COVER Book Cover

IBM 4683/4684 Point of Sale Terminal:

Operations Guide

Document Number SA27-3704-05

Part Number 25F6452

COVER Book Cover

IBM 4683/4684 Point of Sale Terminal:

Operations Guide

Document Number SA27-3704-05

Part Number 25F6452

EDITION Edition Notice
Sixth Edition (March 1992)

This is the sixth edition of the *IBM 4683/4684 Point of Sale Terminal: Operations Guide*. It replaces SA27-3704-04 and applies to the IBM (*) 4680 Operating System. A vertical bar appears in the left margin to indicate new or revised information. See the summary of changes for a list of changes in this edition.

Order publications through your IBM representative or the IBM branch office serving your locality. Publications are not stocked at the address given below.

A form for readers' comments appears at the back of this publication. If the form has been removed, address your comments to:

     IBM Corporation, Department E35
     PO Box 12195
     Research Triangle Park, North Carolina, 27709, USA

When you send information to IBM, you grant IBM a nonexclusive right to use or distribute the information in any way it believes appropriate without incurring any obligation to you.

FRONT_1 Notices

Changes are made periodically to the information herein. Before using
this publication in connection with the operation of IBM systems, consult
the latest *IBM System/370 Bibliography of Industry Systems and Application
Programs*, GC20-0370 for the editions that are applicable and current.

References in this publication to IBM products, programs, or services do
not imply that IBM intends to make these available in all countries in
which IBM operates. Any reference to an IBM product, program, or service
in this publication is not intended to state or imply that only IBM's
product, program, or service may be used. Any functionally equivalent
product, program, or service may be used. Evaluation and verification of
operation in conjunction with other products, except those expressly
designated by IBM, is the user's responsibility.

IBM may have patents or pending patent applications covering subject
matter in this document. The furnishing of this document does not give
you any license to these patents. You can send license inquiries, in
writing, to the IBM Director of Commercial Relations, IBM Corporation,
Purchase, NY 10577.

Subtopics
FRONT_1.1 Trademarks and Service Marks
FRONT_1.2 Electronic Emission Notices

FRONT_1.1 Trademarks and Service Marks

The following terms, denoted by an asterisk (*) at the first occurrence in
this publication, are trademarks or service marks of the IBM Corporation
in the United States or other countries:

```
Auto-Inking                 Personal Computer AT
IBM                         Personal System/2
Micro Channel               Proprinter
NetView                     PS/2
OS/2                        SAA
PC Network                  Systems Application Architecture
```

FRONT_1.1 Trademarks and Service Marks

The following terms, denoted by an asterisk (*) at the first occurrence in
this publication, are trademarks or service marks of the IBM Corporation
in the United States or other countries:

```
Auto-Inking                 Personal Computer AT
IBM                         Personal System/2
Micro Channel               Proprinter
NetView                     PS/2
OS/2                        SAA
PC Network                  Systems Application Architecture
```

FRONT_1.2 Electronic Emission Notices

Federal Communications Commission (FCC) Statement

Note: This equipment has been tested and found to comply with the limits
for a Class A digital device, pursuant to Part 15 of the FCC Rules. These
limits are designed to provide reasonable protection against harmful
interference when the equipment is operated in a commercial environment.
This equipment generates, uses, and can radiate radio frequency energy
and, if not installed and used in accordance with the instruction manual,
may cause harmful interference to radio communications. Operation of this
equipment in a residential area is likely to cause harmful interference,
in which case the user will be required to correct the interference at his
own expense.

Properly shielded and grounded cables and connectors must be used in order
to meet FCC emission limits. IBM is not responsible for any radio or
television interference caused by using other than recommended cables and
connectors or by unauthorized changes or modifications to this equipment.
Unauthorized changes or modifications could void the user's authority to
operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject
to the following two conditions: (1) this device may not cause harmful
interference, and (2) this device must accept any interference received,
including interference that may cause undesired operation.

Subtopics
FRONT_1.2.1 Canadian Department of Communications Statement
FRONT_1.2.2 General Safety Considerations (U.S. English)
FRONT_1.2.3 Généralités (Canadian French)
FRONT_1.2.4 Généralités sur la sécurité (French)
FRONT_1.2.5 Consideraciones Generales sobre Seguridad (Spanish)
FRONT_1.2.6 Allgemeine Sicherheitshinweise (German)
FRONT_1.2.7 Generelle sikkerhetshensyn (Norwegian)
FRONT_1.2.8 Norme generali di sicurezza (Italian)
FRONT_1.2.9 Recomendaç¦es Gerais Sobre Segurança (Portuguese)
FRONT_1.2.10 Yleisiä turvakysymyksiä (Finnish)
FRONT_1.2.11 Consignes de sécurité générales (Belgian French)
FRONT_1.2.12 Algemene veiligheidsvoorschriften (Belgian Dutch)
FRONT_1.2.13 Algemene opmerkingen betreffende veiligheid (Dutch)
FRONT_1.2.14 Almindelige sikkerhedsforanstaltninger (Danish)
FRONT_1.2.15 Allmänt om säkerhet (Swedish)

FRONT_1.2.1 Canadian Department of Communications Statement

This equipment does not exceed Class A limits per radio noise emissions
for digital apparatus, set out in the Radio Interference Regulation of the
Canadian Department of Communications. Operation in a residential area
may cause unacceptable interference to radio and TV reception requiring
the owner or operator to take whatever steps are necessary to correct the
interference.

Avis de conformité aux normes du ministère des Communications du Canada

Cet équipement ne dépasse pas les limites de Classe A de rayonnement des
bruits radioélectriques pour les appareils numériques, telles que
prescrites dans le Règlement sur le brouillage radioélectrique établi par
le ministère des Communications du Canada. L'exploitation faite en milieu
résidentiel peut entraîner le brouillage des réceptions radio et télé, ce
qui obligerait le propriétaire ou l'opérateur de prendre les dispositions
nécessaires pour en éliminer les causes.

FRONT_1.2.2 General Safety Considerations (U.S. English)

```
+-------------------------------------------------------------------------+
¦ The following general safety considerations should be observed          ¦
¦ whenever you work with electricity or with any electronic equipment:    ¦
¦-------------------------------------------------------------------------¦
¦ CAUTION                                                                 ¦
¦                                                                         ¦
¦ For safety when running the printer test, make sure personal articles   ¦
¦ such as ties, necklaces, or bracelets do not get caught in the moving    ¦
¦ print head.                                                             ¦
¦-------------------------------------------------------------------------¦
¦ DANGER                                                                  ¦
¦                                                                         ¦
¦ During periods of lightning activity, do not connect or disconnect any   ¦
¦ cables, or perform installation, maintenance, or reconfiguration.        ¦
¦-------------------------------------------------------------------------¦
¦ CAUTION                                                                 ¦
¦                                                                         ¦
¦ For your safety, you must connect the power cord of any equipment to a   ¦
¦ correctly wired and grounded receptacle.  An incorrectly wired          ¦
¦ receptacle can place a hazardous voltage on accessible metal parts of    ¦
¦ the equipment.  If you are unsure of the receptacle wiring, have a       ¦
¦ qualified electrician check the receptacle prior to connecting any       ¦
¦ equipment to it or working on any equipment connected to it.            ¦
+-------------------------------------------------------------------------+
```

FRONT_1.2.3 Généralités (Canadian French)

```
+-----------------------------------------------------------------------+
¦ Certaines précautions élémentaires s'imposent lorsque vous manipulez  ¦
¦ des conducteurs ou de l'equipment électronique:                       ¦
+-----------------------------------------------------------------------¦
¦ ATTENTION!                                                            ¦
¦                                                                       ¦
¦ Avant d'effectuer le test de l'imprimante, assurez-vous qu'aucun      ¦
¦ article que vous portez (par exemple, cravate, collier ou bracelet) ne ¦
¦ risque de s'accrocher dans la tête d'impression lorsqu'elle se met en  ¦
¦ mouvement.                                                            ¦
+-----------------------------------------------------------------------¦
¦ DANGER!                                                               ¦
¦                                                                       ¦
¦ Par temps d'orage, ne manipulez aucun câble et n'effectuez aucune     ¦
¦ opération d'installation, de maintenance ou de configuration.          ¦
+-----------------------------------------------------------------------¦
¦ ATTENTION!                                                            ¦
¦                                                                       ¦
¦  Une prise d'alimentation mal installée ou un mauvais câblage de la    ¦
¦ prise de raccordement peuvent provoquer une mise sous tension         ¦
¦ dangereuse des parties métalliques accessibles de la machine.  Le     ¦
¦ cordon d'alimentation et sa prise de raccordement, lorqu'ils sont      ¦
¦ livrés avec votre machine, sont adaptés à une utilisation sur cette    ¦
¦ unité et conformes aux normes en vigueur.  Pour votre sécurité, cette  ¦
¦ prise de raccordement doit être connectée à une prise d'alimentation   ¦
¦ correctement câblée et mise à la terre.  Le client est responsable de  ¦
¦ l'installation de la prise d'alimentation et des éventuelles           ¦
¦ modifications effectuées sur le cordon d'alimentation.  Il est         ¦
¦ recommandé de faire effectuer ces opérations par un électricien        ¦
¦ qualifé.                                                              ¦
+-----------------------------------------------------------------------+
```

FRONT_1.2.4 Généralités sur la sécurité (French)

```
+--------------------------------------------------------------------------+
¦ Certaines précautions élémentaires s'imposent lorsque votre              ¦
¦ environnement de travail comporte du matériel électrique ou             ¦
¦ électronique:                                                            ¦
+--------------------------------------------------------------------------¦
¦ ATTENTION                                                                ¦
¦                                                                          ¦
¦ Avant d'effectuer le test de l'imprimante, assurez-vous que votre       ¦
¦ cravate, votre chevelure, un collier, un bracelet ou vos vêtements ne    ¦
¦ risquent pas d'être happés par la tête d'impression lorsqu'elle se met   ¦
¦ en mouvement.                                                            ¦
+--------------------------------------------------------------------------¦
¦ DANGER                                                                   ¦
¦                                                                          ¦
¦ Par temps d'orage, ne manipulez aucun câble et n'effectuez aucune       ¦
¦ opération d'installation, de maintenance ou de configuration.           ¦
+--------------------------------------------------------------------------¦
¦ ATTENTION                                                                ¦
¦                                                                          ¦
¦ Pour votre sécurité, le cordon d'alimentation doit être connecté à une  ¦
¦ prise d'alimentation correctement câblée et mise à la terre.  Une       ¦
¦ prise d'alimentation mal installée ou un mauvais câblage de la fiche    ¦
¦ de raccordement peuvent provoquer une mise sous tension dangereuse des  ¦
¦ parties métalliques accessibles de la machine. En cas de doute sur la   ¦
¦ sécurité de votre installation, faites-la vérifier par un électricien   ¦
¦ qualifié avant de brancher une unité ou de travailler sur une machine   ¦
¦ connectée à une prise suspecte.                                         ¦
+--------------------------------------------------------------------------+
```

FRONT_1.2.5 Consideraciones Generales sobre Seguridad (Spanish)

```
+-----------------------------------------------------------------------+
¦ Las siguientes consideraciones generales sobre seguridad han de       ¦
¦ observarse siempre que se trabaje con electricidad o con cualquier    ¦
¦ equipo electrónico:                                                   ¦
+-----------------------------------------------------------------------¦
¦ ATENCION                                                              ¦
¦                                                                       ¦
¦ Por razones de seguridad, al efectuar la prueba de la impresora       ¦
¦ asegúrese de que los artículos personales tales como corbatas,        ¦
¦ collares o pulseras, no queden atrapados en la cabeza de impresión    ¦
¦ móvil.                                                                ¦
+-----------------------------------------------------------------------¦
¦ PELIGRO                                                               ¦
¦                                                                       ¦
¦ Durante períodos de tormenta eléctrica, no conecte ni desconecte      ¦
¦ ningún cable ni efectúe instalación, mantenimiento ni reconfiguración.¦
+-----------------------------------------------------------------------¦
¦ ATENCION                                                              ¦
¦                                                                       ¦
¦ Por su propia seguridad, debe conectar el cable de alimentación de    ¦
¦ todo equipo a un receptáculo con toma de tierra y cableado correctos. ¦
¦ Un receptáculo cableado incorrectamente puede suponer la existencia de¦
¦ un voltaje peligroso en piezas metálicas accesibles del equipo.  Si no¦
¦ está completamente seguro del cableado del receptáculo, haga que un    ¦
¦ electric ista calificado compruebe el receptáculo antes de conectar    ¦
¦ ningún equipo al mismo, o antes de trabajar con ningún equipo          ¦
¦ conectado al mismo.                                                   ¦
+-----------------------------------------------------------------------+
```

FRONT_1.2.6 Allgemeine Sicherheitshinweise (German)

```
+-----------------------------------------------------------------------+
¦ Folgende allgemeinen Sicherheitshinweise sollten bei der Arbeit an    ¦
¦ elektrischen und elektronischen Geräten immer beachtet werden:        ¦
+-----------------------------------------------------------------------¦
¦ VORSICHT                                                              ¦
¦                                                                       ¦
¦ Während des Druckertests darauf achten, daß keine Halstücher,         ¦
¦ Krawatten, Arm- oder Halsbänder am Schreibkopf hängen bleiben können. ¦
+-----------------------------------------------------------------------¦
¦ ACHTUNG                                                              ¦
¦                                                                       ¦
¦ Bei Gewittern dürfen keine Kabel angeschlossen oder gelöst und keine  ¦
¦ Installation, Wartung oder Neukonfigurierung durchgeführt werden.     ¦
+-----------------------------------------------------------------------¦
¦ VORSICHT                                                              ¦
¦                                                                       ¦
¦ Gerät nur an Schutzkontakt-Steckdose mit einwandfrei geerdetem        ¦
¦ Schutzkontakt anschließen.  Bei nicht ordnungsgemäß angeschlossenen   ¦
¦ Netzsteckdosen oder Netzsteckern können an berührbaren Metallteilen   ¦
¦ des Gerätes gefährliche Berührungsspannungen auftreten.  Für den      ¦
¦ einwandfreien Zustand von Steckdose und Stecker ist der Betreiber     ¦
¦ verantwortlich.                                                       ¦
+-----------------------------------------------------------------------+
```

FRONT_1.2.7 Generelle sikkerhetshensyn (Norwegian)

```
+------------------------------------------------------------------+
¦ Du b¦r ta f¦lgende hensyn når du arbeider med elektrisitet eller ¦
¦ elektronisk utstyr:                                              ¦
+------------------------------------------------------------------¦
¦ CAUTION                                                          ¦
¦                                                                  ¦
¦ Pass på at ikke slips, halskjeder og andre l¦se gjenstander setter seg ¦
¦ fast i skrivehodet når du kj¦rer skrivertesten.                  ¦
+------------------------------------------------------------------¦
¦ DANGER                                                           ¦
¦                                                                  ¦
¦ Du må ikke koble kabler fra eller til i tordenvær. Du må heller ikke ¦
¦ foreta installeringer, vedlikehold eller omkonfigurering.        ¦
+------------------------------------------------------------------¦
¦ CAUTION                                                          ¦
¦                                                                  ¦
¦ Nettkabelen må bli koblet til en jordet stikkontakt.  En stikkontakt ¦
¦ som ikke er skikkelig jordet, kan medf¦re farlig spenning på     ¦
¦ tilgjengelige metalldeler på enheten. Hvis du er usikker på om   ¦
¦ stikkontakten er jordet, ber du om hjelp fra en autorisert elektriker ¦
¦ f¦r du kobler til utstyr eller arbeider med tilknyttede enheter. ¦
+------------------------------------------------------------------+
```

FRONT_1.2.8 Norme generali di sicurezza (Italian)

```
+----------------------------------------------------------------------+
¦ Le seguenti norme generali di sicurezza dovrebbero essere osservate  ¦
¦ quando lavorate con l'elettricità o con qualsiasi apparecchiatura    ¦
¦ elettronica:                                                         ¦
+----------------------------------------------------------------------¦
¦ ATTENZIONE                                                           ¦
¦                                                                      ¦
¦ Per la vostra sicurezza, quando eseguite la prova della stampante    ¦
¦ verificate che gli articoli personali come le cravatte, le collane o i ¦
¦ bracciali non si impiglino nella testina di stampa in movimento.     ¦
+----------------------------------------------------------------------¦
¦ PERICOLO                                                             ¦
¦                                                                      ¦
¦ Durante periodi di attività temporalesca (fulmini) non collegate o   ¦
¦ staccate cavi o effettuate l'installazione, la manutenzione o la     ¦
¦ riconfigurazione.                                                    ¦
+----------------------------------------------------------------------¦
¦ ATTENZIONE                                                           ¦
¦                                                                      ¦
¦ Per la vostra sicurezza, dovete allacciare il cavo di alimentazione di ¦
¦ qualsiasi apparecchiature a un ricettacolo correttamente cablato e   ¦
¦ messo a terra.  Un ricettacolo cablato incorrettamente può trasmettere ¦
¦ un voltaggio pericoloso alle parti metalliche accessibili            ¦
¦ dell'apparecchiatura.  Se non siete sicuri del cablaggio del         ¦
¦ ricettacolo, incaricate un elettricista qualificato di controllare il ¦
¦ ricettacolo prima di collegare ad esso qualsiasi apparecchiatura o di ¦
¦ lavorare con qualsiasi apparecchiatura collegata ad esso.            ¦
+----------------------------------------------------------------------+
```

FRONT_1.2.9 Recomendaç¦es Gerais Sobre Segurança (Portuguese)

```
+-----------------------------------------------------------------------+
¦ Sempre que trabalhar com electricidade ou com equipamento electrónico ¦
¦ deverá seguir as seguintes recomendaç¦es gerais sobre segurança:      ¦
+-----------------------------------------------------------------------¦
¦ CUIDADO                                                               ¦
¦                                                                       ¦
¦ Para sua segurança, quando efectuar o teste da impressora, assegure-se ¦
¦ de que os seus artigos pessoais, tais como, gravatas, colares ou      ¦
¦ pulseiras n¦o podem ser apanhados pelo movimento da cabeça de         ¦
¦ impress¦o.                                                            ¦
+-----------------------------------------------------------------------¦
¦ PERIGO                                                                ¦
¦                                                                       ¦
¦ Sempre que haja possibilidade de trovoada n¦o ligue nem desligue      ¦
¦ cabos, nem efectue trabalhos de instalaç¦o, assistência técnica ou    ¦
¦ reconfiguraç¦o.                                                       ¦
+-----------------------------------------------------------------------¦
¦ CUIDADO                                                               ¦
¦                                                                       ¦
¦ Para sua segurança, o cabo de corrente eléctrica de qualquer          ¦
¦ equipamento só deverá ser ligado a uma tomada com os fios montados    ¦
¦ correctamente e com boa ligaç¦o de terra.  Uma tomada com os fios     ¦
¦ montados incorrectamente poderá provocar o aparecimento de voltagens  ¦
¦ perigosas em partes metálicas facilmente acessíveis no equipamento.   ¦
¦ Se n¦o tiver a certeza de que a tomada está ligada correctamente peça ¦
¦ que esta seja verificada por um electricista qualificado, antes de lhe ¦
¦ ligar o equipamento ou de trabalhar num que a ela esteja ligado.      ¦
+-----------------------------------------------------------------------+
```

FRONT_1.2.10 Yleisiä turvakysymyksiä (Finnish)

```
+-----------------------------------------------------------------------+
¦ Alla luetellut yleiset turvatekijät tulee huomioon, kun olet          ¦
¦ tekemisissä sähkön ja sähkölaitteiden kanssa:                         ¦
+-----------------------------------------------------------------------¦
¦ VAROITUS                                                              ¦
¦                                                                       ¦
¦ Testatessasi kirjoitinta huolehdi siitä, etteivät esim. solmiosi,     ¦
¦ kaulaketjusi eikä rannerenkaasi tartu liikkuvaan kirjoituspäähän.     ¦
+-----------------------------------------------------------------------¦
¦ VAARA                                                                ¦
¦                                                                       ¦
¦ Älä tee mitään kaapelien kytkentöjä, asennuksia eikä huoltoa ukonilman ¦
¦ aikana.                                                               ¦
+-----------------------------------------------------------------------¦
¦ VAROITUS                                                              ¦
¦                                                                       ¦
¦ Kytke virtajohdot ja kaapelit vain oikein maatettuihin pistokkeisiin. ¦
¦ Väärä kytkentä voi aiheuttaa metalliosissa vaarallisia jännitteitä.   ¦
¦ Anna kokeneen sähköasentajan tarkastaa sähkölaitteet.                 ¦
+-----------------------------------------------------------------------+
```

FRONT_1.2.10 Yleisiä turvakysymyksiä (Finnish)

```
+-----------------------------------------------------------------------+
¦ Alla luetellut yleiset turvatekijät tulee huomioon, kun olet          ¦
¦ tekemisissä sähkön ja sähkölaitteiden kanssa:                         ¦
+-----------------------------------------------------------------------¦
¦ VAROITUS                                                              ¦
¦                                                                       ¦
¦ Testatessasi kirjoitinta huolehdi siitä, etteivät esim. solmiosi,     ¦
¦ kaulaketjusi eikä rannerenkaasi tartu liikkuvaan kirjoituspäähän.     ¦
```

aikana.

FRONT_1.2.11 Consignes de sécurité générales (Belgian French)

```
+---------------------------------------------------------------------+
¦ Vous devez tenir compte des consignes de sécurité générales lorsque ¦
¦ vous travaillez avec l'électricité ou avec du matériel électronique: ¦
+---------------------------------------------------------------------¦
¦ ATTENTION                                                           ¦
¦                                                                     ¦
¦ Pour éviter tout accident pendant le test de l'imprimante, éloignez de ¦
¦ la tête d'impression tous les objets personnels tels que cravates,  ¦
¦ colliers ou bracelets.                                              ¦
+---------------------------------------------------------------------¦
¦ DANGER                                                              ¦
¦                                                                     ¦
¦ Pendant un orage, il est interdit de brancher ou de débrancher des  ¦
¦ câbles, de procéder à l'installation, la maintenance ou la          ¦
¦ reconfiguration.                                                    ¦
+---------------------------------------------------------------------¦
¦ ATTENTION                                                           ¦
¦                                                                     ¦
¦ Pour des raisons de sécurité, la fiche du cordon d'alimentation de  ¦
¦ toute machine doit être branchée sur une prise correctement câblée et ¦
¦ mise à la terre. Une prise mal installée peut provoquer une tension ¦
¦ dangereuse sur les parties métalliques accessibles de la machine. En ¦
¦ cas de doute, faites contrôler votre prise par un électricien qualifié ¦
¦ avant d'y connecter des machines ou de travailler sur des machines qui ¦
¦ y sont connectées.                                                  ¦
+---------------------------------------------------------------------+
```

FRONT_1.2.12 Algemene veiligheidsvoorschriften (Belgian Dutch)

```
+--------------------------------------------------------------------+
¦ U moet de volgende algemene veiligheidsvoorschriften in acht nemen ¦
¦ telkens u met elektriciteit of met elektronische apparatuur werkt: ¦
+--------------------------------------------------------------------¦
¦ LET OP                                                             ¦
¦                                                                    ¦
¦ Voor uw eigen veiligheid moet u ervoor zorgen dat uw das, halssnoer of ¦
¦ armband niet tussen de bewegende printerkop geraakt bij het testen van ¦
¦ de printer.                                                        ¦
+--------------------------------------------------------------------¦
¦ GEVAAR                                                             ¦
¦                                                                    ¦
¦ Tijdens een onweer is het verboden kabels aan te sluiten of los te ¦
¦ koppelen, een machine te installeren, te onderhouden of te         ¦
¦ herconfigureren.                                                   ¦
+--------------------------------------------------------------------¦
¦ LET OP                                                             ¦
¦                                                                    ¦
¦ Uit veiligheidsoverwegingen moet de stekker van het netsnoer worden ¦
¦ aangesloten op een degelijk bedraad en geaard stopcontact. Bij een ¦
¦ onjuist bedraad stopcontact kunnen aanraakbare metalen onderdelen van ¦
¦ de machine onder een gevaarlijke spanning komen te staan. In geval van ¦
¦ twijfel, laat u het stopcontact controleren door een electricien   ¦
¦ voordat u er een machine op aansluit of voordat u op machines werkt ¦
¦ die erop aangesloten zijn.                                         ¦
+--------------------------------------------------------------------+
```

FRONT_1.2.13 Algemene opmerkingen betreffende veiligheid (Dutch)

```
+------------------------------------------------------------------------+
¦ Als u met elektriciteit of met elektronische apparatuur werkt, moet u  ¦
¦ aan het volgende denken:                                               ¦
+------------------------------------------------------------------------¦
¦ WAARSCHUWING                                                           ¦
¦                                                                        ¦
¦ Pas op dat bij het uitvoeren van de printertest geen zaken zoals       ¦
¦ stropdassen, halskettingen of armbanden in de bewegende schrijfkop     ¦
¦ terecht komen.                                                         ¦
+------------------------------------------------------------------------¦
¦ WAARSCHUWING                                                           ¦
¦                                                                        ¦
¦ U wordt geadviseerd tijdens onweer geen kabels aan te sluiten of te    ¦
¦ ontkoppelen. U wordt ook ontraden tijdens onweer apparatuur te         ¦
¦ installeren of opnieuw te configureren of onderhoud uit te voeren.     ¦
+------------------------------------------------------------------------¦
¦ WAARSCHUWING                                                           ¦
¦                                                                        ¦
¦ Zorg ervoor dat u het netsnoer van een apparaat aansluit op een        ¦
¦ correct aangesloten stopcontact met randaarde.  Een onjuist            ¦
¦ aangesloten stopcontact kan gevaarlijke spanning veroorzaken op niet   ¦
¦ afgeschermde metalen delen van de apparatuur.  Als u er niet zeker van ¦
¦ bent of het stopcontact goed is aangesloten, laat u het nakijken door  ¦
¦ een bevoegd electricien, voordat u er apparatuur op aansluit of gaat    ¦
¦ werken op apparatuur die op dit stopcontact is aangesloten.            ¦
+------------------------------------------------------------------------+
```

FRONT_1.2.14 Almindelige sikkerhedsforanstaltninger (Danish)

```
+---------------------------------------------------------------------+
| De nedenstående almindelige sikkerhedsforanstaltninger skal         |
| overholdes, når der arbejdes med elektricitet eller enhver anden form |
| for elektronisk udstyr:                                             |
+---------------------------------------------------------------------+
| NB|                                                                 |
|                                                                     |
| Af sikkerhedshensyn skal brugeren under udf¦relse af printertest s¦rge |
| for, at personlige beklädningsdele som f.eks. slips, halskäder og   |
| armbånd ikke kommer i ber¦ring med skrivehovedet, som er i bevägelse. |
+---------------------------------------------------------------------+
| FARE|                                                               |
|                                                                     |
| I tilfälde af tordenvejr undlad at samle eller afmontere kabler.    |
| Ligeledes skal enhver form for installering, vedligeholdelse eller  |
| omkonfigurering indstilles.                                         |
+---------------------------------------------------------------------+
| NB|                                                                 |
|                                                                     |
| Af sikkerhedshensyn skal en netledning altid sluttes til en korrekt |
| monteret, jordforbundet stikkontakt.  En forkert forbundet stikkontakt |
| kan forårsage farlige spändinger på tilgängelige metaldele på       |
| udstyret.  I tvivlstilfälde omkring forbindelsen b¦r en elektriker  |
| efterse stikkontakten, f¦r udstyr kobles til stikkontakten, og      |
| ligeledes f¦r der arbejdes på tilkoblet udstyr.                     |
+---------------------------------------------------------------------+
```

FRONT_1.2.15 Allmänt om säkerhet (Swedish)

```
+-----------------------------------------------------------------------+
¦ Du bör följa nedanstående generella regler när du arbetar med         ¦
¦ elektrisk och elektronisk utrustning:                                 ¦
+-----------------------------------------------------------------------¦
¦ VARNING                                                               ¦
¦                                                                       ¦
¦ Försäkra dig om att inte slips, armband, halsband eller liknande kan  ¦
¦ fastna i skrivhuvudet när du testar skrivaren.                        ¦
+-----------------------------------------------------------------------¦
¦ FARA                                                                  ¦
¦                                                                       ¦
¦ Vid åskväder ska du inte utföra installations- eller underhållsarbete.¦
¦ Du ska inte heller ansluta eller lossa utrustningens kablar.          ¦
+-----------------------------------------------------------------------¦
¦ VARNING                                                               ¦
¦                                                                       ¦
¦ Nätkabeln måste anslutas till ett korrekt kopplat jordat eluttag.  Ett¦
¦ felaktigt kopplat uttag kan medföra att utrustningens yttre           ¦
¦ metalldelar blir spänningsförande.  Om du är osäker, låt en elektriker¦
¦ kontrollera uttaget innan du ansluter utrustning eller innan du       ¦
¦ arbetar med utrustning som är ansluten till uttaget.                  ¦
+-----------------------------------------------------------------------+
```

PREFACE Preface

This manual describes how to use and care for your IBM 4683/4684 Point of Sale Terminals. It also contains step-by-step procedures for removing and replacing expendable supply items.

The *IBM 4683/4684 Point of Sale Terminal: Operations Guide* is written primarily for store personnel who prepare training materials and store procedures. The manual should be used as a guide to operating the IBM 4683/4684 Point of Sale Terminals under normal conditions.

The tables in the following topic show all the manuals associated with your IBM 4683/4684 Point of Sale Terminal and how the manuals relate to each other.

This manual contains three topics and one appendix:

Topic 1   Shows each terminal component.

Topic 2   Gives information on how to use terminal components.

Topic 3   Gives step-by-step procedures for replacing expendable
            supplies.

Appendix A Contains information for ordering customer replaceable parts
            and expendable supplies for your terminal.

Subtopics
PREFACE.1 Store System Library
PREFACE.2 Related Publications

PREFACE.1 Store System Library

The following chart relates each publication in the library to the task or
tasks for which it provides data. Choose the task you want to complete
and find the appropriate publication in the corresponding column.

Table 0-1. Store System Library - Publication Grouping by Task

Planning	Installing	Operating	Programming	Maintaining
IBM 4680 Store System: Selecting Hardware and Software Components GA27-3691	IBM 4683 Point of Sale Terminal: Installation Guide SA27-3783	IBM 4683/4684 Point of Sale Terminal: Operations Guide SA27-3704	IBM 4680 BASIC: Language Reference SC30-3356	IBM 4680 Store System and IBM 4683/4684 Point of Sale Terminal: Problem Determination Guide SY27-0330
IBM 4680 Store System: Planning and Configuration Guide GC30-3532		IBM 4680 Store System: User's Guide SC30-3518	IBM 4680 Store System: Programming Guide SC30-3517	IBM 4680 Store System: Terminal Test Procedures Reference Summary GX27-3779
IBM 4680 Store System: Preparing Your Site GA27-3692	IBM 4684 Point of Sale Terminal: Installation Guide SA27-3837	IBM 4680 Store System: Display Manager User's Guide SC30-3404		IBM 4684 Point of Sale Terminal: Maintenance Summary Card SX27-3885
IBM 4684 Point of Sale Terminal: Introduction and Planning Guide SA27-3835	IBM Personal System/2 Store Loop Adapter/A Installation and Setup Instructions SK2T-0318			IBM 4683/4684 Point of Sale Terminal: Maintenance Manual SY27-0295
	IBM 4684 Store Loop Adapter/A: Installation, Testing, Problem Determination, and Technical Reference SD21-0045			IBM 4683/4684 Point of Sale Terminal: Parts Catalog S131-0097
		IBM 4680 Store System: Messages Guide SC30-3521		
		See "Related Publications" in topic PREFACE.2 for the application manuals that support these tasks.		

PREFACE.2 Related Publications

Subtopics
PREFACE.2.1 Software Publications
PREFACE.2.2 Hardware Publications
PREFACE.2.3 General Publications

PREFACE.2.1 Software Publications

IBM 4680 General Sales Application

IBM 4680 General Sales Application: Planning and Installation Guide - GC30-3368

IBM 4680 General Sales Application: Guide to Operations - SC30-3369

IBM 4680 General Sales Application: Programming Guide - SC30-3370

IBM 4680 General Sales Application-Price Management Feature: User's Guide - SC30-3461

IBM 4680 General Sales Application-Terminal Offline Feature: User's Guide - SC30-3499

IBM 4680 Supermarket Application

IBM 4680 Supermarket Application: Planning and Installation Guide - GC30-3371

IBM 4680 Supermarket Application: Guide to Operations - SC30-3372

IBM 4680 Supermarket Application: Programming Guide - SC30-3373

IBM 4680 Supermarket Application-Terminal Offline Feature: User's Guide - SC30-3512

IBM 4680 Supermarket Application-Electronic Funds Transfer Feature: User's Guide - SC30-3513

IBM 4680 Chain Drug Sales Application

IBM 4680 Chain Drug Sales Application: Planning and Installation Guide - GC30-3412

IBM 4680 Chain Drug Sales Application: Guide to Operations - SC30-3413

IBM 4680 Chain Drug Sales Application: Programming Guide - SC30-3414

IBM 4680 Store Management Application

IBM 4680 Store Management Application: Planning and Installation Guide- GC30-3483

IBM 4680 Store Management Application: Guide to Operations- SC30-3484

IBM 4680 Store Management Application: Programming Guide - SC30-3487

IBM 4680 Store Management Application-Inventory Control Feature: User's Guide - SC30-3485

IBM 4680 Store Management Application-Price Management Feature: User's Guide - SC30-3486

Retail Industry Programming Support Services - Applications

Retail Industry Programming Support Services: Planning and Installation Guide - SC33-0575

Retail Industry Programming Support Services: Base Package Programmer's Guide - SC33-0576

Retail Industry Programming Support Services: Device Drivers Programmer's Guide - SC33-0680

Retail Industry Programming Support Services: Host Communication Package Programmer's Guide -SC33-0650

In-Store Processing

In-Store Processing: Application Development Guide - SC30-3534

In-Store Processing: IBM AIX--Application Development Guide- SC30-3537

In-Store Processing: IBM OS/2 Extended Edition--Application Development Guide- SC30-3538

In-Store Processing: IBM OS/400--Application Development Guide- SC30-3535

In-Store Processing: IBM 4680 OS--Application Development Guide-

SC30-3536

Networks

IBM PC Network Baseband Planning Guide- S68X-2269
IBM Token-Ring Network Introduction and Planning Guide - GA27-3677-2
IBM Local Area Network Support Program - IBM P/N 83X7873

PREFACE.2.2 Hardware Publications

Scanners

IBM 1520 Hand-Held Scanner User's Guide- GA27-3685

*IBM 4686 Retail Point of Sale Scanner: Physical Planning,
Installation, and Operation Guide - SA27-3854*

IBM 4686 Retail Point of Sale Scanner: Maintenance Manual - SY27-0319

*IBM 4687 Point of Sale Scanner Model 1: Physical Planning,
Installation, and Operation Guide - SA27-3855*

*IBM 4687 Point of Sale Scanner Model 1: Maintenance Manual -
SY27-0317*

*IBM 4687 Point of Sale Scanner Model 2: Physical Planning Guide -
SA27-3882*

IBM 4687 Point of Sale Scanner Model 2: Operator's Guide - SA27-3884

*IBM 4687 Point of Sale Scanner Model 2: Maintenance Manual -
SY27-0324*

IBM Personal Computer and IBM Personal System/2 (*)

IBM Guide to Operations-Personal Computer/AT - IBM P/N 6280066

*IBM Guide to Operations-Personal Computer/AT - Store Loop Adapter -
SA27-3694*

*IBM Hardware Maintenance and Service: Personal Computer/AT - Store
Loop Adapter - SX27-0296*

*IBM Personal System/2 - Store Loop Adapter/A: Supplements for the
Hardware Maintenance Library - SK2T-0319*

*IBM Personal System/2 - Model 50 Quick Reference and Reference
Diskette - S68X-2247*

*IBM Personal System/2 - Model 60 Quick Reference and Reference
Diskette - S68X-2213*

*IBM Personal System/2 - Model 70 Quick Reference and Reference
Diskette - S68X-2308*

*IBM Personal System/2 - Model 80 Quick Reference and Reference
Diskette - S68X-2284*

Cabling
A Building Planning Guide for Communication Wiring - G320-8059
IBM Cabling System Planning and Installation Guide - GA27-3361
IBM Cabling System Catalog - G570-2040
Using the IBM Cabling System with Communication Products - GA27-3620
IBM PC Network Broadband Guide - S68X-2269
IBM Token-Ring Network Introduction and Planning Guide - GA27-3677

Setup and Verification

IBM 4680 Store System: Setup and Verification - SA27-3703

PREFACE.2.3 General Publications

   Advanced Data Communications for Stores General Information -
   GH20-2188

   Distributed Systems Executive General Information - GH19-6394

   IBM Disk Operating System 4.0 - IBM P/N 6280256

   IBM Proprinters - SC31-3793

   IBM 3270 Emulation Feature for the IBM 4680 Store System - (Online
   with the product)

   IBM 4680 Support for COBOL Version 2 - (Online with the product)

   IBM 4680 Store System Regression Tester - (Online with the product)

   NetView Distribution Manager: General Information - GH19-6587

   Systems Network Architecture: General Overview - GC30-3073

CHANGES Summary of Changes

```
Subtopics
CHANGES.1 SA27-3704-5 (March 1992)
CHANGES.2 SA27-3704-4 (December 1988)
CHANGES.3 SA27-3704-3 (May 1988)
CHANGES.4 SA27-3704-2 (December 1987)
CHANGES.5 SA27-3704-1 (June 1986)
```

|CHANGES.1 SA27-3704-5 (March 1992)

|This edition of the *IBM 4683/4684 Point of Sale Terminal: Operations Guide*
|includes information about:

| The ANPOS keyboard
| The Hand Held Bar Code Reader Model 2
| The Point of Sale Printer Model 3.

|CHANGES.1 SA27-3704-5 (March 1992)

|This edition of the *IBM 4683/4684 Point of Sale Terminal: Operations Guide*
|includes information about:

| The ANPOS keyboard
| The Hand Held Bar Code Reader Model 2
| The Point of Sale Printer Model 3.

CHANGES.2 SA27-3704-4 (December 1988)

This edition of the *IBM 4683/4684 Point of Sale Terminal: Operations Guide*
includes information about the devices that are associated with the IBM
4684 Point of Sale Terminal as well as information about the devices that
are associated with the IBM 4683 Point of Sale Terminal.

The information about the 4684 Point of Sale Terminal includes:

   The 2.0 M 3-1/2 inch diskette drive located in the system unit of the
   IBM 4684 Point of Sale Terminal. The reference diskette is used with
   the terminal for configuration and utilities.

   The Point of Sale Scanner. The scanner is used to read UPC/EAN labels
   on merchandise.

   The Enhanced Alphanumeric Keyboard. This keyboard can be used on the
   4684 terminal.

   The 14-Inch Color Display. The 8512 14-Inch Color Display is similar
   to the 12-Inch Color Display, but it is two inches taller.

   The IBM Proprinter (*) family of printers.

   The Combined Keyboard/Display. This integrated keyboard and display
   includes a 50-Key Keyboard, an Operator Display, and a Dual-Track
   Magnetic Stripe Reader in one unit. The unit fits onto the 4684
   terminal in an integrated configuration.

CHANGES.3 SA27-3704-3 (May 1988)

This edition of the *IBM 4680 Store System: Terminal Operations Guide*
includes information about devices that are associated with the IBM 4680
Operating System Version 2, including:

    The 9-Inch (223 mm) Monochrome Display. You can choose one of the
    following two screen formats: up to 480 characters (12 lines of 40),
    or up to 960 characters (16 lines of 60).

    The IBM Dual-Track MSR. This magnetic stripe reader allows two tracks
    of the magnetic stripe on credit cards or badges to be read.

CHANGES.4 SA27-3704-2 (December 1987)

This edition of the *IBM 4680 Store System: Terminal Operations Guide*
includes information about devices that are associated with the IBM 4680
Operating System Version 1 Release 3, including:

    The Shopper Display. This display will typically be used to display
    shopper information instead of system information. The display has
    one row of eight numeric positions and six function indicators. The
    Shopper Display cannot be used as the system display.

    The Operator Display. This display will typically be used to display
    transaction or system information. The display has two rows of twenty
    alphanumeric character positions (a total of forty characters).

    Note: More than one display can be attached to your terminal at the
    same time.

    The Alphanumeric Keyboard. This keyboard provides an alphanumeric
    keyboard that includes a numeric keypad in a data entry arrangement,
    sixteen function keys, and a manager's override keylock.

    The Matrix Keyboard. This keyboard provides a 139-key
    customer-programmable keyboard, including a numeric keypad in a data
    entry arrangement, system function keys and a manager's override
    keylock.

    The IBM Hand-Held Bar Code Reader. This reader is used to read
    UPC/EAN labels on merchandise.

CHANGES.5 SA27-3704-1 (June 1986)

This edition of the *IBM 4680 Store System: Terminal Operations Guide*
includes information about devices that are associated with the IBM 4680
Operating System Version 1 Release 2, including:

The 12-Inch Monochrome Display. This display can be used instead of
the 5-Inch Monochrome Display or the 40-Character Alphanumeric
Display.

The magnetic wand reader. This reader can read magnetic encoded
labels on merchandise tickets. It can be attached to either model of
the 4683 terminal.

1.0 Topic 1. The IBM 4683 and 4684 Point of Sale Terminals

This topic gives an overview of your system terminals. Use the figures in
the following topics to help you identify your terminal devices.

The IBM 4683 terminal is shown in most of the following figures. The IBM
4684 Point of Sale terminal and devices of the IBM Personal System/2 (*)
are only used in the figures when there is a need to specify unique
features of the later model. Unique features include the 3-1/2 inch
diskette drive and changes in the back panel where the cables are plugged
into the terminal. The devices on the topics that follow can be used with
both the 4683 and the 4684 terminals unless otherwise specified.

PICTURE 1

Figure 1-1. 4683 Point of Sale Terminal Base Unit

PICTURE 2

Figure 1-2. 4684 Point of Sale Terminal System Unit

Subtopics
1.1 Cash Drawer
1.2 Displays
1.3 Keyboards
1.4 Printers
1.5 Readers, Scanners
1.6 Other Terminal Devices

1.1 Cash Drawer

PICTURE 3

Figure 1-3. Cash Drawer

PICTURE 4

Figure 1-4. Cash Till

1.2 Displays

**Note: Your terminal may have several different display models attached to
it.**

PICTURE 5

Figure 1-5. 40-Character Alphanumeric Display

PICTURE 6

Figure 1-6. Shopper Display

PICTURE 7

Figure 1-7. Operator Display

PICTURE 8

Figure 1-8. 5-Inch Monochrome Display. This display is available only
            with the 4683 terminal.

Subtopics
1.2.1 Video Displays

1.2.1 Video Displays

**Note: Your terminal may have several different display models attached to
it.**

PICTURE 9

Figure 1-9. 9-Inch Monochrome Display

PICTURE 10

Figure 1-10. IBM 8513 12-Inch Color Display

PICTURE 11

Figure 1-11. IBM 8503 12-Inch Monochrome Display

PICTURE 12

Figure 1-12. IBM 8512 14-Inch Color Display.   This display is available
             only with the 4684 terminal.

1.3 Keyboards

PICTURE 13

Figure 1-13. 50-Key Keyboard

PICTURE 14

Figure 1-14. Combined Keyboard/Display

PICTURE 15

Figure 1-15. Alphanumeric (A/N) Keyboard

PICTURE 16

Figure 1-16. Matrix Keyboard

|PICTURE 17

|Figure 1-17. ANPOS Keyboard

PICTURE 18

Figure 1-18. Enhanced Alphanumeric Keyboard. This keyboard is available
              only with the 4684 terminal.

Note: The Enhanced Alphanumeric Keyboard will overlap the security base
if you attempt to place it on the terminal. Therefore, it is best to
place the keyboard on a flat surface close to your terminal.

1.4 Printers

PICTURE 19

Figure 1-19. Point of Sale Printer Model 1 or Model 2

|PICTURE 20

|Figure 1-20. Point of Sale Printer Model 3

PICTURE 21

Figure 1-21. IBM Proprinter

1.5 Readers, Scanners

PICTURE 22

Figure 1-22. Single or Dual-Track MSR

PICTURE 23

Figure 1-23. Low-Profile Dual-Track MSR

|PICTURE 24

|Figure 1-24. Hand-Held Bar Code Readers

PICTURE 25

Figure 1-25. Magnetic Wand Reader. This reader is available only with
              the 4683 terminal.

1.6 Other Terminal Devices

Other terminal devices can be used with your terminal. Some of these
devices are described briefly below. For further information on how to
operate these and other components, refer to the manuals that are shipped
with them.

    IBM and non-IBM scanners can be used with your terminal.
    A coin dispenser can attach to your terminal.
    A scale can attach to your terminal.

2.0 Topic 2. Using Terminal Devices

Subtopics
2.1 Switching Power On/Off
2.2 Using the Diskette Drive on the 4684 Terminal
2.3 Adjusting Display Controls
2.4 Using the Cash Drawer
2.5 Using the Keyboard
2.6 Using the Model 1 or Model 2 Point of Sale Printer
2.7 Using the Model 3 Point of Sale Printer
2.8 Entering Data at Your Terminal
2.9 Using the Dump Switch on the IBM 4683 or 4684

2.1 Switching Power On/Off

The On/Off switch for the terminal is located at the front of the system
or base unit. The switch has two positions, which are marked **I** and **O**. To
operate the power switch:

    Move the power switch to **I** to switch the power ON.

PICTURE 26

Figure 2-1. Switching Power ON

    Move the power switch to **O** to switch the power OFF.

PICTURE 27

Figure 2-2. Switching Power OFF

2.2 Using the Diskette Drive on the 4684 Terminal

The 4684 terminal system unit is equipped with a diskette drive and uses
the diskettes described here. An in-use light on the diskette drive
indicates when the system is using the drive. Do not power off the system
or remove a diskette when the in-use light is on.

PICTURE 28

Figure 2-3. The Diskette Drive on the 4684 Terminal

Subtopics
2.2.1 Handling Diskettes
2.2.2 Using Diskettes
2.2.3 Operating the Diskette Drive Keylock
2.2.4 Using the Reference Diskette

2.2.1 Handling Diskettes

2.2.1 Handling Diskettes

Be careful with the diskettes you use. Because each piece of information
occupies such a small area on the diskette, small scratches, dust, food,
or tobacco particles may make the information unusable. Be sure to
remember the following:

    Do not touch the recording surfaces.

    Keep diskettes away from magnets and magnetic field sources such as
    telephones, dictation equipment, and electronic calculators.

    Keep diskettes away from extreme heat and cold. The recommended
    temperature range is 50-140° F (10-60° C).

Proper care helps prevent loss of information.

2.2.2 Using Diskettes

Your 4684 terminal uses 2.0 M 3-1/2 inch diskettes for storing
information. The system writes (saves) information on the diskette and
reads the information on the diskette as often as needed, or replaces old
information with new information by writing over it.

When information is written-over, it is erased and can no longer be read
by the system. You can prevent the system from writing on a diskette by
using the write-protect tab located on the corner of the diskette.

PICTURE 29

Figure 2-4. The Write-Protect Tab on a 3-1/2 Inch Diskette

    To *prevent* data from being written on the diskette, slide the tab to
    uncover the protect slot.

    To *allow* data to be written on the diskette, slide the write-protect
    tab to *cover* the protect slot.

2.2.3 Operating the Diskette Drive Keylock

The diskette drive can only be accessed with the appropriate key. Consult
an authorized person to obtain designated keylock positions.

2.2.4 Using the Reference Diskette

The original Reference Diskette is a permanently write-protected diskette.
The system can *read* information from the diskette but it cannot *write*
(record) information onto the diskette.

Note: It is recommended that you use a backup copy of the reference
diskette, rather than the original. See your supervisor for information.

PICTURE 30

Figure 2-5. Inserting the Reference Diskette

To insert the Reference Diskette:

1. Make sure your terminal is powered-**OFF**

2. Insert the Reference Diskette, with the label up and metal-shutter end
    first, into the diskette drive. Make sure the diskette clicks into
    place.

3. Power the terminal ON and follow the instructions on the screen.

2.3 Adjusting Display Controls

All video displays have brightness and contrast controls that can be
adjusted for viewing comfort. Locate the display controls on your display
and rotate the knobs to achieve the brightness and contrast you want.

2.4 Using the Cash Drawer

Subtopics
2.4.1 Keylock Positions
2.4.2 Using the Cash Till

2.4.1 Keylock Positions

The cash drawer keylock has three positions: locked closed, manual
open/locked open, and operate (this position opens under program control).
Consult an authorized person at your store for information on these
functions.

The key is normally in the operate position during terminal operations and
can be removed in all three positions. Figure 2-6 shows the key
positions.

PICTURE 31

Figure 2-6. Cash Drawer Keylock Positions

2.4.2 Using the Cash Till

You can store documents under the cash till. Use the slot at the front of
the cash drawer as shown.

PICTURE 32

Figure 2-7. Using the Cash Drawer Slot

An adjustment bar lets you adjust the size of the document storage area as
shown in Figure 2-8.

PICTURE 33

Figure 2-8. Adjusting Document Storage Depth in the Cash Drawer

An optional till cover can be used with the cash till. This cover comes
with a keylock that is turned to the OPEN position and removed during
normal operation.

PICTURE 34

Figure 2-9. Till Cover

The cash till can be removed from the cash drawer.

To remove the cash till:

1. Open the cash drawer.

2. Grasp the front of the till with both hands and pull the till up
    towards you.

PICTURE 35

Figure 2-10. Removing the Cash Till

3. Lift up on the front of the till with both hands until you get a firm
    grip on it.

4. Lift the till clear of the cash drawer.

5. If you have a till cover, you can place it on the till and lock it if
    you wish.

To insert the cash till:

1. If your till has a locked cover, unlock and remove the till cover.

2. Hold the till with both hands and lower it into the cash drawer.

PICTURE 36

Figure 2-11. Inserting the Cash Till

3. Slide the till down into the cash drawer. Push the till into the
    drawer as far as it will go.

4. Make sure the till is seated correctly in the cash drawer to avoid
    damaging the till.

5. Close the cash drawer.

2.5 Using the Keyboard

The following sections show you how to use some functions of your
keyboard.

Note: The Enhanced Alphanumeric Keyboard does not have a manager's
keylock.

Subtopics
2.5.1 Reading the Keyboard Lights (Status Indicators)
2.5.2 Using the Manager's Keylock
2.5.3 Using System Function Keys

2.5.1 Reading the Keyboard Lights (Status Indicators)

Lights (status indicators) on the keyboard give you information about your
system. Three of the lights are labeled Wait, Offline, and Message
Pending; the fourth light is not labeled.

PICTURE 37

Figure 2-12. Keyboard Lights (Status Indicators) on the 50-Key Keyboard

The lights operate under program control. For information about how these
lights work on your system, refer to your store operating procedures or
consult an authorized person at your store. The following table explains
the typical use of these lights.

LIGHT	MEANING
Wait	When this light comes on, the application running on the terminal is waiting for an action to complete (for example, waiting for a program to load). The keyboard is **locked** and only system function requests are accepted. System function requests are entered using system function keys described in this topic.
Offline	When this light comes on, normal online operations have been interrupted, and you can display an offline message using system function keys. An offline message gives you information related to the offline condition.
Message Pending	When this light comes on, a system message is waiting to be displayed on the terminal, and can be displayed using system function keys.

2.5.2 Using the Manager's Keylock

The manager's keylock is used for special override functions determined by
your store procedures. The following figures show how to turn this
override function on and off using the manager's keylock. During normal
operations, this keylock is in the OFF position. The key cannot be
removed when it is in the ON position. The keylock operates in the same
manner for each keyboard.

On the 50-Key Keyboard and ANPOS keyboard, the manager's keylock is
located on the upper left side.

PICTURE 38

Figure 2-13. Manager's Keylock on the 50-Key Keyboard

On the Alphanumeric Keyboard and Combined Keyboard/Display, the manager's
keylock is located on the right side.

PICTURE 39

Figure 2-14. Manager's Keylock on the Alphanumeric Keyboard

On the Matrix Keyboard, the manager's keylock is located above the
keyboard lights (status indicators) on the upper right side.

PICTURE 40

Figure 2-15. Manager's Keylock on the Matrix Keyboard

2.5.3 Using System Function Keys

System function keys are used to enter system function requests. They
operate under program control. For information about how to use these
keys, refer to your store operating procedures or consult an authorized
person at your store.

On the 50-Key Keyboard and the Combined Keyboard/Display, the system
function keys are located on the right side of the keyboard. They are
labeled **S1** and **S2**.

PICTURE 41

Figure 2-16. System Function Keys on the 50-Key Keyboard

On the ANPOS Keyboard, the system function keys are located on the right
side of the keyboard as shown. You must hold the **Ctrl** key pressed and
then press **S1** or **S2** to enter system function requests that require S1 or
S2.

PICTURE 42

Figure 2-17. System Function Keys on the ANPOS Keyboard

On the Alphanumeric Keyboard, the system function keys are located on the
upper left side of the keyboard. The keys are labeled **F1** and **F2** on the
top and **S1** and **S2** on the front. You must hold the **Ctrl** key pressed and
then press **S1** or **S2** to enter system function requests that require S1 or
S2.

PICTURE 43

Figure 2-18. System Function Keys on the Alphanumeric Keyboard

On the Matrix Keyboard, the system function keys are located on the upper
right side of the keyboard. They are labeled **S1** and **S2**.

PICTURE 44

Figure 2-19. System Function Keys on the Matrix Keyboard

On the Enhanced Alphanumeric Keyboard, the **ESC** (escape) key in the upper
left corner of the keyboard functions as **S1**. The **Enter** key, on the right
side of the keyboard, functions as the **S2** key.

PICTURE 45

Figure 2-20. System Function Keys on the Enhanced Alphanumeric Keyboard

2.6 Using the Model 1 or Model 2 Point of Sale Printer

You can use the Model 1 or Model 2 point of sale printer with your IBM
4683 or 4684 Point of Sale terminal, and you can use a model of the IBM
Proprinters with your IBM 4684 Point of Sale terminal.

For instructions on using the IBM Proprinter, see the documentation that
was shipped with the printer.

The Model 1 or Model 2 point of sale printer has four buttons located on
the top of the printer. These buttons let you advance paper in the
journal station and the customer receipt station, open and close the
document insert station, or run tests on the printer.

Three of the buttons are visible when the printer cover is closed. The
fourth, the test button, is visible when the printer cover is opened. The
following sections show you how to use the buttons.

PICTURE 46

Figure 2-21. Model 1 or 2 Printer Buttons

Subtopics
2.6.1 Opening/Closing the Document Insert Station
2.6.2 Inserting Documents
2.6.3 Advancing the Journal Paper
2.6.4 Advancing the Customer Receipt
2.6.5 Tearing the Customer Receipt
2.6.6 Unlocking the Journal Cover
2.6.7 Testing the Model 1 or Model 2 Printer

2.6.1 Opening/Closing the Document Insert Station

The document insert station can be opened or closed under program control
or it can be operated manually using the document insert button.

The document insert station is normally open and ready for insertion of a
document.

1. Insert the document. (The following sections describe in detail how
    to insert documents.)

2. Press the **I** button to manually close the station.

    Note: Pressing the **I** button is not necessary if your printer has been
    programmed to close the document insert station automatically.

    Consult your store procedures for information on the correct method of
    operating the document insert station.

2.6.2 Inserting Documents

When you want to print on a check or form, insert the document into the
document insert station of the printer. You can insert the document from
the front or from the side. Consult your store procedures or authorized
personnel at your store for information on inserting documents. You can
insert documents fastened together provided the documents are not fastened
together on the right side of the document. See Appendix A in this book,
and the *IBM 4680 Store System: Planning and Configuration Guide Version 4*
for information on forms specifications.

Note: Do not insert a document with staples, metal inserts, or holes on
the area to be printed.

Subtopics
2.6.2.1 Inserting a Document from the Front
2.6.2.2 Inserting a Document from the Side

2.6.2.1 Inserting a Document from the Front

PICTURE 47

Figure 2-22. Inserting a Document from the Front

To insert a document from the front:

1. Insert the document from the front with the side to be printed facing
    you.

2. Push the document against the right wall of the insert station and
    forward until it comes to a stop.

3. Consult your store procedures or authorized personnel at your store
    for information on continuing and completing the document insert
    transaction.

2.6.2.2 Inserting a Document from the Side

Your store procedures or a message on your terminal display may tell you
which documents should be inserted from the side. Use the raised mark on
the side of the printer to help you line up documents.

PICTURE 48

Figure 2-23. Inserting a Document from the Side

To insert a document from the side:

1. Insert the document from the side, sliding it to the right as far as
    it can go.

2. Line up the document with the mark on the side of the printer
    according to your store procedures. Be sure to line up your document
    correctly; the first line of printing begins where the mark is
    located.

3. Press the document insert button marked **I** when the document is lined
    up correctly.

    Note: If the document needs to be adjusted after you have closed the
    document insert station, press the document insert button marked **I** and
    adjust the document. Press the button marked **I** again to close the
    document insert station.

4. Consult your store procedures or authorized personnel at your store
    for information on continuing and completing the document insert
    transaction.

2.6.3 Advancing the Journal Paper

To advance the journal paper:

1. Press the **III** button.

2. The journal roll advances one line each time you press the button or
    it continues to advance if you press and hold the button.

2.6.4 Advancing the Customer Receipt

To advance the customer receipt:

1. Press the **II** button.

2. The customer receipt advances one line each time you press the button
    or it continues to advance if you press and hold the button.

Note: If you have a document inserted in the document insert station,
pressing the **II** button will advance the document. Be sure to remove all
documents from the document insert station before pressing the **II** button
to advance the customer receipt.

2.6.5 Tearing the Customer Receipt

To tear off the customer receipt, pull the paper toward the front of the
printer (not toward the sides) and tear it against the tear bar.

PICTURE 49

Figure 2-24. Tearing the Customer Receipt

2.6.6 Unlocking the Journal Cover

Your terminal may have a keylock (optional) for securing the journal
cover. This keylock is located under the printer cover near the printer
buttons.

To unlock the journal cover:

1. Open the printer cover.

PICTURE 50

2. Insert the journal cover key into the journal keylock and turn it to
    the unlocked position.

PICTURE 51

3. Open the journal cover.

4. To lock the journal cover, reverse these steps. Be sure to remove the
    journal cover key. The printer cover will not close until the key is
    removed.

2.6.7 Testing the Model 1 or Model 2 Printer

The printer test button is located under the printer cover and can only be
used when the cover is open.

PICTURE 52

Figure 2-25. Printer Test Button and Printer Test Results

This button runs a test that lets you know the printer is working normally
and the print head is seated correctly. Use this button each time you
replace any paper, the ribbon cartridge, or the print head.

CAUTION:
For safety when running the printer test, make sure personal articles such
as ties, necklaces, or bracelets do not get caught in the moving print
head.

To run the printer test:

1. Lift the printer cover.

2. Press the **T** button.

3. A test begins that prints two lines of 36 characters in both stations.
    A quick visual scan will let you know if the printer is printing
    correctly.

4. Tear off the customer receipt paper before closing the cover.

|*2.7 Using the Model 3 Point of Sale Printer*

|You can use the Model 3 point of sale printer with your IBM 4683 or 4684
|Point of Sale terminal, and you can use a model of the IBM Proprinter with
|your IBM 4684 Point of Sale terminal.

|For instructions on using the IBM Proprinter, refer to the documentation
|that was shipped with the printer.

|The Model 3 point of sale printer has two buttons located on the top and
|three located on the front of the printer. These buttons are used to
|advance journal station paper, customer receipt station paper, or an
|inserted document. They are also used to run tests on the printer.

|The function of printer buttons will vary depending on the action the
|printer is performing. The basic function of each button is listed below.

|PICTURE 53

|**[1]** Journal Button

|**[2]** Customer Receipt Button

|**[3]** Ready Button (The green light next to the ready button
| comes ON when a document is inserted.)

|**[4]** Document Insert (DI) **Up** Button

|**[5]** Document Insert (DI) **Down** Button

|Figure 2-26. Model 3 Printer Buttons

 Subtopics
 2.7.1 Inserting Documents
 2.7.2 Aligning the Print Line on an Inserted Document
 2.7.3 Advancing the Customer Receipt
 2.7.4 Advancing the Journal Paper
 2.7.5 Unlocking the Journal Cover
 2.7.6 Testing the Model 3 Printer

|*2.7.1 Inserting Documents*

|When you want to print on a check or form, insert the document into the
|printer from the front or from the top. Consult your store procedures or
|authorized personnel at your store for information on inserting documents.
|Top fastening is recommended when inserting documents that are fastened
|together. See Appendix A in this book, and the *IBM 4680 Store System:*
|*Planning and Configuration Guide Version 4* for information on forms
|specifications.

|**Note:** Do not insert a document with staples, metal inserts, or holes on
|the area to be printed.

Subtopics
2.7.1.1 Inserting a Document from the Front
2.7.1.2 Inserting a Document from the Top

2.7.1.2 Inserting a Document from the Top

|*2.7.1.1 Inserting a Document from the Front*

|PICTURE 54

|Figure 2-27. Inserting a Partial Width Document

|PICTURE 55

|Figure 2-28. Inserting a Wide Document

|To insert a document from the front:

|1. With the side to be printed facing you, insert the document into the
| front of the document insert station until it stops.

| The pictures illustrate documents being inserted against the guide on
| the right side of the insert station, which is a common procedure.
| Consult your store's procedures for the correct way to insert your
| documents.

|2. When the light next to the ready button [3] comes ON:

| Press the ready button to move the document a preset number of
| lines into the printer.

| Press the DI **Up** button [4] to move the document into the printer
| one line at a time.

| **Note:** If the document is not inserted correctly, the DI **Down** button
| [5] to back the it out and then return to step 1 and begin again.

|3. Consult your store procedures or authorized personnel at your store
| for information on completing the document insert transaction.

|*2.7.1.2 Inserting a Document from the Top*

|PICTURE 56

|Figure 2-29. Inserting a Partial Width Document

|PICTURE 57

|Figure 2-30. Inserting a Wide Document

|To insert a document from the top:

|1. With the side to be printed facing you, insert the document into the
| top of the document insert station until it stops.

| The pictures illustrate documents being inserted against the guide on
| the right side of the journal station, which is a common procedure.
| Consult your store's procedures for the correct way to insert your
| documents.

|2. When the light next to the ready button [3] comes ON:

| Press the ready button to move the document a preset number of
| lines into the printer.

| Press the DI **Down** button [5] to move the document into the printer
| one line at a time.

| **Note:** If the document is not inserted correctly, the DI **Up** button [4]
| to back the it out and then return to step 1 and begin again.

|3. Consult your store procedures or authorized personnel at your store
| for information on completing the document insert transaction.

|*2.7.2 Aligning the Print Line on an Inserted Document*

|To align an inserted document:

| Press the ready button [3] to move the document a preset number of
| lines into the printer.

| **- or -**

| Press the DI **Up** button [4] or the DI **Down** button [5] to move the
| document into the printer one line at a time.

|*2.7.3 Advancing the Customer Receipt*

|To advance the customer receipt, press the customer receipt button [2].
|See topic 2.7.1.2.

|The customer receipt advances one line each time you press the button with
|the cover open or twelve lines each time you press the button with the
|cover closed. The customer receipt continues to advance if you press and
|hold the button with the cover open or closed.

|**Note:** If the document insert station is occupied, you will be able to
|advance the customer receipt paper but the printer will not print at the
|customer receipt station.

| *2.7.4 Advancing the Journal Paper*

| To advance the journal station, press the journal button [1]. See topic
| 2.7.1.2.

| The journal station advances one line each time you press the button with
| the cover open or twelve lines each time you press the button with the
| cover closed. The journal station continues to advance if you press and
| hold the button with the cover open or closed.

| **Note:** If the document insert station is occupied, you will be able to
| advance the journal paper but the printer will not print at the journal
| station.

|*2.7.5 Unlocking the Journal Cover*

|Your terminal may have a keylock (optional) for securing the journal
|cover. This keylock is located under the printer cover and to the right
|of the journal cover.

|**To unlock the journal cover:**

|1. Open the printer cover.

|2. Insert the journal cover key into the journal keylock (on the right
| side of the journal cover).

|3. Turn the key to the unlocked position.

|PICTURE 58

|4. Open the journal cover.

| To lock the journal cover, reverse these steps. Be sure to remove the
| journal cover key. The printer cover will not close until the key is
| removed.

2.7.6 Testing the Model 3 Printer

The printer test lets you know the printer is working correctly. It can only be run when the cover is open.

CAUTION:
For safety when running the printer test, make sure personal articles such as ties, necklaces, or bracelets do not get caught in the moving print head.

To run the printer test on the journal station:

1. Lift the printer cover.

2. Press and hold the ready button [3] and then press the journal button [1].

3. The test begins and prints 50 lines of 38 characters at the journal station.

    A quick visual scan will verify that the printer is printing correctly.

    You can stop the test at any point by pressing the ready button [3].

To run the printer test on the customer receipt station:

1. Lift the printer cover.

2. Press and hold the ready button [3] and then press the customer receipt button [2].

3. The test begins and prints 50 lines of 38 characters at the customer receipt station.

4. If necessary, tear off the customer receipt paper before closing the cover.

    A quick visual scan will verify that the printer is printing correctly.

    You can stop the test at any point by pressing the ready button [3].

Note: Pressing the ready button while the test is running will stop the test and cause the customer receipt paper cutter to cut the paper. This will verify that your cutter is functioning correctly.

To run the printer test on an inserted document:

1. Lift the printer cover.

2. Insert a blank document into:

        The top of the printer and move it into the printer by pressing the DI **Down** button [5].

        - or -

        The front of the printer and move it into the printer by pressing the DI **Up** button [4].

3. Press and hold the ready button [3] and then press:

        The DI **Up** button [4] to run the test and move the document out the top of the printer.

        - or -

        The DI **Down** button [5] to run the test and move the document out the front of the printer.

4. The test begins and prints 50 lines of 38 characters on the inserted document.

5. Remove the document from the printer by pressing:

        The DI **Up** button [4] to move the document out the top of the printer.

        - or -

        The DI **Down** button [5] to move the document out the front of the printer.

| A quick visual scan will verify that the printer is printing
| correctly.

| You can stop the test at any point by pressing the ready button [3].

|PICTURE 59

|**[1]** Journal Button

|**[2]** Customer Receipt Button

|**[3]** Ready Button (The green light next to the ready button
| comes ON when a document is inserted.)

|**[4]** Document Insert (DI) **Up** Button

|**[5]** Document Insert (DI) **Down** Button

|Figure 2-31. Model 3 Printer Buttons. Printer tests are run with the
| cover open.

|PICTURE 60

|Figure 2-32. Printer Test Pattern

| **[2]** Customer Receipt Button

2.8 Entering Data at Your Terminal

The following sections show you how to enter sales transaction data at
your terminal using your keyboard, scanners, magnetic stripe readers, or
other devices.

Subtopics
2.8.1 Entering Data with the Single-Track or Dual-Track Magnetic Stripe Reader
2.8.2 Entering Data with the Low-Profile Dual-Track Magnetic Stripe Reader
2.8.3 Entering Data with the Hand-Held Bar Code Readers
2.8.4 Entering Data with the Magnetic Wand Reader
2.8.5 Entering Data with the IBM Scanners

2.8.1 Entering Data with the Single-Track or Dual-Track Magnetic Stripe Reader

To enter data using the MSR:

1. Hold the credit card horizontally with the stripe at the bottom and
    facing you.

2. Place the card in the wide opening on the right end of the MSR.

3. With a steady, smooth motion, pass the card from the right side of the
    MSR to the left side through the reader.

4. The response you receive for an accepted read of the card is
    controlled by the application program. For example, you may receive no
    response.

5. The response you receive if the data was not accepted is also
    controlled by the application program. For example, you may receive a
    response such as a beep or a display message.

        If the data was not accepted, check to see if you used the correct
        position for the card. If you did not, turn the card to the
        correct position.

        Pass the card through the reader again with a steady, smooth
        motion.

PICTURE 61

Figure 2-33. Using the Magnetic Stripe Reader

2.8.2 Entering Data with the Low-Profile Dual-Track Magnetic Stripe Reader

If your Combined Keyboard/Display is equipped with an optional Magnetic
Stripe Reader, see "Entering Data with the Single-Track or Dual-Track
Magnetic Stripe Reader" in topic 2.8.1 for instructions on passing the
credit card or badge through the reader.

PICTURE 62

Figure 2-34. Entering Data with the Combined Keyboard/Display MSR

Cleaning the MSR: If you are using the MSR correctly and you get a large
number of misreads, you may need to clean the read head with an MSR
cleaning card. The cleaning card for the MSR must be ordered from your
IBM supplier or representative. See Appendix A for the order number of
the cleaning card. The MSR requires cleaning about every 10,000 passes.

To clean the magnetic stripe reader:

1. Locate the special cleaning card used with the MSR.

2. Hold the card in the correct position (see Figure 2-33 in
    topic 2.8.1).

3. Pass the card through the reader several times using a smooth, steady
    motion.

Testing the MSR: If you have cleaned your MSR and continue to get a large
number of misreads, you may need to test it. Consult an authorized person
at your store for information on testing the MSR.

Note: The procedure above applies to cleaning the MSR attached to the
Combined Keyboard/Display as well as the Single-Track and Dual-Track MSRs.

2.8.3 Entering Data with the Hand-Held Bar Code Readers

|PICTURE 63

|Figure 2-35. Hand-Held Bar Code Readers

To read the label on an item, do the following:

    Holding the item in one hand, put the bar code reader steadily over
    the UPC/EAN label so that it is square with the label. See
    Figure 2-37 in topic 2.8.5 to help you identify UPC/EAN labels. *Do
    not move the bar code reader from side to side*.

    Gently touch the reader to the label.

If you have used the bar code reader correctly, some action takes place at
your terminal. For example, the display may change, or the printer may
start printing.

If the reading was not successful:

    Check to see that the UPC/EAN label is not blocked by debris or
    ripped.

    Make sure the UPC/EAN label is perpendicular to the reader, and not
    angled sideways. The bars on the label should be in a vertical
    position for a successful reading.

2.8.4 Entering Data with the Magnetic Wand Reader

This device is only available with the 4683 terminal.

PICTURE 64

Figure 2-36. Magnetic Wand Reader

Pass the reader across the magnetic encoded label area on the ticket to
read the information on it. This action is called *wanding.*

To wand an item:

1. Place the ticket or item on a firm surface, if possible, to steady the
    ticket surface.

2. Place the tip of the reader on either end of the label to be read.
    (For 1-inch tickets, place the tip just off the edge of the ticket,
    near the end of the magnetic encoded area.)

3. Starting from the edge of the data, move the reader quickly over the
    full length of the data area, using a smooth, light, brushing action.
    Keep the reader upright and in contact with the data. You can wand in
    either direction.

4. Wand the full length of the data.

5. If you have used the wand correctly, some action takes place at your
    terminal. For example, your display may change or the printer may
    start printing.

If the wanding was not successful:

    Check the starting position of the wand.
    Move the wand smoothly and lightly over the full length of the data
    area.

If misreads continue, change the wand tip (P/N 1756864) and try again.

2.8.5 Entering Data with the IBM Scanners

IBM scanners read the universal product code (UPC) or European article
number (EAN) on items for purchase.

PICTURE 65

Figure 2-37. UPC/EAN Symbols

When you pass an item across the window of an IBM scanner, a beam of light
scans the symbol. The terminal decodes the data and passes it to the
store controller. The store controller looks up the code and finds the
item description and price (depending upon the application program that
your store is using). The data from the scan appears on your terminal
display and is printed on the customer receipt.

For information on operating the IBM scanners, refer to the documentation
that was shipped with your scanner.

2.9 Using the Dump Switch on the IBM 4683 or 4684

The dump switch is located behind the battery access cover on the terminal
base unit (4683), or at the rear of a the system unit (4684). If your
terminal has a security base, you may have to lift it up and slightly to
the side to remove the battery access cover.

Consult an authorized person at your store for more information about
using this switch.

3.0 Topic 3. Replacing Supplies on Your Terminal
This topic gives you step-by-step procedures for replacing the expendable
items and supplies used at your terminal. Stocking and replacing these
expendable items is the responsibility of the operator. Generally, these
tasks can be done easily and quickly.

Subtopics
3.1 Model 1 or 2 Printer -- Replacing the Customer Receipt Paper
3.2 Model 1 or 2 Printer -- Replacing the Journal Station Paper
3.3 Model 1 or 2 Printer -- Removing and Replacing the Print Head
3.4 Model 1 or 2 Printer -- Removing and Replacing the Printer Ribbon
3.5 Model 3 Printer -- Replacing the Customer Receipt Paper
3.6 Model 3 Printer -- Replacing the Journal Station Paper
3.7 Model 3 Printer -- Removing and Replacing the Printer Ribbon
3.8 IBM 4683 -- Replacing the Storage Retention Battery Pack
3.9 Keyboards -- Labeling the Keys on the Keyboards

3.1 Model 1 or 2 Printer -- Replacing the Customer Receipt Paper

The printer cannot sense when the customer receipt paper is low.
Therefore, you must check your paper roll often to avoid running out of
paper during a transaction. The customer receipt paper is running low
when the colored stripe on the paper begins to show.

1. Open the printer cover.

PICTURE 66

2. Remove the remaining parts of the old roll and discard.

    Note: Do not pull the customer receipt paper backward through the
    customer receipt station.

3. Get a new roll of paper and cut or tear the end of the paper loose
    from the roll.

4. Turn the paper roll so that the loose end of the paper comes up toward
    you from the bottom of the roll.

5. Hold the paper roll as shown and place it in the holder.

PICTURE 67

6. Pull out several inches of paper to work with.

7. Sharply fold back the leading edge of the paper (approximately 3 to 5
    inches).

PICTURE 68

8. Insert the folded edge of the paper between the blue roller and the
    narrow space just behind the tear bar. Be sure the paper is centered
    in the opening and that the left and right sides of the folded end are
    square with the opening. Push the paper downward until it stops.
    (Paper should not be seen coming out from below the tear bar.)

PICTURE 69

9. Press and hold the customer receipt advance button marked **II** until the
    paper feeds through the rollers and comes up behind the tear bar.

PICTURE 70

10. Make sure there is paper in both print stations.

11. Press the test button **T** to run the printer test to make sure that the
    paper is loaded correctly.

12. Tear off the cash receipt paper neatly against the tear bar.

    If the cash receipt paper is not torn off before you close the printer
    cover, it will feed down into the printer and you will have to open
    the printer cover to feed it correctly through the cover slot.

13. Close the printer cover.

3.2 Model 1 or 2 Printer -- Replacing the Journal Station Paper

A sensor in your terminal detects the end of the journal paper and gives
you an indication when there is no paper. Refer to your store procedures
to find out the type of indication you will receive.

1. Open the printer cover and the journal station cover. The journal
    cover will have to be unlocked if it has a keylock.

PICTURE 71

2. Gently push the print head to the left side of the printer.

3. Tear the journal paper between the platen and the take-up spool.

4. Hold the take-up spool flange (black wheel) as shown, rotate the paper
    toward the back of the printer, and pull it off the spool.

PICTURE 72

5. Remove the remaining parts of the old roll and discard them.

6. Get a new roll of paper and cut or tear the end of the paper loose
    from the roll.

7. Turn the paper roll so that the loose end of the paper comes up toward
    you from the bottom of the roll and fold the end of the paper from
    left to right as shown.

PICTURE 73

8. Put the paper roll in the holder and pull out several inches of paper
    to work with.

9. Point the leading edge of the paper down between the printer wall and
    the small blue roller just behind the wall. Be sure the paper is
    centered in the opening and that the left and right sides of the paper
    above the folded edge are square with the opening.

PICTURE 74

10. Put your fingers behind the paper and hold it against the back of the
    wall.

11. Use your fingers to repeatedly slide the paper downward until it loops
    underneath and reappears in front.

PICTURE 75

12. Pull the paper straight up and toward you about 8 inches.

13. Sharply re-fold the leading edge of the paper back approximately 1 to
    2 inches as shown.

PICTURE 76

14. Pull the paper above and over the top of the take-up spool.

15. Slip the folded edge of the paper under the holding-tab on the take-up
    spool.

Turn the take-up spool toward the back of the printer to take the
slack out of the paper. Push the paper to the left to keep the edge
even as it begins to loop around the take-up spool.

PICTURE 77

16. When the paper is wound snugly around the spool, press and hold the
    journal paper advance button marked **III** for a few seconds.

17. Make sure there is paper in both print stations.

18. Press the test button **T** to run the printer test to make sure that the
    paper is loaded correctly.

19. Tear off the cash receipt paper neatly against the tear bar.

    If the cash receipt paper is not torn off before you close the printer
    cover, it will feed down into the printer and you will have to open
    the printer cover to feed it correctly through the cover slot.

20. Close the printer cover.

3.3 Model 1 or 2 Printer -- Removing and Replacing the Print Head

If your printer is printing characters incorrectly, the print head may
need to be replaced. The following topics describe how to replace the
print head. If you have an IBM service contract, you may contact IBM for
service.

Subtopics
3.3.1 Removing the Print Head
3.3.2 Replacing the Print Head

3.3.1 Removing the Print Head

1. Switch **POWER OFF** at the point of sale terminal.

2. Open the printer cover.

PICTURE 78

3. Hold the print head against the ribbon with your left hand.

PICTURE 79

4. Remove the ribbon cartridge. See "Removing the Ribbon" in
    topic 3.4.1.

5. Unplug the print head cable by pulling straight up on the handle at
    the end of the cable.

PICTURE 80

6. Move the print head latch to the left to release the slender rod on
    the right side of the assembly.

7. Rotate the print head so the rod is above the latch and lift the print
    head out of the printer.

PICTURE 81

3.3.2 Replacing the Print Head

1. Switch **POWER OFF** at the point-of-sale terminal.

2. Discard the old print head and get a new one.

3. Put the slender rod on the left of the print head assembly into the
    slot on the print head carrier.

4. Rotate the print head until the rod on the right side of the print
    head locks into place under the print head latch.

PICTURE 82

5. Lay the print head cable into place and plug it in by placing the
    cable prongs into the connector and pressing straight down.

PICTURE 83

6. Replace the ribbon cartridge. See "Replacing the Ribbon" in
    topic 3.4.2.

7. Move the print head forward so that it presses against the ribbon.

8. Move the blue tab on the print head toward you and to the left, and
    release it so it is behind the metal post on the print head. Make
    sure the print head is held toward the platen by the spring tension of
    the blue tab. The printer will not function if the print head is not
    in position.

PICTURE 84

9. Switch power **ON** at the point of sale terminal terminal.

10. Make sure there is paper in both print stations.

11. Press the test button **T** to run the printer test to make sure that the
    printer is operating correctly.

12. Tear off the cash receipt paper neatly against the tear bar.

    If the cash receipt paper is not torn off before you close the printer
    cover, it will feed down into the printer and you will have to open
    the printer cover to feed it correctly through the cover slot.

13. Close the printer cover.

3.4 Model 1 or 2 Printer -- Removing and Replacing the Printer Ribbon

The printer ribbon cartridge mounts inside the printer near the front and
is stationary. You may need to replace the ribbon cartridge if printed
characters come out very light instead of sharp and clear.

Note: Use printer ribbon cartridge IBM P/N 4483015 (black), IBM P/N
1040247 (purple), or equivalent. Failure to do so may affect print head
life and print quality.

Subtopics
3.4.1 Removing the Ribbon
3.4.2 Replacing the Ribbon

3.4.1 Removing the Ribbon

1. Open the printer cover.

PICTURE 85

2. Unlatch the print head by pulling the blue tab on the assembly toward
    you and to the right, and slowly releasing it. The print head moves
    away from the ribbon.

    Note: The blue tab on the print head may feel fragile, but it is
    quite strong and is not easily damaged under normal use.

PICTURE 86

3. Remove the old ribbon cartridge by grasping the ribbon cartridge on
    each side of the print head with both hands and pulling up firmly
    until the cartridge is free.

PICTURE 87

3.4.2 Replacing the Ribbon

1. Discard the old cartridge and get a new one. Rotate the ribbon feed
    knob clockwise to take up any slack in the ribbon. The knob is
    located on the top right side of the ribbon cartridge.

PICTURE 88

2. Line up the groove in the front center of the ribbon cartridge with
    the projection on the inside of the printer.

PICTURE 89

3. Press both ends of the ribbon cartridge straight down while rotating
    the ribbon feed knob clockwise until the cartridge snaps into place.

PICTURE 90

4. Make sure the ribbon is between the print head and the two ribbon
    guides as shown.

PICTURE 91

5. Move the print head forward so that it presses against the ribbon.

6. Move the blue tab on the print head toward you and to the left, and
    release it so it is behind the metal post on the print head. Make
    sure the print head is held toward the platen by the spring tension of
    the blue tab. The printer will not function if the print head is not
    in position.

PICTURE 92

7. Make sure there is paper in both print stations.

8. Press the test button **T** to run the printer test to make sure that the
    ribbon is seated correctly.

9. Tear off the cash receipt paper neatly against the tear bar.

    If the cash receipt paper is not torn off before you close the printer
    cover, it will feed down into the printer and you will have to open
    the printer cover to feed it correctly through the cover slot.

10. Close the printer cover.

|*3.5 Model 3 Printer -- Replacing the Customer Receipt Paper*

|**1.** Open the printer cover, remove the remaining paper and parts of the
| old paper roll, and discard them.

| **Note:** Do not pull the paper backward through the customer receipt
| station.

|**2.** Get a new roll of paper, release the paper-end from the roll, and pull
| out several inches of paper to work with as shown.

| PICTURE 93

|**3.** Put the paper roll into the customer receipt station holder.

| PICTURE 94

|**4.** Insert the edge of the paper between the rolls at the top of the
| customer receipt station. Ensure the paper is centered in the
| opening.

| PICTURE 95

|**5.** Push the paper down until it stops.

| The printer cover has been removed to accommodate this view from the
| rear of the printer showing the correct placement of paper in the
| customer receipt station.

| PICTURE 96

|**6.** Move the customer receipt lever toward you.

| PICTURE 97

|**7.** Press and hold the customer receipt button as shown until the paper
| feeds through rollers and arrives at the paper cutter.

| PICTURE 98

|**8.** Move the customer receipt lever away from you.

| PICTURE 99

|**9.** Press the customer receipt button again until several inches of paper
| have advanced through the paper cutter.

| PICTURE 100

|**10.** Run the printer test to ensure the paper is loaded correctly.

| To start the test, press and hold button [3] and then press button
| [2].

| To stop the test, press button [3].

| PICTURE 101

|**11.** Tear off the receipt paper (if necessary) and close the printer cover.

|PICTURE 102

|*3.6 Model 3 Printer -- Replacing the Journal Station Paper*

|**1.** Open the printer cover and the journal station cover. The journal
| cover will have to be unlocked if it has a keylock.

| PICTURE 103

|**2.** Tear the journal paper between the platen and the take-up spool.

|**3.** Lift the spool out of the printer and remove the paper from it.

|**4.** Remove the remaining paper and parts of the old paper roll and discard
| them.

| **Note:** Do not pull the paper backward through the journal station.

| PICTURE 104

|**5.** Get a new roll of paper, release the paper-end from the roll, and pull
| out several inches of paper to work with as shown.

| PICTURE 105

|**6.** Put the paper roll into the journal station holder.

| PICTURE 106

|**7.** Insert the edge of the paper between the rolls at the top of the
| journal station. Ensure the paper is centered in the opening.

| PICTURE 107

|**8.** Push the paper downward until it stops.

| The printer cover has been removed to accommodate this view from the
| rear of the printer showing the correct placement of paper in the
| journal station.

| PICTURE 108

|**9.** Move the journal station lever toward you.

| PICTURE 109

|**10.** Press and hold the journal button as shown until the paper feeds
| through rollers and appears at the front of the journal station.

| PICTURE 110

|**11.** Move the journal station lever away from you.

| PICTURE 111

|**12.** Press the journal button again until several inches of paper advance.

| PICTURE 112

|**13.** Attach the paper to the journal station take-up spool.

| PICTURE 113

|**14.** Wind the paper around the journal station take-up spool two turns in
| the direction shown.

| PICTURE 114

|**15.** Ensure that the journal station signature ledge [1] is upright, and
| put the spool back into the journal station.

| PICTURE 115

|**16.** Run the printer test to ensure the paper is loaded correctly.

| To start the test, press and hold button [3] and then press button
| [1].

| To stop the test, press button [3].

| PICTURE 116

|**17.** Lock the journal station (if required) and close the printer cover.

|PICTURE 117

| 3.7 *Model 3 Printer -- Removing and Replacing the Printer Ribbon*

| The printer ribbon cartridge mounts inside the printer near the front and
| is stationary. You may need to replace the ribbon cartridge if printed
| characters come out very light instead of sharp and clear.

| **Note:** Use printer ribbon cartridge IBM P/N 1040888 (black), IBM P/N
| 1040875 (purple), IBM P/N 1040900 (black auto-inking), or equivalent.
| Failure to do so may affect print head life and print quality.

Subtopics
3.7.1 Removing the Ribbon
3.7.2 Replacing the Ribbon

|*3.7.1 Removing the Ribbon*

|**1.** Open the printer cover.

|**2.** Unlatch the printer ribbon holder from the print head by squeezing the
| tabs on either side of the print head.

|PICTURE 118

|**3.** Lift the ribbon holder up as shown.

|PICTURE 119

|**4.** Release the ribbon cartridge by lifting up as shown.

|PICTURE 120

|**5.** Lift the ribbon cartridge from the printer as shown.

|PICTURE 121

|*3.7.2 Replacing the Ribbon*

|**1.** Discard the old cartridge and get a new one.

|**2.** Release the ribbon holder from the ribbon cartridge by squeezing the
| ribbon holder tabs and lifting the ribbon holder up as shown.

|PICTURE 122

|**3.** Set the ribbon cartridge into the printer as shown. Press the side of
| the ribbon cartridge nearest you down into the printer until it clicks
| into place.

|PICTURE 123

|**4.** Press the ribbon holder onto the print head until it clicks into
| place.

|PICTURE 124

|**5.** Press the side of the ribbon cartridge furthest away from you down
| into the printer until it clicks into place. Turn the ribbon feed
| knob clockwise to take up any slack in the ribbon. The knob is
| located on the right side of the ribbon cartridge.

|PICTURE 125

3.8 IBM 4683 -- Replacing the Storage Retention Battery Pack

This procedure applies only to the 4683-*xx*1 terminal. The storage
retention battery pack is located behind the battery access cover on the
side of the 4683 base unit. This battery supplies power to terminal
storage for up to 15 minutes when there is a power failure.

Note: The storage retention battery is a nickel-cadmium battery. Dispose
of defective batteries according to your local government regulations.

PICTURE 126

Figure 3-1. Replacing the Storage Retention Battery Pack on the 4683-xx1

1. Remove the battery access cover and locate the battery pack.

    Note: If the optional security plate is installed on your terminal,
    lift the security base up and to the side before raising the battery
    access cover.

2. Lift the battery pack out and unplug it.

3. Plug in the new battery pack and put it in place.

4. Replace the battery access cover.

PICTURE 127

Figure 3-2. Storage Retention Battery Pack on the 4683-xx1

Note: You will need to leave your terminal powered on for 14 hours in
order for the new battery to fully charge.

3.9 Keyboards -- Labeling the Keys on the Keyboards

Subtopics
3.9.1 50-Key Keyboard and Combined Keyboard/Display

3.9 Keyboards -- Labeling the Keys on the Keyboards

Subtopics
3.9.1 50-Key Keyboard and Combined Keyboard/Display

3.9.1 50-Key Keyboard and Combined Keyboard/Display

Except for the system function keys, all key functions on the 50-key
keyboard and the Combined Keyboard/Display can be relocated and the keys
re-labeled to suit your store needs. The two system function keys have
fixed functions that cannot be changed. All keys except the numeric
keypad keys are covered by a transparent lens cap that can be removed when
you change key labels or combine keys.

A kit that comes with your keyboard contains items that you use when
changing keybuttons, lens caps, or labels. A keybutton/lens cap removal
tool included with your kit lets you remove keybuttons or lens caps
according to your store needs. Figure 3-3 shows you how to remove
keybuttons.

Note: Make sure your terminal is powered **OFF** before removing keybuttons.

PICTURE 128

Figure 3-3. Removing Keybuttons (50-Key Keyboard and Combined
          Keyboard/Display)

To install or change labels, use the keybutton removal tool to lift the
clear lens cap from the top of the keybutton. Insert the label in the
lens cap. Press the lens cap back on the keyboard (see Figure 3-4).

PICTURE 129

Figure 3-4. Installing/Changing Labels (50-Key Keyboard and Combined
          Keyboard/Display)

When you want to make a vertical column of keys inactive, remove the lens
caps from the column and replace them with the vertical shield that comes
with your kit (see Figure 3-5).

PICTURE 130

Figure 3-5. Using a Vertical Shield (50-Key Keyboard and Combined
          Keyboard/Display)

You can replace two single keys with a double-key lens cap to create a
larger key for high activity items. You can also replace some key lenses
with elevated key lenses. The kit that comes with your keyboard will
contain the double-key and elevated lens caps.

Figure 3-6 shows how to create a double elevated key by placing a double
lens cap over two single keys. Place the double lens cap over two single
keys and press down on the double lens cap until it snaps into place.

PICTURE 131

Figure 3-6. Creating Double Keys (50-Key Keyboard)

Alphanumeric Keyboard: The function keys can be re-labeled to suit your
store needs. The two system function keys (S1 and S2) have fixed
functions that cannot be changed. The function keys may be covered by a
transparent lens cap that can be removed when you change key labels.

A kit that comes with your keyboard contains items that you use when
changing keybuttons, lens caps, or labels. A keybutton/lens cap removal
tool included with your kit lets you remove keybuttons or lens caps
according to your store needs. Figure 3-7 shows you how to remove
keybuttons with the keybutton removal tool.

Note: Make sure your terminal is powered **OFF** before removing keybuttons.

PICTURE 132

Figure 3-7. Removing Keybuttons (Alphanumeric Keyboard)

To install or change labels, use the keybutton removal tool to lift the
clear lens cap from the top of the keybutton. Insert the label in the
lens cap. Press the lens cap back on the keyboard. (See Figure 3-8).

PICTURE 133

Figure 3-8. Installing/Changing Labels (Alphanumeric Keyboard)

Matrix Keyboard: The matrix keyboard has 126 blank keys that can be
programmed and labeled to meet the needs of your store. Three blank paper
overlays and one plastic protective overlay come with the keyboard. After
the paper overlay is labeled with the key function, place the plastic
overlay on top of the paper overlay to protect it; then place both
overlays on the keyboard. For information on labeling the paper overlays,
refer to your store procedures.

You can relocate the keys on the numeric keypad of the matrix keyboard. A
keybutton removal tool can be ordered that is used to change the location
of these keys. (See Appendix A for ordering information.)

Note: Make sure your terminal is powered **OFF** before removing keybuttons.

Enhanced Alphanumeric Keyboard: Refer to the documentation shipped with
your keyboard for information on replacing keybuttons on the Enhanced
Alphanumeric Keyboard.

A.0 Appendix A. Expendable Supplies and Replaceable Parts

This appendix describes expendable supplies and replaceable parts, and
identifies how to order them.

Subtopics
A.1 How to Order Expendable Supplies
A.2 How to Order Customer-Replaceable Parts

|*A.1 How to Order Expendable Supplies*

|In the U.S., order expendable supplies from IBM Direct, telephone
|800-IBM-2468. In IBM World Trade countries, order from IBM Direct if it
|is available in your country. If IBM Direct is not available in your
|country, order through your IBM Marketing Representative or your dealer.

Table A-1. Expendable Supplies

Item	IBM Part Number
Ribbon Cartridges (Point of Sale Printer Model 1 or 2)	4483015 (black ink) 1040247 (purple ink)
Ribbon Cartridges (Point of Sale Printer Model 3)	1040888 (black ink) 1040875 (purple ink) 1040900 (black Auto-Inking (*)
Roll Paper (Point of Sale Printer Model 1, 2, or 3)	432767 (1 Case, 50 Rolls per Case)
5-1/4 inch - Type 2HC Diskettes (IBM Personal Computer AT)	6109660 (Box of 10)
5-1/4 inch - Type 2D Diskettes (IBM Personal Computer AT)	6023450 (Box of 10)
3-1/2 inch - 2.0 Mb High Density Diskettes (IBM Personal System/2)	6404078 (Box of 10)

Subtopics
A.1.1 Ribbon Cartridge for Point of Sale Printer Model 1, 2, or 3
A.1.2 Ribbons for a Store Controller or 4684 System Printer
A.1.3 Roll Paper for Point of Sale Printer Model 1, 2, or 3
A.1.4 Additional Forms for Point of Sale Printer Model 1 or 2
A.1.5 Additional Forms for Point of Sale Printer Model 3
A.1.6 Paper for a Store Controller or 4684 System Printer

A.1.1 Ribbon Cartridge for Point of Sale Printer Model 1, 2, or 3

A ribbon cartridge is shipped with the printer cable. Replacement ribbon
cartridges are available, that the salesperson can install. You should
maintain a supply of spare ribbon cartridges at each store.

Note: Use the IBM printer ribbons listed in Table A-1 in topic A.1 or
other equivalent ribbons that use dye-based ink. The use of
carbon-particle ribbons or other ribbons that are not equivalent to the
IBM ribbons will affect print head life and print quality.

|A.1.2 Ribbons for a Store Controller or 4684 System Printer

|If you plan to have a printer attached to the store controller, you should
|have spare ribbons available. Refer to the documentation for your printer
|for the ribbon part number.

|*A.1.3 Roll Paper for Point of Sale Printer Model 1, 2, or 3*

|Two rolls of paper are shipped with the printer cable. One for the
|journal print station and the other for the document insert/customer
|receipt station. For additional rolls, you can order the IBM part numbers
|listed in Table A-1 in topic A.1 or equivalent. Both print stations use
|standard adding machine roll paper. The roll paper must meet the
|specifications in the following table.

```
+-----------------------------------------------------------------------+
|¦ Table  A-2. Specifications - Roll Paper for Point of Sale Printers    ¦
+-------------------------------------------------------------------------|
|¦ Width       ¦ 69.85 +0.5 mm -0.76 mm (2.75 +0.02 in. -0.03 in.)      ¦
|¦             ¦ The maximum the core may protrude on either side is     ¦
|¦             ¦ 0.76 mm (0.030 in.).                                    ¦
+-------------+-----------------------------------------------------------|
|¦ Outside     ¦ 89 mm (3.5 in.) Maximum (Model 1 or 2)                  ¦
|¦ Diameter    ¦ 81 mm (3.2 in.) Maximum (Model 3)                       ¦
+-------------+-----------------------------------------------------------|
|¦ Thickness   ¦ 0.076 ±10% (0.003 ±10%)                                 ¦
+-------------+-----------------------------------------------------------|
|¦ Weight      ¦ 61 grams/m² (16 lb)                                     ¦
+-------------+-----------------------------------------------------------|
|¦ Grade       ¦ Service or High Grade (Economy or Bond)                 ¦
+-------------+-----------------------------------------------------------|
|¦ Attachment  ¦ The inner end of the roll must be secured by a          ¦
|¦             ¦ reverse-tuck-start with a 19 mm (0.75 in.) maximum fold ¦
|¦             ¦ back.  Paper must not be attached to the core in any    ¦
|¦             ¦ way.                                                    ¦
+-------------+-----------------------------------------------------------|
|¦ Splices     ¦ There must be no splices within the paper roll.         ¦
+-------------+-----------------------------------------------------------|
|¦ Marking     ¦ There must be dye stripes on the paper beginning 122    ¦
|¦             ¦ ±15 cm (48 ±6 in.) from the inner end of the roll and   ¦
|¦             ¦ extending to within 30 cm (12 in.) of the end of the    ¦
|¦             ¦ roll.                                                   ¦
+-------------+-----------------------------------------------------------|
|¦ Core        ¦ Core material and center hole diameter are optional.    ¦
+-----------------------------------------------------------------------+
```

|A.1.4 *Additional Forms for Point of Sale Printer Model 1 or 2*

|The use of printed forms at the document insert station is optional. The
|following specifications apply to forms that may be used at the document
|insert station.

```
+------------------------------------------------------------------------------+
|¦ Table  A-3. Specifications - Document Insert Forms                           |
+------------------------------------------------------------------------------|
|¦   Paper - Size    ¦  Single-Part Form -  216 mm x 330 mm (8.5 in. x 13 in.)  |
|¦                   ¦                      is the recommended maximum.         |
|¦                   ¦                                                          |
|¦                   ¦                      69.9 mm x 152.4 mm (2.75 x 6 in.)   |
|¦                   ¦                      is the recommended minimum.         |
|¦                   ¦                                                          |
|¦                   ¦                      69.9 mm x 82.5 mm (2.75 in. x 3.25 in.)  |
|¦                   ¦                      is the minimum single-part form that |
|¦                   ¦                      can be used but it will only allow  |
|¦                   ¦                      approximately 3 lines of printing.  |
|¦                   ¦                                                          |
|¦                   ¦  Multipart Form   -  216 mm x 330 mm (8.5 in. x 13 in.)  |
|¦                   ¦                      is the recommended maximum.         |
|¦                   ¦                                                          |
|¦                   ¦                      82.5 mm x 187.3 mm (3.25 in. x 7.37 in.)  |
|¦                   ¦                      is the recommended minimum.         |
+-------------------+----------------------------------------------------------|
|¦   Tab Card - Size ¦  82.5 mm x 123.2 mm (3.25 in. x 4.85 in.)                |
|¦                   ¦                                                          |
|¦           Weight  ¦  57 to 90 grams/m² (15 to 24 lb) Paper or Tab Card Stock |
|¦                   ¦                                                          |
|¦        Thickness  ¦  0.0762 mm (0.003 in.) paper to 0.2 mm (0.008 in.)       |
|¦                   ¦  Ledger Card Stock Maximum (uncoated card stock only)    |
+------------------------------------------------------------------------------+
```

Subtopics
A.1.4.1 Multipart Forms for Point of Sale Printer Model 1 or 2

A.1.4.1 Multipart Forms for Point of Sale Printer Model 1 or 2

Multipart forms may be used in the document insert station. The maximum form thickness is 0.47 mm (0.0185 in.)

Top fastening is recommended on all forms regardless of size. Fastening is permitted on the left side of forms that are a minimum of 101.6 mm (4 in.) wide. Fastening on the right side is not permitted. Fastening must not extend more than 19.05 mm (.75 in.) from the top, bottom, or left edge of a form.

When bottom fastening is used, printing must start at least 63.5 mm (2.5 in.) from the fastening to help eliminate potential document feeding problems.

Note: No staples or metal inserts may be used on any area of the form that is inserted in the machine. No holes or openings are allowed on the form or its fastening. Forms with pre-printed lines or boxes located in areas to be printed can be used. However, the accuracy of printing between lines or in the boxes depends on the positioning of the document by the operator.

| A.1.5 Additional Forms for Point of Sale Printer Model 3

| The following specifications apply to forms that may be used for document
| insertion.

```
+-------------------------------------------------------------------------------+
|¦ Table  A-4. Specifications - Document Insert Forms                            ¦
+-------------------------------------------------------------------------------¦
|¦   Paper - size    ¦   Single-part form -  216 mm x 330 mm (8.5 in. x 13 in.)  ¦
|¦                   ¦                       is the recommended maximum.         ¦
|¦                   ¦                                                           ¦
|¦                   ¦                       82.5 mm x 69.9 mm (3.25 x 2.75 in.) ¦
|¦                   ¦                       is the recommended minimum.         ¦
|¦                   ¦                                                           ¦
|¦                   ¦                       69.9 mm (2.75 in.)                  ¦
|¦                   ¦                       is the minimum width for check franking. ¦
|¦                   ¦                                                           ¦
|¦                   ¦   Multipart Form  -  216 mm x 330 mm (8.5 in. x 13 in.)   ¦
|¦                   ¦                       is the recommended maximum.         ¦
|¦                   ¦                                                           ¦
|¦                   ¦                       82.5 mm x 69.9 mm (3.25 in. x 2.75 in.)  ¦
|¦                   ¦                       is the recommended minimum.         ¦
+-------------------------------------------------------------------------------+
```

Subtopics
A.1.5.1 Multipart Forms for Point of Sale Printer Model 3

A.1.5.1 Multipart Forms for Point of Sale Printer Model 3

Multipart forms may be used for document insertion. The maximum form
thickness is 0.47 mm (0.0185 in.) when inserted into the front of the
printer and 0.25 mm (0.010 in.) when inserted into the top of the printer.
The front sheet should not exceed 0.08 mm (0.003 in.) in thickness and if
the multipart form contains card stock, the card stock must be the last
copy and not exceed 0.2 mm (0.008 in.) in thickness. Also, the sheets of
a multipart form should be the same size, not uneven or stepped.

Forms handling works best if the binding or glued edge of the form goes
into the printer first. On all inserted forms, regardless of size, top or
bottom binding (glued edge) is recommended depending on whether the
document is inserted in the top or the front of the printer. When forms
are inserted bind-edge-first, significantly less form damage and jamming
occur.

    If multipart forms are inserted other than binding first, they can
    curl and separate. This is especially true when the edge of the form
    opposite the binding is uneven or stepped. When the form curls and
    separates, it can catch inside the printer, get crumpled, and jam.
    This causes lost time for the operator and terminal operations.

We suggest that information about how to insert a form into the printer be
printed on the top of form. We also suggest that when printing on an
inserted form, the printing be done on a blank section of the form. If
printing is done inside boxes on the form, the boxes should be three
characters high and the margins should be three characters wide to allow
for printer tolerances and operator variances.

If it becomes necessary to print on a damaged form, the printer works best
if the damaged part of the form remains outside the printer. Once the
form is in place the operator can tell the application to print on the
form by pressing the application's "print" key.

No staples or metal inserts should be used on any area of the forms that
are inserted in the machine and no holes or openings are allowed on the
forms or their fastening.

A.1.6 Paper for a Store Controller or 4684 System Printer

If you plan to have a system unit printer attached to the store controller
or 4684, you should plan to have a supply of paper. Refer to the
documentation for your printer to determine the type and size of paper to
use.

|*A.2 How to Order Customer-Replaceable Parts*

|In the U.S., see your IBM Marketing Representative or your dealer for the
|address to order these parts. In World Trade countries, order from IBM
|Direct if it is available in your country. If IBM Direct is not available
|in your country, order through your IBM Marketing Representative or your
|dealer.

|**Note:** Replaceable parts identified for the MSR are also for the
|dual-track MSR and the low-profile dual-track MSR.

Table A-5. Customer-Replaceable Parts	
Item	**Reorder Number**
Battery Pack for 4683-*xx*1	IBM P/N 4783928 (or Equivalent)
Cash Till with Fixed Bill Dividers (Without Cover)	IBM P/N 4783879
Cash Till with Adjustable Bill Dividers (Without Cover)	IBM P/N 4783880
Cash Till Cover with Lock and Keys	IBM P/N 6316718
Print Head for Point of Sale Printer Model 1	IBM P/N 4483100 - or - IBM P/N 25F6405
Print Head for Point of Sale Printer Model 2	IBM P/N 25F6405
Replacement Tip for the Magnetic Wand Reader	IBM P/N 1756864
Test Card for the Single-Track MSR (One shipped with each MSR)	IBM P/N 4055210
Test Card for the Dual-Track MSR (One shipped with each MSR) **Note:** The Single-Track MSR can also be tested with this card.	IBM P/N 90X9640
Cleaning Card for MSRs	IBM P/N 6019483
Wrap Kit	IBM P/N 96X5047
4684 Wrap Plug	IBM P/N 96X4974
4684 Terminator Plug	IBM P/N 96X4975
4684 Baseband Network Cable Adapter	IBM P/N 96X5037

Subtopics
A.2.1 Customer-Replaceable Parts (50-Key Keyboard or Combined Keyboard/Display)
A.2.2 Customer-Replaceable Parts (Alphanumeric Keyboard)
A.2.3 Customer-Replaceable Parts (ANPOS Keyboard)
A.2.4 Customer-Replaceable Parts (Matrix Keyboard)
A.2.5 Customer-Replaceable Parts (Enhanced Alphanumeric Keyboard)

| A.2.1 Customer-Replaceable Parts (50-Key Keyboard or Combined Keyboard/Display)

Table A-6. Preprinted Label Sheets (50-Key Keyboard or Combined Keyboard/Display)

Item	Reorder Number
Preprinted Keybutton Label Sheets (U.S. English)	IBM P/N 6316691
Preprinted Keybutton Label Sheets (Canadian English)	IBM P/N 6316691
Preprinted Keybutton Label Sheets (Canadian French)	IBM P/N 6316702
Preprinted Keybutton Label Sheets (Spanish)	IBM P/N 6316700
Preprinted Keybutton Label Sheets (Swedish)	IBM P/N 6316697
Preprinted Keybutton Label Sheets (Norway)	IBM P/N 6316698
Preprinted Keybutton Label Sheets (Dutch)	IBM P/N 6316696
Preprinted Keybutton Label Sheets (Danish)	IBM P/N 6316695
Preprinted Keybutton Label Sheets (Spanish)	IBM P/N 6317000
Preprinted Keybutton Label Sheets (Italian)	IBM P/N 6316699
Preprinted Keybutton Label Sheets (French)	IBM P/N 6316693
Preprinted Keybutton Label Sheets (German)	IBM P/N 6316692
Preprinted Keybutton Label Sheets (U.K. English)	IBM P/N 6316694

Table A-7. Blank Label Sheets (50-Key Keyboard or Combined Keyboard/Display)

Item	Reorder Number
Blank Label Sheets (white)	IBM P/N 63X5179
Blank Label Sheets (yellow)	IBM P/N 63X5180
Blank Label Sheets (red)	IBM P/N 63X5181
Blank Label Sheets (blue)	IBM P/N 63X5182
Blank Label Sheets (green)	IBM P/N 63X5183
Blank Label Sheets (tan)	IBM P/N 63X5184

Table A-8. Keybuttons, Lenses, and Other Devices (50-Key Keyboard or Combined Keyboard/Display)

Item	Height	Package Quantity	Reorder Number
Single Lens	Standard	50	IBM P/N 63X5169
Double Lens	Standard	25	IBM P/N 63X5170
Single Lens	Raised	25	IBM P/N 63X5171
Double Lens	Raised	25	IBM P/N 63X5172
Single Keybutton	Raised	25	IBM P/N 63X5173
Key Shield		10	IBM P/N 63X5174
Keybutton Removal Tool		3	IBM P/N 63X5175

A.2.2 Customer-Replaceable Parts (Alphanumeric Keyboard)

```
+----------------------------------------------------------------------+
|¦ Table  A-9. Preprinted Label Sheets (Alphanumeric Keyboard)         ¦
+----------------------------------------------------------------------¦
|¦ Item                                        ¦ Reorder Number        ¦
+---------------------------------------------+------------------------¦
|¦ Preprinted Keybutton Label Sheets (U.S. English)   ¦ IBM P/N 76X0060 ¦
+---------------------------------------------+------------------------¦
|¦ Preprinted Keybutton Label Sheets (Canadian French) ¦ IBM P/N 76X0051 ¦
+---------------------------------------------+------------------------¦
|¦ Preprinted Keybutton Label Sheets (Spanish)   ¦ IBM P/N 76X0052 ¦
+---------------------------------------------+------------------------¦
|¦ Preprinted Keybutton Label Sheets (Swedish)   ¦ IBM P/N 76X0067 ¦
+---------------------------------------------+------------------------¦
|¦ Preprinted Keybutton Label Sheets (Norway)    ¦ IBM P/N 76X0055 ¦
+---------------------------------------------+------------------------¦
|¦ Preprinted Keybutton Label Sheets (Danish)    ¦ IBM P/N 76X0056 ¦
+---------------------------------------------+------------------------¦
|¦ Preprinted Keybutton Label Sheets (French)    ¦ IBM P/N 76X0051 ¦
+---------------------------------------------+------------------------¦
|¦ Preprinted Keybutton Label Sheets (Swiss)     ¦ IBM P/N 76X0068 ¦
+---------------------------------------------+------------------------¦
|¦ Preprinted Keybutton Label Sheets (German)    ¦ IBM P/N 76X0054 ¦
+---------------------------------------------+------------------------¦
|¦ Preprinted Keybutton Label Sheets (U.K. English)   ¦ IBM P/N 76X0060 ¦
+----------------------------------------------------------------------+
```

```
+----------------------------------------------------------------------+
```

```
|¦ Item                                        ¦ Reorder Number        ¦
+---------------------------------------------+------------------------¦
|¦ Preprinted Keybutton Label Sheets (U.S. English)   ¦ IBM P/N 76X0060 ¦
```

A.2.3 Customer-Replaceable Parts (ANPOS Keyboard)

Table A-10. Preprinted Label Sheets (ANPOS Keyboard)	
Item	**Reorder Number**
Preprinted LED Label Sheets (U.S. English)	IBM P/N 25F6352 (left side of keyboard) IBM P/N 25F6353 (right side of keyboard)
Preprinted LED Label Sheets (Canadian French)	IBM P/N 25F6348 (left side of keyboard) IBM P/N 25F5159 (right side of keyboard)
Preprinted LED Label Sheets (Spanish)	IBM P/N 25F6358 (left side of keyboard) IBM P/N 25F5162 (right side of keyboard)
Preprinted LED Label Sheets (French)	IBM P/N 25F6347 (left side of keyboard) IBM P/N 25F5158 (right side of keyboard)
Preprinted LED Label Sheets (German)	IBM P/N 25F6357 (left side of keyboard) IBM P/N 25F5161 (right side of keyboard)
Preprinted LED Label Sheets (U.K. English)	IBM P/N 25F6359 (left side of keyboard) IBM P/N 25F5163 (right side of keyboard)

Item	**Reorder Number**

|A.2.4 *Customer-Replaceable Parts (Matrix Keyboard)*

```
+--------------------------------------------------------------------+
|¦ Table  A-11. Blank Label Sheets (Matrix Keyboard)                 ¦
+--------------------------------------------------------------------¦
|¦ Item                                         ¦ Reorder Number      ¦
+----------------------------------------------+---------------------¦
|¦ Blank Label Sheets (white)                   ¦ IBM P/N 76X0120     ¦
+----------------------------------------------+---------------------¦
|¦ Blank Label Sheets (yellow)                  ¦ IBM P/N 76X0121     ¦
+----------------------------------------------+---------------------¦
|¦ Blank Label Sheets (red)                     ¦ IBM P/N 76X0122     ¦
+----------------------------------------------+---------------------¦
|¦ Blank Label Sheets (blue)                    ¦ IBM P/N 76X0123     ¦
+----------------------------------------------+---------------------¦
|¦ Blank Label Sheets (green)                   ¦ IBM P/N 76X0124     ¦
+----------------------------------------------+---------------------¦
|¦ Blank Label Sheets (tan)                     ¦ IBM P/N 76X0125     ¦
+--------------------------------------------------------------------+


+--------------------------------------------------------------------+
|¦ Table  A-12. Overlays and Devices (Matrix Keyboard)               ¦
+--------------------------------------------------------------------¦
|¦ Item                                         ¦ Reorder Number      ¦
+----------------------------------------------+---------------------¦
|¦ Protective Overlay Shield                    ¦ IBM P/N 76X0128     ¦
+----------------------------------------------+---------------------¦
|¦ Paper Overlay                                ¦ IBM P/N 76X0129     ¦
+----------------------------------------------+---------------------¦
|¦ Keybutton Removal Tool                       ¦ IBM P/N 1647720     ¦
+--------------------------------------------------------------------+
```

| A.2.5 Customer-Replaceable Parts (Enhanced Alphanumeric Keyboard)

Table A-13. Key Caps and Inserts (Enhanced Alphanumeric Keyboard)	
Item	**Reorder Number**
Blank light key caps	IBM P/N 1351710
Blank dark key caps	IBM P/N 1351728
Clear key caps	IBM P/N 6341707
Paper Inserts	IBM P/N 6341704
Key cap removal tool	IBM P/N 1351717

| A.2.5 Customer-Replaceable Parts (Enhanced Alphanumeric Keyboard)

Item	**Reorder Number**
Blank light key caps	IBM P/N 1351710

GLOSSARY Glossary
This glossary defines terms and abbreviations used in this book. Consult
the *IBM Dictionary of Computing*, SC20-1699, and the index of this book for
terms that you do not find in this glossary.


```
+---+
¦ A ¦
+---+
```

adapter. (1) In the point-of-sale terminal, a circuit card that, with its
associated software, enables the terminal to use a function or feature.
(2) In a LAN, within a communicating device, a circuit card that, with its
associated software and/or microcode, enables the device to communicate
over the network.

address. (1) In data communication, the IEEE-assigned unique code or the
unique locally administered code assigned to each device or workstation
connected to a network. (2) A character, group of characters, or a value
that identifies a register, a particular part of storage, a data source,
or a data sink. The value is represented by one or more characters.
(3) To refer to a device or an item of data by its address. (4) The
location in the storage of a computer where data is stored. (5) In word
processing, the location, identified by the address code, of a specific
section of the recording medium or storage. (6) In word processing, the
location, identified by the address code, of a specific section of the
recording medium or storage.

alphanumeric. Pertaining to a character set containing letters, digits,
and other characters, such as punctuation marks.

analog. Pertaining to data consisting of continuously variable physical
quantities. Contrast with *digital*.

ANPOS keyboard. The alphanumeric point-of-sale keyboard. This keyboard
consists of a section of alphanumeric keys, a programmable set of
point-of-sale keys, a numeric keypad, and system function keys.

application program. (1) A program written for or by a user that applies
to the user's own work. (2) A program written for or by a user that
applies to a particular application. (3) A program written for or by a
user that is specific to the user's own application. (4) A program used
to connect and communicate with stations in a network, enabling users to
perform application-oriented activities.

architecture. A logical structure that encompasses operating principles
including services, functions, and protocols. See *computer architecture,
network architecture, Systems Application Architecture (SAA) (*) Systems
Network Architecture (SNA)*.

attach. (1) To connect a device physically. (2) To make a device a part
of a network logically.

attaching device. Any device that is physically connected to a network
and can communicate over the network.


```
+---+
¦ B ¦
+---+
```

backup. Pertaining to a system, device, file, or facility that can be
used in the event of a malfunction or the loss of data.

backup copy. A copy, usually of a program or of a library member, that is
kept in case the original or the working copy is unintentionally altered
or destroyed.

baseband. (1) A frequency band that uses the complete bandwidth of a
transmission medium. Contrast with *broadband, carrierband*.. (2) A method
of data transmission that encodes, modulates, and impresses information on
the transmission medium without shifting or altering the frequency of the
information signal.

base unit. The part of the IBM 4683 Point of Sale terminal that contains
the power supply and the interfaces.

BASIC. Beginner's All-purpose Symbolic Instruction Code. A programming
language that uses common English words.

broadband. A frequency band divisible into several narrower bands so that
different kinds of transmissions such as voice, video, and data
transmission can occur at the same time. Synonymous with *wideband*.
Contrast with *baseband*.

```
+---+
¦ C ¦
+---+
```

C. A high-level programming language designed to optimize run time, size, and efficiency.

carrier. A wave or pulse train that may be varied by a signal bearing information to be transmitted over a communication system.

carrierband. A frequency band in which the modulated signal is superimposed on a carrier signal (as differentiated from baseband), but only one channel is present on the medium. Contrast with *baseband, broadband*.

cash drawer. A drawer at a point-of-sale terminal that can be programmed to open automatically. See *till*.

chain. (1) Transfer of control from the currently executing program to another program or overlay. (2) Referencing a data record from a previous data record.

charge. A sales transaction in which a customer has the partial or total value of purchased merchandise added to an account for later payment.

clear. To delete data from a screen or from memory.

COBOL. (Common Business-Oriented Language) A high-level programming language, based on English, that is used primarily for business applications.

component. (1) Any part of a network other than an attaching device, such as an IBM 8228 Multistation Access Unit. (2) Hardware or software that is part of a functional unit.

computer architecture. The organizational structure of a computer system, including hardware and software.

configuration. (1) The group of devices, options, and programs that make up a data processing system or network as defined by the nature, number, and chief characteristics of its functional units. More specifically, the term may refer to a hardware configuration or a software configuration. (2) See also *system configuration*.

connect. In a LAN, to physically join a cable from a station to an access unit or network connection point. Contrast with *attach*.

controller. A unit that controls input/output operations for one or more devices.

core. The central region of an optical fiber through which light is transmitted.

customer receipt. An itemized list of merchandise purchased and paid for by the customer.

```
+---+
¦ D ¦
+---+
```

data. (1) A representation of facts, concepts, or instructions in a formalized manner suitable for communication, interpretation, or processing by human or automatic means. (2) Any representations such as characters or analog quantities to which meaning is or might be assigned.

data processing system. A network, including computer systems and associated personnel, that accepts information, processes it according to a plan, and produces the desired results.

device. (1) A mechanical, electrical, or electronic contrivance with a specific purpose. (2) An input/output unit such as a terminal, display, or printer. See also *attaching device*.

digital. (1) Pertaining to data in the form of digits. Contrast with *analog*. (2) Pertaining to data consisting of numerical values or discrete units.

disk. A round, flat plate coated with a magnetic substance on which computer data is stored. See also *integrated disk, fixed disk*.

diskette. A thin, flexible magnetic disk permanently enclosed in a

protective jacket. A diskette is used to store information for
processing.

diskette drive. The mechanism used to seek, read, and write data on
diskettes.

Disk Operating System. An operating system for computer systems that use
disks and diskettes for auxiliary storage of programs and data.

display. (1) A visual presentation of data. (2) A device that presents
visual information to the point-of-sale terminal operator and to the
customer, or to the display station operator.

distributed. Physically separate but connected by cables.

Distributed Systems Executive (DSX). An IBM licensed program available
for IBM host systems that allows the host system to get, send, and remove
files, programs, formats and procedures in a network of computers.

dump. (1) To write at a particular instant the contents of storage, or
part of storage, onto another data medium for the purpose of safeguarding
or debugging the data. (2) Data that has been dumped.

```
+---+
¦ E ¦
+---+
```

EAN. European article number.

emulation. (1) The imitation of all or part of one computer system by
another, primarily by hardware, so that the imitating system accepts the
same data, executes the same programs, and achieves the same results as
the imitated computer system. (2) The use of programming techniques and
special machine features to permit a computing system to execute programs
written for another system.

error message. A message that is issued because an error has been
detected.

European article number (EAN). A number that is assigned to and encoded
on an article of merchandise for scanning in some countries.

evaluation. Reduction of an expression to a single value.

```
+---+
¦ F ¦
+---+
```

feature. A part of an IBM product that may be ordered separately by the
customer.

field. On a data medium or a storage medium, a specified area used for a
particular category of data; for example, a group of character positions
used to enter or display wage rates on a panel.

frame. (1) The unit of transmission in some LANs, including the IBM
Token-Ring Network and the IBM PC Network (*) It includes delimiters,
control characters, information, and checking characters. On a token-ring
network, a frame is created from a token when the token has data appended
to it. On a token bus network (IBM PC Network), all frames including the
token frame contain a preamble, start delimiter, control address, optional
data and checking characters, end delimiter, and are followed by a minimum
silence period. (2) A housing for machine elements. (3) In synchronous
data link control (SDLC), the vehicle for every command, every response,
and all information that is transmitted using SDLC procedures. Each frame
begins and ends with a flag.

franking. Printing an indication on a document that the document has been
processed. This franking may be a store header line, a "total" line, or a
transaction number that is printed when a check, a discount coupon, or a
gift certificate is inserted in the document insert station of the
point-of-sale terminal during certain types of transactions.

function. (1) A specific purpose of an entity, or its characteristic
action. (2) A subroutine that returns the value of a single variable.
(3) In data communications, a machine action such as a carriage return or
line feed.

```
+---+
¦ H ¦
+---+
```

hardware. Physical equipment as opposed to programs, procedures, rules, and associated documentation.

```
+---+
¦ I ¦
+---+
```

inactive. (1) Not operational. (2) Pertaining to a node or device not connected or not available for connection to another node or device. (3) In the IBM Token-Ring Network, pertaining to a station that is only repeating frames or tokens, or both.

insert. To make an attaching device an active part of a LAN.

integrated. Arranged together as one unit.

integrated disk. An integral part of the processor that is used for magnetically storing files, application programs, and diagnostics. Synonymous with *disk*.

interference. (1) The prevention of clear reception of broadcast signals. (2) The distorted portion of a received signal.

item. (1) One member of a group. (2) In a store, one unit of a commodity, such as one box, one bag, or one can. Usually an item is the smallest unit of a commodity to be sold.

```
+---+
¦ K ¦
+---+
```

K. When referring to storage capacity, a symbol that represents two to the tenth power, or 1024.

keyboard. A group of numeric keys, alphabetic keys, special character keys, or function keys used for entering information into the terminal and into the system.

```
+---+
¦ L ¦
+---+
```

label. Constant, either numeric or literal, that references a statement or function.

layer. (1) One of the seven levels of the Open Systems Interconnection reference model. (2) In open systems architecture, a collection of related functions that comprise one level of hierarchy of functions. Each layer specifies its own functions and assumes that lower level functions are provided. (3) In SNA, a grouping of related functions that are logically separate from the functions of other layers. Implementation of the functions in one layer can be changed without affecting functions in other layers.

line. On a terminal, one or more characters entered before a return to the first printing or display position.

load. In computer programming, to enter data into memory or working registers.

lobe receptacle. In the IBM Token-Ring Network, an outlet on an access unit for connecting a lobe.

local area network (LAN). A computer network located on a user's premises within a limited geographical area. **Note:** Communication within a LAN is not subject to external regulations; however, communication across the LAN boundary may be subject to some form of regulation.

logon (n), log on (v). The procedure for starting up a point-of-sale terminal or store controller for normal sales operations by sequentially entering the correct security number and transaction number. Synonymous with *sign-on, sign on*.

loop. (1) A set of instructions that may be executed repeatedly while a certain condition prevails. See also *store loop*. (2) A closed unidirectional signal path connecting input/output devices to a network.

```
+---+
¦ M ¦
```

```
+---+
```

magnetic stripe. The magnetic material (similar to recording tape) on
merchandise tickets, credit cards, and employee badges. Information is
recorded on the stripe for later "reading" by the magnetic stripe reader
(MSR) or magnetic wand reader attached to the point-of-sale terminal.

magnetic stripe reader (MSR). A device that reads coded information from
a magnetic stripe on a card, such as a credit card, as it passes through a
slot in the reader.

magnetic wand reader. A device that reads coded information from a
magnetic stripe on merchandise tickets, employee badges, or credit cards.

message. (1) An arbitrary amount of information whose beginning and end
are defined or implied. (2) A group of characters and control bit
sequences transferred as an entity. (3) In telecommunication, a
combination of characters and symbols transmitted from one point to
another. (4) A logical partition of the user device's data stream to and
from the adapter. See also *error message, operator message*.

monochrome display. See *video display*.

MSR. Magnetic stripe reader.

```
+---+
¦ N ¦
+---+
```

name. An alphanumeric term that identifies a data set, statement,
program, or cataloged procedure.

NetView*. A host-based IBM network management licensed program that
provides communication network management (CNM) or communications and
systems management (C&SM) services.

NetView Distribution Manager (NetView DM). A component of the NetView
family supporting resource distribution within *Change Management*, and
providing central control of software and microcode distribution and
installation, to processors in a distributed/departmental (SNA) network
system. It allows a similar control of user data objects across the
network, and provides the facilities to support the remote initiation of
command lists.

network. (1) A configuration of data processing devices and software
connected for information interchange. (2) An arrangement of nodes and
connecting branches. Connections are made between data stations.

network architecture. The logical structure and operating principles of a
computer network. See also *systems network architecture (SNA)* and *Open
System Interconnection (OSI) architecture*. **Note:** The operating
principles of a network include those of services, functions, and
protocols.

noise. (1) A disturbance that affects a signal and that can distort the
information carried by the signal. (2) Random variations of one or more
characteristics of any entity, such as voltage, current, or data.
(3) Loosely, any disturbance tending to interfere with normal operation of
a device or system.

```
+---+
¦ O ¦
+---+
```

office. See *work area.*

offline. Operation of a functional unit without the control of a computer
or control unit.

online. Operation of a functional unit that is under the continual
control of a computer or control unit. The term also describes a user's
access to a computer using a terminal.

open. (1) To make an adapter ready for use. (2) A break in an electrical
circuit. (3) To make a file ready for use.

Open Systems Interconnection (OSI). (1) The interconnection of open
systems in accordance with specific ISO standards. (2) The use of
standardized procedures to enable the interconnection of data processing
systems. **Note:** OSI architecture establishes a framework for coordinating
the development of current and future standards for the interconnection of
computer systems. Network functions are divided into seven layers. Each

layer represents a group of related data processing and communication functions that can be carried out in a standard way to support different applications.

Open Systems Interconnection (OSI) architecture. Network architecture that adheres to a particular set of ISO standards that relates to Open Systems Interconnect.

Open Systems Interconnection (OSI) reference model. A model that represents the hierarchical arrangement of the seven layers described by the Open Systems Interconnection architecture.

operating system. Software that controls the execution of programs. An operating system may provide services such as resource allocation, scheduling, input/output control, and data management. Examples are IBM PC DOS and IBM OS/2 (*)

Operating System/2 (OS/2). A set of programs that control the operation of high-speed large-memory IBM personal computers (such as the IBM Personal System/2 computer, Models 50 and above), providing multitasking and the ability to address up to 16 MB of memory. Contrast with *Disk Operating System (DOS)*.

operation. (1) A defined action, namely, the act of obtaining a result from one or more operands in accordance with a rule that completely specifies the result for any permissible combination of operands. (2) A program step undertaken or executed by a computer. (3) An action performed on one or more data items, such as adding, multiplying, comparing, or moving.

operator. (1) A symbol that represents the action being performed in a mathematical operation. (2) A person who operates a machine.

operator message. A message from the operating system or a program telling the operator to perform a specific function or informing the operator of a specific condition within the system, such as an error condition.

OS. Operating system.

OSI. Open Systems Interconnect.

OS/2. Operating System/2.

overlay. Part of a larger program read into a computer's main memory only when needed. An overlay replaces other portions of the larger program that are no longer needed. The use of overlays reduces the amount of main memory required by a program. An overlay is only supported on the store controller and requires its own copy of the runtime subroutine library.

owner. In relation to files, an owner is the user that creates the file and therefore has complete access to the file.

```
+---+
¦ P ¦
+---+
```

page. (1) The portion of a panel that is shown on a display surface at one time. (2) To move back and forth among the pages of a multiple-page panel. See also *scroll*. (3) In a virtual storage system, a fixed-length block that has a virtual address and is transferred as a unit between main storage and auxiliary storage.

panel. The complete set of formatted information that appears in a single display on a visual display unit.

PC Network. An IBM broadband or baseband LAN with a bus topology in which messages are broadcast from PC Network adapter to PC Network adapter.

personal computer (PC). A desk-top, free-standing, or portable microcomputer that usually consists of a system unit, a display, a monitor, a keyboard, one or more diskette drives, internal fixed-disk storage, and an optional printer. PCs are designed primarily to give independent computing power to a single user and are inexpensively priced for purchase by individuals or small businesses. Examples include the various models of the IBM Personal Computers, and the IBM Personal System/2 computer.

physical unit (PU). In SNA, the component that manages and monitors the resources of a node, such as attached links and adjacent link stations, as requested by a system services control point (SSCP) via an SSCP-SSCP session.

plug. (1) A connector for attaching wires from a device to a cable, such as a store loop. A plug is inserted into a receptacle or plug. (2) To insert a connector into a receptacle or socket.

point-of-sale terminal. (1) The IBM 4683 Point of Sale Terminal: A unit that provides point-of-sale transaction, data collection, credit authorization, price look-up, and other inquiry and data entry functions. (2) The IBM 4684 Point of Sale Terminal: A unit that provides central processing, point-of-sale transaction, data collection, credit authorization, price look-up, and other inquiry and data entry functions.

polling characters (address). A set of characters specific to a terminal and the polling operation; response to these characters indicates to the computer whether the terminal has a message to enter.

post. (1) To affix to a usual place. (2) To provide items such as return code at the end of a command or function. (3) To define an appendage routine. (4) To note the occurrence of an event.

POST. Power-On Self Test.

Power-On Self Test (POST). A series of diagnostic tests that are run automatically each time the computer's power is switched on.

problem determination. The process of determining the source of a problem as being a program component, a machine failure, a change in the environment, a common-carrier link, a user-supplied device, or a user error.

PROCEDURE. (1) A sequenced set of statements that may be used at one or more points in one or more computer programs, and that usually has one or more input parameters and yields one or more output parameters. (2) A set of instructions that gives a service representative a step-by-step procedure for tracing a symptom to the cause of failure.

PS. Presentation space.

PU. Physical unit.

public switched (telephone) network (PSN). A telephone network that provides lines and exchanges to the public. It is operated by the communication common carriers in the USA and Canada, and by the PTT Administrations in other countries.

```
+---+
¦ R ¦
+---+
```

read. To acquire or to interpret data from a storage device, from a data medium, or from another source.

receive. To obtain and store information transmitted from a device.

receptacle. Electrically, a fitting equipped to receive a plug and used to complete a data connection or electrical path. See also *lobe receptacle.*

record. A collection of related items of data, treated as a unit; for example, in stock control, each invoice could constitute one record. A complete set of such records may form a file.

Reference Diskette. (1) A diskette shipped with the IBM Personal System/2 computers with Micro Channel (*) architecture. The diskette contains code and files used for configuration of options and for hardware diagnostic testing. (2) A diskette shipped with the IBM 4684 Point of Sale Terminal. It contains code and files used for configuration of options and for hardware diagnostic testing.

remove. (1) To take an attaching device off a network. (2) To stop an adapter from participating in data passing on a network.

response. The information the network control program sends to the access method, usually in answer to a request received from the access method. (Some responses, however, result from conditions occurring within the network control program, such as accumulation of error statistics.)

ring network. A network configuration in which a series of attaching devices is connected by unidirectional transmission links to form a closed path. A ring of an IBM Token-Ring Network is referred to as a LAN segment or as a Token-Ring Network segment.

```
+---+
```

```
¦ S ¦
+---+
```

SAA. Systems Application Architecture.

sales transaction. See *transaction*.

scan. To pass an item over or through the scanner so that the encoded information is read. See also *wanding*.

scanner. A device that examines the bar code on merchandise tickets, credit cards, and employee badges and generates analog or digital signals corresponding to the bar code.

scroll. To move all or part of the display image vertically or horizontally to display data that cannot be observed within a single display image. See also *page (2)*.

SNA. Systems Network Architecture.

state. See conversation state.

station. (1) A point-of-sale terminal that consists of a processing unit, a keyboard, and a display. It can also have input/output devices, such as a printer, a magnetic stripe reader or cash drawers. (2) A communication device attached to a network. The term used most often in LANs is an *attaching device* or *workstation*. (3) An input or output point of a system that uses telecommunication facilities; for example, one or more systems, computers, terminals, devices, and associated programs at a particular location that can send or receive data over a telecommunication line. See also *attaching device, workstation*.

store controller. A programmable unit in a network used to collect data, to direct inquiries, and to control communication within a system. In the IBM 4680 Store System, the store controller is an IBM Personal Computer AT (*) or IBM PS/2 with a Store Loop Adapter feature installed.

store loop. In the IBM 4680 Store System, a cable over which data is transmitted between the store controller and the point-of-sale terminals.

Store Loop Adapter. A hardware component used to connect the loop to a control unit, such as the IBM Personal Computer AT.

switch. On an adapter, a mechanism used to select a value for, enable, or disable a configurable option or feature.

system. In data processing, a collection of people, machines, and methods organized to accomplish a set of specific functions. See also *data processing system* and *operating system*.

system configuration. A process that specifies the devices and programs that form a particular data processing system.

Systems Application Architecture (SAA). An architecture developed by IBM that consists of a set of selected software interfaces, conventions, and protocols, and that serves as a common framework for application development, portability, and use across different IBM hardware systems.

Systems Network Architecture (SNA). The description of the logical structure, formats, protocols, and operational sequences for transmitting information units through, and controlling the configuration and operation of, networks. **Note:** The layered structure of SNA allows the ultimate origins and destinations of information, that is, the end users, to be independent of, and unaffected by, the specific SNA network services and facilities used for information exchange.

system unit. (1) A part of a computer that contains the processing unit, and may contain devices such as disk and diskette drives. (2) In an IBM personal computer, the unit that contains the processor circuitry, read-only memory (ROM), random-access memory (RAM), and the I/O channel. It may have one or more disk or diskette drives. (3) In an IBM 4684 terminal, the part of the terminal that contains the processing unit, ROM, RAM, disk and diskette drives, and the I/O channel.

```
+---+
¦ T ¦
+---+
```

task. A basic unit of work.

terminal. In data communication, a device, usually equipped with a keyboard and a display, capable of sending and receiving information over a communication channel.

till. A tray in the cash drawer of the point-of-sale terminal, used to keep the different denominations of bills and coins separated and easily accessible.

token. A sequence of bits passed from one device to another on the token-ring network that signifies permission to transmit over the network. It consists of a starting delimiter, an access control field, and an end delimiter. The frame control field contains a token bit that indicates to a receiving device that the token is ready to accept information. If a device has data to send along the network, it appends the data to the token. When data is appended, the token then becomes a frame. See *frame*.

token ring. A network with a ring topology that passes tokens from one attaching device (node) to another. A node that is ready to send can capture a token and insert data for transmission.

token-ring network. (1) A ring network that allows unidirectional data transmission between data stations by a token-passing procedure over one transmission medium so that the transmitted data returns to and is removed by the transmitting station. The IBM Token-Ring Network is a baseband LAN with a star-wired ring topology that passes tokens from network adapter to network adapter. (2) A network that uses a ring topology, in which tokens are passed in a circuit from node to node. A node that is ready to send can capture the token and insert data for transmission. (3) A group of interconnected token rings.

transaction. (1) The process of recording item sales, processing refunds, recording coupons, handling voids, verifying checks before tendering, and arriving at the amount to be paid by or to a customer. The receiving of payment for merchandise or service is also included in a transaction. (2) In an SNA network, an exchange between two programs that usually involves a specific set of initial input data that causes the execution of a specific task or job. Examples of transactions include the entry of a customer's deposit that results in the updating of the customer's balance, and the transfer of a message to one or more destination points.

```
    +---+
    ¦ U ¦
    +---+
```

universal product code (UPC). An encoded number that can be assigned to and printed on or attached to an article of merchandise for scanning.

UPC. Universal product code.

user. (1) Category of identification defined for file access protection. (2) A person using a program or system.

```
    +---+
    ¦ V ¦
    +---+
```

version. A separate IBM-licensed program, based on an existing IBM-licensed program, that usually has significant new code or new function.

video display. (1) An electronic transaction display that presents visual information to the point-of-sale terminal operator and to the customer. (2) An electronic display screen that presents visual information to the display operator.

```
    +---+
    ¦ W ¦
    +---+
```

wand. A commercially available device used to read information encoded on merchandise tickets, credit cards, and employee badges.

wanding. Passing the tip of the wand reader over information encoded on a merchandise ticket, credit card, or employee badge.

wideband. Synonym for *broadband*.

work area. An area in which terminal devices (such as displays, keyboards, and printers) are located. Access units may also be located in work areas.

workstation. (1) An I/O device that allows either transmission of data or the reception of data (or both) from a host system, as needed to perform a job: for example, a display station or printer. (2) A configuration of

I/O equipment at which an operator works. (3) A terminal or
microcomputer, usually one connected to a mainframe or network, at which a
user can perform tasks.

world. Category of identification defined for file access protection.

4683-xx1. A point-of-sale terminal in the IBM 4680 Store System that
loads and executes programs. A 4683-xx1 can be any of the following
models: 4683-001, 4683-A01, 4683-P11, 4683-P21, 4683-P41.

COMMENTS Readers' Comments -- We'd Like to Hear from You
IBM 4683/4684 Point of Sale Terminal:
Operations Guide

Publication No. SA27-3704-05

Overall, how satisfied are you with the information in this book?

Legend:

1 Very satisfied
2 Satisfied
3 Neutral
4 Dissatisfied
5 Very dissatisfied

	1	2	3	4	5
Overall satisfaction					

How satisfied are you that the information in this book is:

	1	2	3	4	5
Accurate					
Complete					
Easy to find					
Easy to understand					
Well organized					
Applicable to your tasks					

Please tell us how we can improve this book:

    International Business Machines Corporation
    Information Development
    Department E02
    P.O. Box 12195
    Research Triangle Park, North Carolina 27709-9990

Name   . . . . _____
Company or Organization _____
Address . . . . _____
                         _____
                         _____
Phone No. . . . . _____