28 TELETYPETRIVER BASE
(KEYBOARD SEND-RECEIVE AND RECEIVE ONLY)

LUBRICATION

<table>
<thead>
<tr>
<th>CONTENTS</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. GENERAL</td>
<td>1</td>
</tr>
<tr>
<td>2. LATER DESIGN KSR BASE</td>
<td>3</td>
</tr>
<tr>
<td>(KEYBOARD)</td>
<td></td>
</tr>
<tr>
<td>Answerback: armature</td>
<td>19, 20</td>
</tr>
<tr>
<td>Answerback: codebars and sensing levers</td>
<td>19, 22</td>
</tr>
<tr>
<td>Answerback: driving mechanism</td>
<td>19, 23</td>
</tr>
<tr>
<td>Answerback: sensing levers</td>
<td>19, 21</td>
</tr>
<tr>
<td>Answerback: stepping pawl</td>
<td>19, 23</td>
</tr>
<tr>
<td>Answerback: stoplever</td>
<td>19, 20</td>
</tr>
<tr>
<td>Blinding (pulsing) contacts - camfollower mechanism</td>
<td>24, 25</td>
</tr>
<tr>
<td>Breaklever</td>
<td>3, 5</td>
</tr>
<tr>
<td>Codebar</td>
<td>6, 7</td>
</tr>
<tr>
<td>Codebar bail</td>
<td>13, 15</td>
</tr>
<tr>
<td>Codelever</td>
<td>3, 5</td>
</tr>
<tr>
<td>Codelever universal bail</td>
<td>16, 17</td>
</tr>
<tr>
<td>Contact box</td>
<td>8, 10</td>
</tr>
<tr>
<td>Electrical line break</td>
<td>16, 17</td>
</tr>
<tr>
<td>Electrical send-receive break mechanism</td>
<td>26</td>
</tr>
<tr>
<td>Form feedout</td>
<td>29, 30</td>
</tr>
<tr>
<td>Function clutch</td>
<td>8, 11</td>
</tr>
<tr>
<td>Intermediate gears</td>
<td>8, 12</td>
</tr>
<tr>
<td>Keyboard lock</td>
<td>3, 5</td>
</tr>
<tr>
<td>Keylever</td>
<td>3, 4</td>
</tr>
<tr>
<td>Local carriage return</td>
<td>6, 7</td>
</tr>
<tr>
<td>Local line feed</td>
<td>8, 12</td>
</tr>
<tr>
<td>Lockbar</td>
<td>16, 17</td>
</tr>
<tr>
<td>Locking bail</td>
<td>13, 14</td>
</tr>
<tr>
<td>Margin indicator</td>
<td>8, 11</td>
</tr>
<tr>
<td>Nonrepeat lever</td>
<td>8, 9</td>
</tr>
<tr>
<td>Paper feedout</td>
<td>16, 18</td>
</tr>
<tr>
<td>Remote control gear shift</td>
<td>27, 28</td>
</tr>
<tr>
<td>Repeat-space mechanism</td>
<td>24, 26</td>
</tr>
<tr>
<td>Shaft</td>
<td>8, 11</td>
</tr>
<tr>
<td>Spacebar</td>
<td>3, 4</td>
</tr>
<tr>
<td>Transfer bail</td>
<td>8, 10</td>
</tr>
<tr>
<td>Transfer lever</td>
<td>8, 9</td>
</tr>
<tr>
<td>Universal bail latchlever</td>
<td>13, 14</td>
</tr>
<tr>
<td>Universal keyboard switch</td>
<td>33</td>
</tr>
<tr>
<td>Variable speed drive - speed selecting mechanism</td>
<td>31, 32</td>
</tr>
<tr>
<td>3. EARLIER DESIGN KSR BASE</td>
<td>34</td>
</tr>
<tr>
<td>(KEYBOARD)</td>
<td></td>
</tr>
<tr>
<td>Answerback: blinding (pulsing) contacts</td>
<td>48</td>
</tr>
<tr>
<td>Answerback: driving mechanism</td>
<td>49</td>
</tr>
<tr>
<td>Codebar</td>
<td>37, 38</td>
</tr>
<tr>
<td>Codebar bail and eccentric follower</td>
<td>37, 39</td>
</tr>
<tr>
<td>Codelever</td>
<td>34, 35</td>
</tr>
<tr>
<td>Codelever ball</td>
<td>37, 39</td>
</tr>
<tr>
<td>Contact box</td>
<td>37, 38</td>
</tr>
<tr>
<td>Intermediate gears</td>
<td>40, 41</td>
</tr>
<tr>
<td>Intermediate lever (signal generator)</td>
<td>42, 44</td>
</tr>
<tr>
<td>Keyboard lock</td>
<td>34, 36</td>
</tr>
<tr>
<td>Keyboard selector</td>
<td>37, 39</td>
</tr>
<tr>
<td>Local carriage return</td>
<td>34, 35</td>
</tr>
<tr>
<td>Local line feed</td>
<td>34, 36</td>
</tr>
<tr>
<td>Margin indicator</td>
<td>37, 38</td>
</tr>
<tr>
<td>Paper feedout</td>
<td>47, 48</td>
</tr>
<tr>
<td>Repeat-space mechanism</td>
<td>45, 46</td>
</tr>
<tr>
<td>Shaft</td>
<td>40, 41</td>
</tr>
<tr>
<td>Signal generator</td>
<td>42, 43</td>
</tr>
<tr>
<td>Signal generator clutch</td>
<td>42, 43</td>
</tr>
<tr>
<td>Signal line break mechanism</td>
<td>45, 46</td>
</tr>
<tr>
<td>Time delay mechanism</td>
<td>42, 43</td>
</tr>
<tr>
<td>4. RECEIVING-ONLY (RO) BASE</td>
<td>50</td>
</tr>
<tr>
<td>Signal line break mechanism</td>
<td>50, 51</td>
</tr>
</tbody>
</table>

1. GENERAL

1.01 This section provides the specific lubrication for the maintenance of the 28 teletypewriter base (KSR base and RO base) including variable and auxiliary features. Teletypewriter bases of the KSR type are also referred to as keyboards. This section and the section covering teletypewriter general lubrication give the complete information for lubricating the unit.

1.02 The section is reissued to:
(a) Add a more detailed table of contents.
(b) Improve the locator photographs by labeling the identifying arrows with the names of the mechanisms instead of paragraph numbers.
(c) Revise 2.16.
(d) Add six new locator photographs (2.29, 2.37, 2.41, 2.43, 2.45, and 4.01) and seven line drawings (2.11, 2.40, 2.46, 2.47, 3.26, 3.27, and 3.28).

1.03 The lubrication symbols used herein are the same as those in the teletypewriter general lubrication section. However, the symbol O is used in this section to mean only one drop of oil. The symbol O₂ is used to specify two drops of oil.

1.04 The keyboard or base should be lubricated before being placed in service as specified in the section covering preparation of the teletypewriter apparatus for installation. After a few weeks in service, it should ordinarily be relubricated to make certain that all the specified points have received lubricant. Thereafter, because of the varying conditions at each station, the keyboard or base should be lubricated as often as specified by the local instructions. The following lubrication intervals are suggested as a guide for use under normal operating conditions.

<table>
<thead>
<tr>
<th>Operating Speed (Words per Minute)</th>
<th>Lubricating Intervals (Whichever occurs first)</th>
</tr>
</thead>
<tbody>
<tr>
<td>60</td>
<td>3000 hours or 1 year</td>
</tr>
<tr>
<td>75</td>
<td>2400 hours or 9 months</td>
</tr>
<tr>
<td>100</td>
<td>1500 hours or 6 months</td>
</tr>
</tbody>
</table>
2. LATER DESIGN KSR BASE (KEYBOARD)

2.01 Spacebar, Keylever, Breaklever, Keyboard Lock, and Codelever Mechanisms
2.02 Spacebar

BEARING SURFACE (LEFT & RIGHT)

SPACE BAR

2.03 Keylever

ENGAGING SURFACE (36 LEVERS)

KEYTOP LEVERS
2.04 Breaklever

- ENGAGING SURFACE: BREAK KEYLEVER
- BEARING SURFACE: FUNCTION LEVER
- CONTACT SURFACE: BREAK LEVER

2.05 Keyboard Lock

- GUIDE SLOT: KEYBOARD LOCK PLUNGER
- HOOKS-EACH END: SPRING
- BEARING SURFACE: KEYBOARD LOCK LEVER
- ENGAGING SURFACE: KEYBOARD LOCK FUNCTION LEVER
- BEARING SURFACE: FUNCTION BAIL

2.06 Codelever

- CONTACTING SURFACE (32 LEVERS): CODE LEVER UNIVERSAL BAIL
- GUIDE SLOTS (32 LEVERS): CODE LEVERS
- FELT WASHERS (6 WASHERS): CODE LEVER SHAFT
- BEARING SURFACE (32 WEDGES): LOCK BALL TRACK
- HOOKS-EACH END (40 SPRINGS): SPRING
2.07 Codebar and Local Carriage Return Mechanisms
2.08 Codebar

- HOOKS-EACH END (7 SPRINGS)
- GUIDE SLOTS (LEFT AND RIGHT- TOP AND BOTTOM)
- BEARING SURFACE LOCAL CARRIAGE (2 PLACES)
- ENGAGING SURFACE

2.09 Local Carriage Return

- HOOKS-EACH END SPRING
- BEARING SURFACE LOCAL CARRIAGE RETURN FUNCTION
- ENGAGING SURFACE LOCAL CARRIAGE RETURN FUNCTION
- BAIL LEVER
2.10 Nonrepeat Lever, Transfer Lever, Contact Box, Transfer Bail, Function Clutch, Margin Indicator, Shaft, Local Line Feed, and Intermediate Gear
2.11 Nonrepeat Lever (Later Design)

- SAT: Felt Washer (Rear View)
- O2: Bearing Surface
- O: Hooks - Each End
- O: Bearing Surface
- G: Engaging Surface
- O2: Guide Slot

2.12 Transfer Lever

- O: Guide Slots
- 0: Hooks - Each End (7 Springs)
- O: Guide Slots
- SAT: Felt Washers (4 Washers)
- 0: Guide Slots

- Transfer Levers (7 Levers)
- Transfer Levers (7 Levers)
- Camming Surfaces
- Transfer Levers (7 Levers)
2.13 Contact Box

Note: Grease sparingly. Keep contacts free of oil or grease.

2.14 Transfer Bail
2.15 Function Clutch

- **02** LATCHING SURFACE
- **SAT** CLUTCH STOP LEVER
- **0** HOOKS-EACH END (2 SPRINGS)
- **CLUTCH LEVER SPRING** (2 SPRINGS)
- **FELT WASHERS (2 FRONT & REAR)**
- **CLUTCH TRIP BAIL**

2.16 Margin Indicator (Front View)

- **0** ENGAGING SURFACE
- **(DO NOT LUBRICATE IF SWITCH HAS A NYLON ACTUATOR)**
- **MARGIN INDICATOR SWITCH**
- **0 BEARING SURFACE**
- **SWITCH LEVER**
- **0. HOOKS-EACH END**
- **SPRING**

2.17 Shaft

- **SAT** FELT WASHER
- **G** GEAR TEETH
- **020** OIL HOLE
- **SAT** SIGNAL GENERATOR SHAFT
- **04** INTERNAL MECHANISM
- **SAT** SIGNAL GENERATOR SHAFT
- **FELT WICK**
- **020** SIGNAL GENERATOR CAM
- **OIL HOLE**
- **02** SIGNAL GENERATOR SHAFT
- **CAMMING SURFACE EACH CAM**
- **FELT WASHER**
- **SAT** SIGNAL GENERATOR CAM
2.18 Local Line Feed

- 02 GUIDE SLOT
- LOCAL LINE FEED TRIP LINK
- 0 BEARING SURFACE
- LOCAL LINE FEED FUNCTION LEVER
- 0 HOOKS-EACH END SPRING
- FUNCTION BAIL
- 0 BEARING SURFACE
- ENGAGING SURFACE
- LOCAL LINE FEED FUNCTION LEVER

2.19 Intermediate Gears (For motor, see section entitled Motor Unit, Lubrication)

- G TEETH (2 GEARs)
- INTERMEDIATE GEARS
- 02 BALL BEARING (2 BEARINGS)
- INTERMEDIATE GEAR SHAFT
2.20 Locking Bail, Universal Bail Latchlever and Codebar Bail
2.21 Locking Bail

- Hooks—Each End
- Spring
- Locking Bail Post
- Felt Washers (2 Washers - Front and Rear)
- Camming Surfaces
- Felt Wick
- Locking Bail
- Guide Slots (3 Slots)

2.22 Universal Bail Latchlever

- Hooks (Each End)
- Universal Bail Latch Lever
- Felt Washer
- Universal Bail Latch Lever
- Guide Slot (Each Side of Slot)
- Engaging Surface
- Reset Bail Latch
2.23 Codebar Bail

- **SAT**: Felt Washers (Two Washers)
- **0**: Bearing Surface (2 Places)
- **0**: Hooks—Each End (2 Springs)
- **SAT**: Felt Washer
- **04**: Bearing
- **02**: Bearing Surface
- **02**: Engaging Surface

- **Code Bar Bail**
- **Code Bar Bail**
- **Code Bar Bail**
- **Code Bar Bail Latch**
- **Code Bar Bail**
- **Code Bar Bail Latch**
- **Eccentric Follower**
2.24 Electrical Line Break, Codelever Universal Bail, Lockbar Latch and Paper Feedout Mechanisms
2.25 Electrical Line Break

- 0 HOOKS-EACH END SPRING
- G CONTACT SURFACE SENSITIVE SWITCH
- 0 BEARING SURFACE BREAK LEVER

2.26 Codelever Universal Bail

- 0 HOOKS-EACH END SPRING
- 02 BEARING SURFACE CODE LEVER UNIVERSAL BAIL

2.27 Lockbar Latch

- 0 BEARING SURFACE LOCK BAR LATCH
2.28 Paper Feedout

- ENGAGING SURFACE
- LOCAL LINE FEED TRIP LINK
- HOOKS-EACH END
- SPRING
- BEARING SURFACE
- LEVER
- ENGAGING SURFACE
- MAGNETIC BLOWOUT SWITCH
Section 573-116-701

2.30 Answerback: Armature

- Hook - Each End
- Bearing Surfaces (2 Places)
- Contacting Surface
- Latching Surface
- Spring
- Armature and Shaft

2.31 Answerback: Stoplever

- Latching Surface
- Contacting Surface
- Latch and Stop Lever
- Latch and Stop Lever
2.32 Answerback: Sensing Levers

- CAMMING SURFACES (5 PLACES)
- BEARING SURFACE
- HOOK - EACH END
- BEARING SURFACE
- HOOKS - EACH END (5 SPRINGS)
- HOOK - EACH END

- SENSING LEVERS
- DETENT LEVER
- DETENT LEVER AND ROLLER
- SPRING
- DETENT LEVER ROLLER
- SPRINGS
- SPRING
2.33 Answerback: Codebars and Sensing Levers

- Engaging Surfaces (5 Places)
- Bearing Surface (Both Sides)
- Bearing Surfaces (5 Levers)
- Guiding Surfaces (5 Places)
- Sensing Levers and Code Bars
- Sensing Levers and Levers Pivot
- Sensing Levers and Mounting Plate
2.34 Answerback: Driving Mechanism

2.35 Answerback: Stepping Pawl
2.36 Blinding (Pulsing) Contacts and Repeat-space Mechanism
2.37 Blinding (Pulsing) Contacts — Camfollower Mechanism

![Diagram of a cam mechanism with labels:
G ENGAGING SURFACE
O2 CAMMING SURFACE
CAM FOLLOWER EXTENSION
CAM SEGMENT

NOTE -- AVOID GETTING GREASE OR OIL ON CONTACT SURFACES]
2.38 Repeat-space Mechanism

2.39 Electrical Send-Receive Break Mechanism (Not Shown on a Locator Photograph)

NOTE --- AVOID GETTING OIL OR GREASE ON CONTACT SURFACE
2.40 Remote Control Gear Shift (Rear View)
2.41 Remote Control Gear Shift (Top Front View)

- O2: OILITE BEARINGS (2) (OIL EACH SIDE OF BEARINGS)
- G: GEAR TEETH
- SAT: FELT WICKS (2)
- SAT: FELT WICK
- O: LOOPS - EACH END
- O2: BEARING POINTS
- O2: OILITE BEARINGS (2) (OIL EACH SIDE OF BEARINGS)
- O: CLUTCH SPRINGS AND HUBS (LIGHT FILM DURING REASSEMBLY)
- O2: OILITE BEARING WASHERS (4)
- O2: OILITE BEARINGS (2) (OIL EACH SIDE)
- O2: OILITE BEARINGS (2) (OIL EACH SIDE)
- DRIVEN GEAR BEARINGS
- EIGHT GEARS INCLUDING MOTOR PINION
- SPRING CLUTCHES
- IDLER GEAR
- ARMATURE SPRING
- ARMATURE SHAFT
- IDLER GEAR BEARINGS
- SPRING CLUTCHES
- SPRING CLUTCHES
- 60 AND 100 WPM DRIVER GEAR BEARINGS
2.42 Form Feedout
2.43 Form Feedout

- PIVOTS
- LOOPS - EACH END
- SLIDING SURFACE
- PIVOT
- LOOPS - EACH END
- TRIP LEVER
- SOLENOID TORSION SPRING
- FORM FEED-OUT LINK
- FORM FEED-OUT LINK SPRING
2.44 Variable Speed Drive — Speed Selecting Mechanism

SPEED SELECTING MECHANISM
2.45 Variable Speed Drive — Speed Selecting Mechanism

- G GEARS (11 INCLUDING MOTOR PINION AND PRINTER DRIVEN GEAR)
- VARIABLE SPEED DRIVE
- G SHAFT
- CHANGE GEAR SLIDE
- O3 SHOULDER SCREW
- SELECTOR ECCENTRIC
- O3 PIVOT SCREW
- SELECTOR LEVER

(TOP VIEW FROM REAR)

- O3 PIVOT POST
- SELECTING LEVER
- O3 PIVOT POST
- SELECTOR LINK
- G ROLLER AND SIDES OF GEARS
- SELECTING LEVER
- SAT FELT WASHER
- ROLLER

(LEFT VIEW)
2.46 Universal Keyboard Switch (Not Shown on a Locator Photograph)

O BEARING SURFACE  FUNCTION LEVER
AND "HERE IS"
KEYLEVER ASSEMBLY

G BEARING SURFACE  CONTACT INSULATOR
3. EARLIER DESIGN KSR BASE (KEYBOARD)

3.01 Codelever, Local Carriage Return, Local Line Feed and Keyboard Lock Mechanisms
3.02 Codelever

- G CONTACTING SURFACE
- O GUIDE SLOTS (34 LEVERS)
- SAT FELT WASHERS (7 WASHERS)
- O BEARING SURFACES (34 WEDGES)
- O HOOKS—EACH END (38 SPRINGS)

3.03 Local Carriage Return

- O HOOK EACH END
- O2 BEARING SURFACE
- G ENGAGING SURFACE
- SPRING
- LOCAL CARRIAGE RETURN TRIP SHAFT
- LOCAL CARRIAGE RETURN FUNCTION ARM
3.04 Local Line Feed

- O2 GUIDE SLOT
- O HOOKS—EACH END
- O2 BEARING SURFACE
- O2 BEARING SURFACE
- G ENGAGING SURFACE

LOCAL LINE FEED TRIP LINK
SPRING
LOCAL LINE FEED TRIP ARM
LOCAL LINE FEED TRIP SHAFT
LOCAL LINE FEED FUNCTION ARM

3.05 Keyboard Lock

- O2 GUIDE SLOT
- O HOOKS—EACH END
- O2 BEARING SURFACE
- G ENGAGING SURFACE
- O2 BEARING SURFACE

KEYBOARD LOCK PLUNGER
SPRING
KEYBOARD LOCK PLUNGER
KEYBOARD LOCK FUNCTION ARM
KEYBOARD LOCK ARM TRIP SHAFT
3.06 Margin Indicator, Contact Box, Codebar, Codebar Bail and Eccentric Follower, Codelever Bail, and Keyboard Selector Mechanisms
3.07 Margin Indicator (Rear View)

3.08 Contact Box

3.09 Codebar
3.10 Keyboard Selector

- GUIDE SLOTS (7 SLOTS)
- BEARING SURFACES (FRONT AND REAR)
- FELT WASHERS (2 WASHERS-FRONT AND REAR)
- GUIDE SLOTS (7 SLOTS)
- ROLLER BEARINGS (2 ROLLERS)
- BEARING SURFACE
- FELT WASHERS (2 WASHERS-FRONT AND REAR)
- HOOKS-EACH END (3 SPRINGS)

SELECTOR LEVERS
ROCKER BAIL
LOCKING BAIL SHAFT
SELECTOR AND TRANSFER LEVERS
ROCKER BAIL DETENT
ROCKER BAIL DETENT
TRANSFER LEVERS SHAFT
SPRING

3.11 Codebar Bail and Eccentric Follower

- HOOKS-EACH END (4 SPRINGS)
- FELT WASHERS (FRONT AND REAR)
- BEARING SURFACE
- ENGAGING SURFACE (7 PLACES)
- ENGAGING SURFACE
- GUIDE SLOT
- FELT WASHER

SPRING
CODE BAR BAIL BEARING
CODE BAR BAIL ROLLER
CODE BAR BAIL
ECCENTRIC FOLLOWER
ECCENTRIC FOLLOWER
CODE BAR BAIL LATCH LEVER

3.12 Codelever Bail

- HOOKS-EACH END
- BEARING SURFACES (RIGHT AND LEFT)

SPRING
CODE LEVER BAIL
3.13 Intermediate Gears and Shaft
3.14 Intermediate Gears (For motor, see section entitled Motor Unit, Lubrication)

3.15 Shaft
3.16 Signal Generator, Signal Generator Clutch, Intermediate Lever, and Time Delay Mechanisms (Rear View)
3.17 Time Delay Mechanism

3.18 Signal Generator

3.19 Signal Generator Clutch
3.20 Intermediate Lever (Signal Generator)

- **02** Bearing Surfaces (3 Guides)
- **02** Engaging Surfaces (3 Places)
- **0** Hooks—Each End (3 Springs)
- **02** Bearing Surface

- Intermediate Lever Rollers
- Intermediate Levers
- Spring
- Flutter Lever
3.21 Signal Line Break and Repeat-space Mechanisms (Rear View)
SECTION 573-116-701

3. 22 Signal Line Break Mechanism

3. 23 Repeat-space Mechanism
3.24 Paper Feedout
3.25 Paper Feedout

3.26 Answerback: Blinding (Pulsing) Contacts (Not Shown on a Locator Photograph)
3.27 Answerback: Driving Mechanism (Not Shown on a Locator Photograph)

- Hook (Each End)
- Engaging Surface
- Bearing Surfaces (2 Places)
- Pivot Point
- Drive Link Spring
- Blocking Lever and Stop Lever
- Drive Plate Shaft and Side Plates
- Operating Bail
- Engaging Surface
- Drive Link and Drive Plate Stud
- Blocking Lever and Drive Plate Extension
- Operating Bail and Drive Link
- Contacting Surface
- Stepping Pawl and Eccentric Stud
- Contacting Surface
- Stepping Pawl and Code Blades
- Hook (Each End)
- Stepping Pawl Spring
- Shaft (During Installation)
- Drive Plate
- Contacting Surfaces
- Stop Lever and Latch Lever
- Pivot
- Latch Lever

Note: Also lubricate according to 2.30 through 2.32.
4. RECEIVING-ONLY (RO) BASE

4.01 Signal Line Break Mechanism
4.02 Signal Line Break Mechanism

- 02 PIVOT
- 0 HOOKS—EACH END
- 02 PIVOT
- TRANSFER LEVER
- SPRING
- KEYLEVER