
4 – Back Lash Pawl or Escapement Wheel Stop not positioned properly.
5 – Back Space Spring disconnected or improper tension.
6 – Back Space Pawl Pivot or Screw worn, deformed or broken, causing bind.
7 – Sub-frame loose.
8 – Back Space Keylever, Sub-Lever or Link deformed.
9 – Back Space Keylever Spring broken or disengaged.
10 – Back Space Bracket Screws loose.
11 – Machine equipped with wrong pitch Back Space Pawl.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

Carriage won't hold

1 – Rack Lever binding, Rack not engaged in Pinion.
2 – Broken Loose Dog on Escapement Rocker.
3 – Escapement Rocker disconnected or removed.
4 – Pinion Pawl binding, not seating in Pinion, or Pawl Spring broken or disconnected.
5 – Tabulator Keylever sticking in Comb.

MECHANIC'S NOTES:

WOODSTOCK TYPEWRITER

CAUSE OF TROUBLE

Carriage — won't escape, binding, or sticking

1 – Drawband broken or disconnected.
2 – Mainspring broken or tension relaxed.
3 – Margin Stops improperly located.
4 – Line Lock not releasing.
5 – Escapement Rocker Pivots binding Rocker.
6 – Back Space Pawl engaged in Rack.
7 – Starwheel binding.
8 – Paper finger binding on Type Guide.
9 – Typebar sticking in guide.
10 – Ribbon Spool Cup Covers binding Carriage.
11 – Line Space Lever binds on Typebar Cover.
12 – Tabulator Set Lever engaged between Tabulator Stops or binding on Stop Rack.
13 – Margin Stops fouled.
14 – Anti-creep Rack binding or displaced.
15 – Carriage Rollers binding or displaced.
16 – Drawband off drum or wound around Drum Shaft.
17 – Rails too tight or improperly adjusted.
18 – Pinion Wheel binding.
19 – Sub-carriage wheel not riding Shift Rail.

MECHANIC'S NOTES:

UNDERWOOD TYPEWRITER

CAUSE OF TROUBLE

Carriage — crowding or piling

1 – Flimsy desk causing vibration.
2 – Uneven desk causing carriage travel uphill.
3 – Erratic touch of operator.
4 – Typebars sticking in guide or sluggish in Segment Slots.
5 – Insufficient Mainspring tension.
6 – Sub-carriage improperly fitted (end shake).
7 – Rack tco deeply meshed in pinion.
8 – Platen end shake.
9 – Pinion binding on shaft.
10 – Starwheel binding on shaft.
11 – Tabulator Rack binding on Tabulator Set or Clear Lever.
12 – Mainspring Drum binding on Bearings.
13 – Universal Bar Pivots loose improperly seated or binding.
14 – Space Bar Keylever Spring broken.
15 – End shake in Rack.
16 – Loose Dog not positioned properly (flush face to face).
17 – Escapement Rocker Spring disconnected or insufficient tension.
18 – Dirty Carriage Rails.
19 – Insufficient clearance between Dogs.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

Impressions Imperfect

1 – Main Carriage Loose in Rails.
2 – Platen pitted, slick, inflated, or improperly fitted.
3 – Platen not parallel to abutment ring.
4 – Ring and Cylinder adjustment improper.
5 – Individual typebar not aligned to abutment Ring and Cylinder.
6 – End shake in Sub-Carriage.
7 – Motion adjustment incorrect.
8 – Typebars sticking in guide.
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10 – Loose type on Bar.
11 – Worn or battered type face.
12 – Platen not even.
13 – Platen ground down to too small diameter.
14 – Platen Shell Loose on Core.
15 – Poor Alignment.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

Keyboard not Level

1 – Deformed or worn Typebar Rest.
2 – Keylevers sticking in Keylever Comb.

CAUSE OF TROUBLE

Line spacing irregular

1 – Glossy Platen or Feed Rollers.
2 – Ratchet Release engaged.
3 – Platen not even.
4 – Platen Shell loose on Core.
5 – Variable slipping.
6 – Line Space Lever Stops incorrectly adjusted.
7 – Line Space Lever Spring broken.
8 – Line Space Detent Roller worn, binding or not riding the Ratchet.
9 – Line Space Lever Pivot Screw or nut loose.
10 – Feed Rollers irregular sized or binding.

MECHANIC'S NOTES:

UNDERWOOD TYPEWRITER

CAUSE OF TROUBLE

Margin Irregular

1 – Margin Stop not holding on Margin Rack.
2 – Margin stop bar improperly positioned or screws loose.
3 – Glossy Platen and Feed Rollers permitting paper to slide to left.
4 – End shake in Platen.

MECHANIC'S NOTES:

UNDERWOOD TYPEWRITER

CAUSE OF TROUBLE

Paper Feed

1 – Platen and Feed Rollers glossy.
2 – Platen Shell loose on Core.
3 – Feed Rollers binding on Shaft.
4 – Feed Roller bearings dry.
5 – Finger or Bail Rollers Binding on Shaft.
6 – Variable slipping.
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15 – Too much or too little Feed Roller tension.
16 – End shake in Feed Rollers excessive.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

RIBBON (won't feed or reverse)

1 – Proper spool or ribbon not used.
2 – Ribbon not directioned properly off spool.
3 – Ribbon spool improperly installed on shaft.
4 – Reverse Plunger, Trigger or Lever Binding or in folds of ribbon.
5 – Ribbon Spool Shaft binding.
6 – Improper mesh of gears or pinions.
7 – No eyelet in end of ribbon to operate reverse mechanism.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

RIBBON (Cutting off tops of letters)

1 – Proper spool or ribbon not used.
2 – Ribbon not directioned properly off spool.
3 – Ribbon spool improperly installed on shaft.
4 – Ribbon twisted.
5 – Ribbon Reverse failure.
6 – Ribbon spool shaft sluggish or binding.
7 – Ribbon position adjustment improper.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

RIBBON (Bleeding)

1 – Ribbon Guide binding.
2 – Guide connection to vibrator arm worn, or elongated.
3 – Requires Ribbon Bichrome Adjustment.

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SKIPPING (General)

1 – Flimsy desk causing vibration.
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7 – Pinion Pawl not seating in Pinion or Pawl Spring deformed, broken or misplaced.
8 – Escapement Rocker Spring disconnected or improper tension.
9 – Escapement Rocker loose on Pivots, or too much end shake.
10 – Escapement Rocker binding on attachments.
11 – Universal Bar binding on Pivots or improperly adjusted.
12 – Loose Dog broken, loose on Pivot or Pivot bent.
13 – Loose Dog not positioned flush on Starwheel tooth.
14 – Loose Dog edge not positioned flush with edge of Starwheel tooth.
15 – Trip not adjusted properly.
16 – Starwheel tooth worn or face rough.
17 – Too much clearance between Dogs.

MECHANIC'S NOTES:

CAUSE OF TROUBLE – SKIPPING

(At beginning or end of line)

1 – Rack not level.
2 – Rack Adjusting stop screws not uniformly adjusted.

CAUSE OF TROUBLE – SKIPPING

(After Tabulating)

1 – Insufficient Tabulator stop blade on tabulator stop.
2 – Tabulator stop not fully set.
3 – Tabulator rack lever incorrectly adjusted.
4 – Rack not meshed properly in Pinion.
5 – Tabulator Bar incorrectly positioned.

MECHANIC'S NOTES:

CAUSE OF TROUBLE — **SKIPPING**

(Specific skipping in same space on each line)

1 — Worn or Broken Tooth in Rack.

CAUSE OF TROUBLE — **SKIPPING**

(Equal number or spaces between skips)

1 — Broken Pinion Tooth.

CAUSE OF TROUBLE — **SKIPPING**

(After Shifting)

1 — Rack not meshed properly in Pinion or insufficient Rack Spring Tension.
2 — Space Bar Trip incorrectly adjusted.
3 — End shake in Escapement Rocker.

CAUSE OF TROUBLE — **SKIPPING**

(After spacing or on space bar depression)

1 — Space Bar Trip incorrectly adjusted.
2 — Rack not meshehd deep enough in Pinion.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

Capital Letters out of Alignment or Splitting

1 — Operator using Shift Key incorrectly.
2 — Rubber Key Cap (on Shift Key) binding on frame or shift lock key.
3 — Sub-Carriage binding, not making full throw.
4 — Sub-Carriage not seating properly.
5 — Shift Rail bent or loose on Pivots.
6 — Excessive tension on Shift Balance Springs.
7 — Motion adjustment required.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

Back Space overthrows or underthrows

1 – Back Space Pawl Tooth worn or broken.
2 – Improper mesh of Back Space Pawl in Rack.
3 – Pinion Pawl binding.
4 – Back Space Pawl Spring disconnected or improper tension.
5 – Back Space Pawl Pivot or Screw worn, deformed or broken, causing bind.
6 – Back Space Keylever, Sub-Lever or Link deformed.
7 – Wheel Lock not positioned properly under Starwheel tooth.
8 – Back Space Keylever limiting on Keylever Stop.
9 – Back Space Keylever Spring broken or disengaged.
10 – Machine equipped with wrong pitch Back Space Pawl.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

Carriage won't hold

1 – Rack Lever binding, Rack not engaged in Pinion.
2 – Broken Loose Dog on Escapement Rocker.
3 – Escapement Rocker disconnected or removed.
4 – Pinion Pawl binding, not seating in Pinion, or Pawl Spring broken or disconnected.
5 – Tabular Keylever sticking in Comb.

MECHANIC'S NOTES:

UNDERWOOD TYPEWRITER

CAUSE OF TROUBLE

Carriage — won't escape, Binding, or Sticking

1 – Drawband broken or disconnected.
2 – Mainspring broken or tension relaxed.
3 – Margin stops improperly located.
4 – Line Lock not releasing.
5 – Escapement Rocker Pivots binding Rocker.
6 – Back Space Pawl engaged in Rack.
7 – Starwhheel Binding.
8 – Paper finger binding on Type Guide.
9 – Typebar sticking in guide.
10 – Tabulator Set Lever engaged between Tabulator Stops or binding on Stop Rack.
11 – Margin Stops fouled.
12 – Carriage Rollers binding or displaced.
13 – Drawband off drum or wound around Drum Shaft.
14 – Rails too tight, not true or improperly adjusted.
15 – Pinion Wheel binding.
16 – Sub-Carriage wheel not riding Shift Rail.
17 – Carriage Controlling Link disconnected.

MECHANIC'S NOTES:

L. C. SMITH TYPEWRITER

CAUSE OF TROUBLE

Carriage crowding or piling

1 – Flimsy desk causing vibration.
2 – Uneven desk causing carriage travel uphill.
3 – Erratic touch of operator.
4 – Typebars sticking in guide or sluggish in Segment Slots.
5 – Insufficient Mainspring tension.
6 – End shake in Segment fitting (Segment Shift Models).
7 – Platen end shake.
8 – Starwheel binding on Shift.
9 – Escapement Rocker binding on pivots.
10 – Tabulator Rack Binding on Tabulator Set or Clear Lever.
11 – Mainspring Drum binding on bearings.
12 – Universal Bar Pivots loose, improperly seated or binding.
13 – Space Bar connections binding Rocker.
14 – Space Bar Keylever Spring broken or relaxed.
15 – Loose Dog not positioned properly (flush face to face) on Starwheel tooth.
16 – Escapement Rocker Spring disconnected or insufficient tension.
17 – Dirty Carriage Rails.
18 – Insufficient clearance between Loose and Stationary Dogs.
19 – Ribbon feed or reverse not working properly.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

Impressions Imperfect

1 – Main Carriage loose in Rails.
2 – Platen pitted, glossy, inflated or unfitted.
3 – End shake in Segment (Segment Shift Models).
4 – Motion adjustment incorrect.
5 – Typebars sticking in guide.
6 – Typebars sticking in Segment Slot.
7 – Loose type on Bar.
8 – Worn or battered type face.
9 – Platen not even.
10 – Platen ground down to too small diameter.
11 – Platen Shell Loose on Core.
12 – Poor alignment.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

Keyboard Not Level

1 – Loose Sub-frame or Keylever Bracket.
2 – Deformed or worn Typebar Rest.
3 – Keylevers sticking in Keylever Comb.

CAUSE OF TROUBLE

Line spacing irregular

1 – Glossy Platen or Feed Rollers.
2 – Ratchet Release engaged.
3 – Platen not even.
4 – Platen Shell loose on Core.
5 – Variable Slipping.
6 – Line Space Lever Stops incorrectly adjusted.
7 – Line Space Lever Spring broken.
8 – Line Space Detent Roller worn, binding or not riding the Ratchet.
9 – Line Space Lever Pivot Screw or nut loose.
10 – Feed Rollers irregular sized or binding.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

Margin Irregular

1 – Margin Stop not holding on Margin Rack.
2 – Margin Stop Bar improperly positioned or screws loose.
3 – Glossy Platen and Feed Rollers permitting paper to slide to left.
4 – End Shake in Platen.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

Paper Feed

1 – Platen and Feed Rollers glossy.
2 – Platen Shell loose on Core.
3 – Feed Rollers binding on Shaft.
4 – Feed Roller bearings dry.
5 – Finger or Bail Rollers Binding on Shaft.
6 – Variable slipping.
7 – Platen binding or improperly fitted.
8 – Ratchet Detent not contacting Ratchet properly.
9 – Worn Ratchet or Detent Roller.
10 – Insufficient Ratchet Detent tension.
11 – Improper sized feed rollers.
12 – Flat, cracked or inflated Feed Rollers.
13 – Paper Deflector improperly positioned.
14 – Lack of uniformity of feed Roller tension.
15 – Too much or too little Feed Roller tension.
16 – End shake in Feed Rollers excessive.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

RIBBON (won't feed or reverse)

1 – Proper spool or ribbon not used.
2 – Ribbon not directioned properly off spool.
3 – Ribbon spool improperly installed on shaft.
4 – Typebar Cover binding Ribbon spool.
5 – Reverse Plunger, Trigger or Lever binding or in folds of ribbon.
6 – Ribbon Spool Shaft binding.
7 – Eyelet in end of ribbon preventing reverse.
8 – Ribbon Driving Pawl Spring, Ribbon Detent Pawl spring or Tabulator Brake Bellcrank spring broken or disconnected.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

RIBBON (Cutting off tops of letters)

1 – Proper spool or ribbon not used.
2 – Ribbon not directioned properly off spool.
3 – Ribbon Spool improperly installed on shaft.
4 – Typebar Cover binding Ribbon Spool.
5 – Ribbon twisted.
6 – Ribbon Reverse failure.
7 – Ribbon Spool Shaft sluggish or binding.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

RIBBON (Bleeding)

1 – Ribbon Guide binding.
2 – Guide connection to vibrator arm worn or elongated.
3 – Requires Ribbon Bichrome Adjustment.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

SKIPPING (General)

1 – Flimsy desk causing vibration.
2 – Rebound of Keylever caused by faulty touch.
3 – Rack not properly meshed in pinion or machine equipped with wrong pitch Rack or Pinion.
4 – Worn or broken tooth in Rack.
5 – Broken tooth in Pinion.
6 – Escapement Rocker Spring disconnected or improper tension.
7 – Escapement Rocker loose on Pivots, or too much end shake.
8 – Escapement Rocker binding on attachments.
9 – Universal Bar binding on Pivots or improperly adjusted.
10 – Loose Dog broken, loose on Pivot or Pivot bent.
11 – Loose Dog not positioned flush on Starwheel tooth.
12 – Trip not adjusted properly.
13 – Starwheel tooth worn or face rough.

MECHANIC'S NOTES:

CAUSE OF TROUBLE – SKIPPING

(Specific skipping in same space on each line)

1 – Worn or Broken tooth in Rack.

CAUSE OF TROUBLE – SKIPPING

(Equal number or spaces between skips)

1 – Broken Pinion Tooth.

CAUSE OF TROUBLE – SKIPPING

(After Shifting)

1 – Space Bar Trip incorrectly adjusted.
2 – End shake in Escapement Rocker.
3 – Main Spring Drum Bracket Screws loose.

CAUSE OF TROUBLE – SKIPPING

(After spacing or on space bar depression)

1 – Space Bar Trip incorrectly adjusted.

CAUSE OF TROUBLE – SKIPPING

(After Tabulating)

1 – Insufficient Tabulator Stop Blade on Tabulator Stop.
2 – Tabulator stop not fully set.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

Capital Letters out of alignment or Splitting

1 – Operator using Shift Key incorrectly.
2 – Rubber Key Cap (on Shift Key) binding on frame or Shift Lock Key.
3 – Segment Shifting Mechanism not making full throw.
4 – Segment loose in Rails.
5 – Excessive tension on Shift Balance Springs.
6 – Motion adjustment required.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

Back Space overthrows or underthrows

1 – Back Space Pawl Tooth worn or broken.
2 – Loose Dog not positioned properly on Starwheel Tooth.
3 – Back Space Pawl Spring disconnected or improper tension.
4 – Back Space Pawl Pivot, or Screw worn, deformed or broken, causing bind.
5 – Main spring Drum Bracket Loose.
6 – Back Space Keylever Spring broken or disengaged.
7 – Machine equipped with wrong pitch Back Space Pawl.

MECHANIC'S NOTES:

L. C. SMITH TYPEWRITER

CAUSE OF TROUBLE

Carriage won't hold

1 – Broken Loose Dog on Escapement Rocker.
2 – Escapement Rocker disconnected or removed.
3 – Carriage Release Bar binding, Loose Dog disengaged.
4 – Tabulator Keylever sticking in Comb.

MECHANIC'S NOTES:

L. C. SMITH TYPEWRITER

CAUSE OF TROUBLE

Carriage — won't escape, Binding, or Sticking

1 – Drawband broken or disconnected.
2 – Mainspring broken or tension relaxed.
3 – Margin Stops improperly located.
4 – Line Lock not releasing.
5 – Escapement Rocker Pivots binding Rocker.
6 – Starwheel binding.
7 – Paper finger binding on Type guide.
8 – Typebar sticking in guide.
9 – Line Space Lever binding on Typebar Cover.
10 – Tabulator Set Lever engaged between Tabulator Stops or binding on Stop Rack.
11 – Margin Stops fouled.
12 – Ribbon Reverse not functioning.
13 – Anti-creep Rack binding or displaced.
14 – Carriage rollers binding or displaced.
15 – Drawband off drum or wound around Drum Shaft.
16 – Rails too tight or improperly adjusted.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

Carriage — crowding or piling

1 – Flimsy desk causing vibration.
2 – Uneven desk causing carriage travel uphill.
3 – Erratic touch of operator.
4 – Typebars sticking in guide or sluggish in Segment Slots.
5 – Insufficient Mainspring tension.
6 – End shake in Segment fitting (Segment Shift Models).
7 – Platen end shake.
8 – Starwheel binding on Shaft.
9 – Escapement Rocker binding on pivots.
10 – Tabulator Rack binding on Tabulator Set or Clear Lever.
11 – Mainspring Drum binding on Bearings.
12 – Loose Dog not positioned properly (flush face to face) on Starwheel tooth.
13 – Escapement Rocker Spring disconnected or insufficient tension.
14 – Dirty Carriage Rails.
15 – Insufficient clearance between Loose and Stationary Dogs.
16 – Ribbon feed or reverse not working properly.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

Impressions Imperfect

1 – Main Carriage loose in Rails.
2 – Platen pitted, glossy, inflated, or unfitted.
3 – Platen not parallel to abutment ring.
4 – Ring and Cylinder adjustment improper.
5 – Individual typebar not aligned to Abutment Ring and Cylinder.
6 – End shake in Segment (Segment Shift Models).
7 – Motion adjustment incorrect.
8 – Typebar sticking in guide.
9 – Typebar sticking in Segment Slot.
10 – Loose type on Bar.
11 – Worn or battered type face.
12 – Platen not even.
13 – Platen ground down to too small diameter.
14 – Platen Shell Loose on Core.
15 – Poor Alignment.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

Keyboard not Level

1 – Deformed or worn Typebar Rest.
2 – Keylevers sticking in Keylever Comb.

CAUSE OF TROUBLE

Line spacing irregular

1 – Glossy Platen or Feed Rollers.
2 – Ratchet Release engaged.
3 – Platen not even.
4 – Platen Shell Loose on Core.
5 – Variable slipping.
6 – Line Space Lever Stops incorrectly adjusted.
7 – Line Space Pawl Spring broken or disconnected.
8 – Line Space Lever Spring broken.
9 – Line Space Detent Roller worn, binding or not riding the Ratchet.
10 – Line Space Lever Pivot Screw or nut loose.
11 – Feed Rollers irregular sized or binding.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

Margin Irregular

1 – Margin Stop not holding on Margin Rack.
2 – Margin Stop Bar improperly positioned or screws loose.
3 – Glossy Platen and Feed Rollers permitting paper to slide to left.
4 – End shake in Platen.

MECHANIC'S NOTES:

REMINGTON TYPEWRITER

CAUSE OF TROUBLE

Paper Feed

1 – Platen and Feed Rollers glossy.
2 – Platen Shell loose on Core.
3 – Feed Rollers binding on Shaft.
4 – Feed Roller bearings dry.
5 – Finger or Bail Rollers Binding on Shaft.
6 – Variable slipping.
7 – Platen binding or improperly fitted.
8 – Ratchet Detent not contacting Ratchet properly.
9 – Worn Ratchet or Detent Roller.
10 – Insufficient Ratchet Detent tension.
11 – Improper sized feed rollers.
12 – Flat, cracked or inflated Feed Rollers.
13 – Paper Deflector improperly positioned.
14 – Lack of uniformity of Feed Roller tension.
15 – Too much or too little Feed Roller Tension.
16 – End shake in Feed Rollers excessive.

MECHANIC'S NOTES:

REMINGTON TYPEWRITER

CAUSE OF TROUBLE

Ribbon (won't feed or reverse)

1 – Proper spool or ribbon not used.
2 – Ribbon not directioned properly off spool.
3 – Ribbon spool improperly installed on shaft.
4 – Reverse Plunger, Trigger or Lever binding or in folds of ribbon.
5 – Ribbon Spool Shaft binding.
6 – Improper mesh of gears or pinions.
7 – Eyelet in end of ribbon preventing reverse.
8 – Drawband conflicting with operation of Spring Drum or Worn Shaft Pinion.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

Ribbon (Cutting off tops of letters)

1 – Proper spool or ribbon not used.
2 – Ribbon not directioned properly off spool.
3 – Ribbon Spool improperly installed on Shaft.
4 – Ribbon twisted.
5 – Ribbon reverse failure.
6 – Ribbon Spool Shaft sluggish or binding.

CAUSE OF TROUBLE

Ribbon (Bleeding)

1 – Ribbon Guide binding.
2 – Guide connection to Vibrator Arm worn or elongated.
3 – Requires Ribbon Bichrome Adjustment.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

SKIPPING (General)

1 – Flimsy desk causing vibration.
2 – Rebound of Keylever caused by faulty touch.
3 – Rack not properly meshed in pinion or machine equipped with wrong pitch Rack or Pinion.
4 – Worn or broken tooth in Rack.
5 – Broken tooth in Pinion.
6 – Escapement Rocker Spring disconnected or improper tension.
7 – Escapement Rocker loose on Pivots, or too much end shake.
8 – Escapement Rocker binding on attachments.
9 – Universal Bar binding on Pivots or improperly adjusted.
10 – Loose Dog broken, loose on Pivot or Pivot bent.
11 – Loose Dog not positioned flush to Starwheel tooth.
12 – Trip not adjusted properly.
13 – Starwheel tooth worn or face rough.
14 – Too much clearance between Loose and Stationary Dogs.

MECHANIC'S NOTES:

CAUSE OF TROUBLE — **SKIPPING**

(Specific skipping in same space on each line)

1 – Worn or Broken tooth in rack.

CAUSE OF TROUBLE — **SKIPPING**

(Equal number or spaces between skips)

1 – Broken Pinion Tooth.

CAUSE OF TROUBLE — **SKIPPING**

(After Shifting)

1 – Space Bar Trip incorrectly adjusted.
2 – End shake in Escapement Rocker.

CAUSE OF TROUBLE — **SKIPPING**

(After spacing or on space bar depression)

1 – Space Bar Trip incorrectly adjusted.

CAUSE OF TROUBLE — **SKIPPING**

(After Tabulating).

1 – Insufficient Tabulator Stop Blade on Tabulator Stop.
2 – Tabulator Stop not fully set.
3 – Tabulator Bar incorrectly positioned.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

Capial Letters out of Alignment or Splitting

1 – Operator using Shift Key incorrectly.
2 – Rubber Key Cap (on Shift Key) binding on frame or shift lock key.
3 – Segment Shifting mechanism not making full throw.
4 – Excessive tension on Shift Balance Spring.
5 – Motion adjustment required.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

Back Space overthrows or underthrows

1 – Back Space Pawl Tooth chipped, worn, or broken.
2 – Loose Dog not positioned properly on Starwheel Tooth.
3 – Back Space Pawl Spring disconnected, broken, or improper tension on spring.
4 – Back Space Pawl Pivot or Screw worn, deformed or broken, causing bind.
5 – Back Space Keylever, Sub-lever or link deformed.
6 – Back Space Keylever Spring broken or disengaged.
7 – Machine equipped with wrong pitch Back space pawl.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

Carriage won't hold

1 – Broken loose dog on Escapement Rocker.
2 – Escapement rocker disconnected or removed.
3 – Carriage Release bar binding, Loose Dog disengaged.
4 – Tabulator keylever sticking in comb.

MECHANIC'S NOTES:

REMINGTON TYPEWRITER

CAUSE OF TROUBLE

Carriage — won't escape, Binding, or Sticking

1 — Drawband broken or disconnected.
2 — Mainspring broken or tension relaxed.
3 — Margin stops improperly located.
4 — Line Lock not releasing.
5 — Escapement Rocker Pivots binding Rocker.
6 — Starwheel binding.
7 — Paper finger binding on Type Guide.
8 — Typebar sticking in guide.
9 — Line Space Lever binding on Typebar Cover.
10 — Tabulator Set Lever engaged between Tabulator Stops or binding on Stop Rack.
11 — Margin Stops fouled.
12 — Ribbon Reverse not functioning.
13 — Anti-creep Rack binding or displaced.
14 — Carriage Rollers binding or displaced.
15 — Draband off drum or wound around Drum Shaft.
16 — Rails too tight, or improperly adjusted.
17 — Lower Carriage Rail Cover binding Carriage.

MECHANIC'S NOTES:

ROYAL TYPEWRITER

CAUSE OF TROUBLE

Carriage — crowding or piling

1 — Flimsy desk causing vibration.
2 — Uneven desk causing carriage travel uphill.
3 — Erratic touch of operator.
4 — Typebars sticking in guide or sluggish in Segment Slots.
5 — Insufficient Mainspring tension.
6 — End shake in Segment fitting (Segment shift Models).
7 — Rack too deeply meshed in Pinion.
8 — Platen end shake.
9 — Pinion binding on shaft.
10 — Starwheel binding on Shaft.
11 — Escapement Rocker binding on pivots.
12 — Tabulator Rack binding on Tabulator Set or Clear Lever.
13 — Mainspring Drum binding on bearings.
14 — Universal Bar Pivots loose, improperly seated or binding.
15 — Space Bar connections binding Rocker.
16 — Starwheel binding on Backlash Pawl.
17 — Space bar Keylever Spring broken or relaxed.
18 — End shake in Rack.
19 — Loose Dog not positioned properly (flush face to face) on starwheel tooth.
20 — Escapement Rocker Spring disconnected or insufficient tension.
21 — Dirty Carriage Rails.
22 — Insufficient clearance between Loose and Stationary Dogs.

MECHANIC'S NOTES:

ROYAL TYPEWRITER

CAUSE OF TROUBLE

Impressions Imperfect

1 – Main carriage, loose in Rails.
2 – Platen pitted, glossy inflated, or unfitted.
3 – Platen not parallel to abutment ring.
4 – Ring and Cylinder adjustment improper.
5 – Individual typebar not aligned to Abutment Ring and Cylinder.
6 – End Shake in Segment (Segment Shift Models).
7 – Motion adjustment incorrect.
8 – Typebar sticking in guide.
9 – Typebar sticking in Segment Slot.
10 – Loose type on Bar.
11 – Worn or battered type face.
12 – Platen not even.
13 – Platen ground down to to small diameter.
14 – Platen Shell Loose on Core.
15 – Poor Alignment.

MECHANIC'S NOTES:

ROYAL TYPEWRITER

CAUSE OF TROUBLE

Keyboard not Level

1 – Deformed or worn Typebar Rest.
2 – Keylevers sticking in Keylever Comb.

CAUSE OF TROUBLE

Line spacing irregular

1 – Glossy Platen or Feed Rollers.
2 – Ratchet Release engaged.
3 – Platen not even.
4 – Platen Shell Loose on Core.
5 – Variable slipping.
6 – Line Space Lever Stops incorrectly adjusted.
7 – Line Space Pawl Spring broken or disconnected.
8 – Line space Detent Roller worn, binding or not riding the Ratchet.
9 – Line space Lever Spring broken.
10 – Line Space Lever Pivot Screw or nut loose.
11 – Feed Rollers irregular sized or binding.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

Margin Irregular

1 – Margin Stop not holding on Margin Rack.
2 – Margin Stop Banking or Limit Screw improperly positioned.
3 – Margin Stop Bar improperly positioned or screws loose.
4 – Glossy Platen and Feed Rollers permitting paper to slide to left.
5 – End shake in Platen.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

Paper Feed

1 – Platen and Feed Rollers glossy.
2 – Platen Shell loose on Core.
3 – Feed Rollers binding on Shaft.
4 – Feed Roller bearings dry.
5 – Finger or Bail Rollers binding on Shaft.
6 – Variable slipping.
7 – Platen binding or improperly fitted.
8 – Ratchet Detent not contacting Ratchet properly.
9 – Worn Ratchet or Detent Roller.
10 – Insufficient Ratchet Detent tension.
11 – Improper sized feed rollers.
12 – Flat, cracked or inflated Feed Rollers.
13 – Paper Deflector improperly positioned or form.
14 – Lack of uniformity of Feed Roller tension.
15 – Too much or too little Feed Roller tension.
16 – End shake in Feed Rollers excessive.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

Ribbon (won't feed or reverse)

1 – Proper spool or ribbon not used.
2 – Ribbon not directioned properly off spool.
3 – Ribbon spool improperly installed on shaft.
4 – Typebar Cover binding Ribbon Spool.
5 – Reverse Plunger, Trigger or Lever binding or in folds of ribbon.
6 – Ribbon Spool Shaft binding.
7 – Improper mesh of gears or pinions.
8 – Eyelet in end of ribbon preventing reverse.
9 – Drawband conflicting with operation of Spring Drum or Worn Shaft Pinion.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

Ribbon (Cutting off tops of letters)

1 – Proper spool or ribbon not used.
2 – Ribbon not directioned properly off spool.
3 – Ribbon spool improperly installed on shaft.
4 – Typebar Cover binding Ribbon Spool.
5 – Ribbon twisted.
6 – Ribbon Reverse failure.
7 – Ribbon spool shaft sluggish or binding.
8 – Loss of Escapement trip.
9 – Ribbon position adjustment improper.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

Ribbon (Bleeding)

1 – Ribbon Guide binding.
2 – Guide connection to vibrator arm worn or elongated.
3 – Requires Ribbon Bichrome Adjustment.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

SKIPPING (General)

1 – Flimsy desk causing vibration.
2 – Rebound of Keylever caused by fautly touch.
3 – Rack not properly meshed in pinion or equipped with wrong pitch Rack or pinion.
4 – Worn or broken tooth in Rack.
5 – Rack binding on Pivots or some obstruction preventing Rack from meshing properly in Pinion.
6 – Broken tooth in Pinion.
7 – Pinion Pawl not seating in Pinion or Pawl Spring deformed, broken or misplaced.
8 – Escapement Rocker Spring disconnected or improper tension.
9 – Escapement Rocker loose on Pivots, or too much end shake.
10 – Escapement Rocker binding on attachments.
11 – Universal Bar binding on Pivots or improperly adjusted.
12 – Loose Dog broken, loose on Pivot or bent.
13 – Loose Dog not flush on Starwheel tooth.
14 – Loose Dog edge not positioned flush with edge of Starwheel tooth.
15 – Trip not adjusted properly.
16 – Starwheel tooth worn or face rough.
17 – Too much clearance between Dogs.

MECHANIC'S NOTES:

CAUSE OF TROUBLE – SKIPPING

(At beginning or end of line)

1 – Rack not level.
2 – Rack Adjusting Stop Screws not uniformly adjusted.

CAUSE OF TROUBLE – SKIPPING

(After Tabulating)

1 – Insufficient Tabulator stop Blade on Tabulator Stop.
2 – Tabulator Stop not fully set.
3 – Tabulator Rack lever incorrectly adjusted.
4 – Rack not meshed properly in Pinion.
5 – Tabulator Bar incorrectly positioned.

MECHANIC'S NOTES:

CAUSE OF TROUBLE — **SKIPPING**

(Specific skipping in same space on each line)

1 — Worn or broken tooth in Rack.

CAUSE OF TROUBLE — **SKIPPING**

(Equal number or spaces between skips)

1 — Broken Pinion Tooth.

CAUSE OF TROUBLE — **SKIPPING**

(After Shifting)

1 — Rack not meshed properly in Pinion or insufficient Rack Spring Tension.
2 — Space Bar Trip incorrectly adjusted.
3 — End shake in Escapement Rocker.

CAUSE OF TROUBLE — **SKIPPING**

(After spacing or on space bar depression)

1 — Space Bar Trip incorrectly adjusted.
2 — Rack not meshed deep enough in Pinion.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

Capital Letters out of Alignment or Splitting

1 — Operator using Shift Key incorrectly.
2 — Rubber Key Cap (on Shift Key) binding on frame or Shift.
3 — Segment Shifting mechanism not making full throw.
4 — Excessive tension on Shift Balance Springs.
5 — Motion adjustment required.
6 — Ribbon feed or reverse not working properly.

CAUSE OF TROUBLE

Carriage won't hold

1 — Rack Lever binding, Rack not engaged in pinion.
2 — Broken Loose Dog on Escapement Rocker.
3 — Escapement Rocker disconnected or removed.
4 — Pinion Pawl binding, not seating in Pinion, or Pawl Spring broken or disconnected.
5 — Tabulator Keylever sticking in Comb.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

Back Space overthrows or underthrows

1 – Back Space Pawl Tooth worn or broken, or chipped.
2 – Improper mesh of Back Space Pawl in Rack.
3 – Pinion Pawl binding.
4 – Back Lash Pawl or Escapement Wheel Stop not positioned, properly.
5 – Back Space Pawl Spring disconnected, broken, or improper tension on spring.
6 – Back Space Pawl Pivot or Screw worn, deformed or broken.
7 – Back Space Keylever Sub-Lever or link deformed.
8 – Back Space Keylever Spring Broken or disengaged.
9 – Machine equipped with wrong pitch Back Space Pawl.

MECHANIC'S NOTES:

CAUSE OF TROUBLE

Carriage — won't escape, Binding, or Sticking

1 – Drawband broken or disconnected.
2 – Mainspring broken or tension relaxed.
3 – Margin Stops improperly located.
4 – Line Lock Not releasing.
5 – Escapement Rocker Pivots binding Rocker.
6 – Starwheel binding on Escapement Wheel stop.
7 – Back Space Pawl engaged in Rack.
8 – Starwheel binding.
9 – Typebar sticking in guide.
10 – Ribbon Spool Cup Covers binding Carriage.
11 – Line space Lever binding on Typebar Cover.
12 – Tabulator Set Lever engaged between Tabulator Stops or binding on Stop Rack.
13 – Margin Stops fouled.
14 – Ribbon Reverse not functioning.
15 – Carriage Rollers binding or displaced.
16 – Drawband off drum or wound around Drum Shaft.
17 – Rails too tight or improperly adjusted.
18 – Pinion Wheel binding.
19 – Carriage Clamp binding on Carriage Rail.

MECHANIC'S NOTES:

Approximate Ages of Standard Typewriters

	Rem.	Rem. Nsls.	L.C.Smith	Royal
1910	75M		2/90M	
1911	132M		5/125M	5/58M
1912	216M		128M	107M
1913	300M		160M	141M
1914	383M		200M	10/175M
1915	R"5"	No. 3/10M	5/220M	205M
1916	R"6"		8/255M	234M
1917	R"7"	No. 4/12M	280M	279M
1918	R"8"	17M	315M	336M
1919	R"9"	24M	335M	394M
1920	L"0"	35M	355M	478M
1921	L"1"	51M	370M	567M
1922	L"2"	60M	416M	614M
1923	L"3"	No. 5/66M	443M	682M
1924	L"4"	77M	485M	766M
1925	L"5"	No. 6 Q"5"	521M	848M
1926	L"6"	Q"6"	560M	940M
1927	B"7"	Q"7"	701M	1036M
1928	B"8"	Q"8"	800M	1134M
1929	Z120M	X106M	865M	1236M
1930	Z212M	X157M	939M	1348M
1931	Z283M	X188M	990M	1435M
1932	Z405M	X205M	1032M	1525M
1933	Z417M	X216M	1050M	1554M
1934	Z438M	X234M	1080M	1617M
1935	Z479M	No. 10-X332M	1120M	1723M
1936	Z521M	X370M	1180M	1847M
1937	Z566M	X398M	1270M	2005M
1938	Z615M	X459M	1390M	2178M
1939	J100M	X468M	1450M	2320M
1940	J154M	X500M	1510M	2494M
1941	J248M	X523M	1610M	2681M
1942	J390M	X572M	1725M	2901M
1943	J533M	X602M	1788M	3026M
1944	J542M	X603M	1792M	3026M
1945	J605M	X608M	1853M	3037M
1946	J780M		1885M	3096M
1947	J1058M	X629M	1950M	3273M
1948	J1332M	X685M	2100M	3550M
1949	J1515M	X702M	2200M	3850M
1950	J1642M	X717M	2270M	4100M
1951	J1964M	X740M	2358M	4360M
1952	J2208M	X769M	3103M	4688M
1953	J2353M	X780M	3200M	4990M

Approximate Ages of Standard Typewriters

	Und. 4-5-6	Und. 11-12-14-16	Und. 18-20-26	Und. Nsls.	Wood-stock
1910	290M	40M	7M		
1911	360M	50M	10M		
1912	450M	68M	13M		
1913	551M	88M	18M		
1914	655M	110M	23M		
1915	740M	129M	28M		
1916	830M	155M	34M		
1917	940M	186M	50M		
1918	1050M	220M	60M		
1919	1160M	250M	62M		
1920	1280M	284M	68M		
1921	1430M	338M	78M		70M
1922	1525M	390M	85M		90M
1923	1650M	415M	89M		105M
1924	1780M	465M	97M		119M
1925	1910M	510M	105M		131M
1926	2070M	570M	120M		145M
1927	2210M	610M	134M		160M
1928	2330M	715M	145M		177M
1929	2450M	804M	159M		204M
1930	3635M	3635M	3635M	3600M	240M
1931	3825M	3825M	3825M	3817M	276M
1932	4085M			3882M	310M
1933	4130M			3885M	325M
1934	4200M			3895M	360M
1935	4300M			3924M	393M
1936	4440M			3944M	435M
1937	4610M			3966M	471M
1938	4800M			4800M	502M
1939	4965M			4965M	523M
1940	5155M			N5155M	547M
1941	5340M			N5340M	573M
1942	5540M			N5563M	602M
1943	5715M			N5690M	623M
1944	5715M				643M
1945	5760M				665M
1946	5849M				730M
1947	5912M			N5908M	783M
1948	6310M			N5926M	856M
1949	6530M		**R C ALLEN**	N5937M	892M
1950	6638M		1100M		1000M
1951	6833M		1116M		
1952	7090M		1142M		
1953	7270M		600-1166M		
			700-1750M		
1954			600-1176M		
			700-1768M		

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