U.P.C.* GUIDELINES MANUAL

JULY 1994

**In this publication, the letters "U.P.C." are used solely as an abbreviation for the "Universal Product Code" which is a product identification system. They do not refer to the UPC®, which is a federally registered certification mark of the International Association of Plumbing and Mechanical Officials ("IAPMO") to certify compliance with the Uniform Plumbing Code as authorized by IAPMO.*

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PREFACE

The purpose of this manual is to facilitate the use of the Universal Product Code (UPC) numbering system. The Uniform Code Council, Inc. (UCC, Inc.) is the central code management agency.

UCC, Inc. will distribute this manual to all companies when they join the Uniform Code Council.

Problems and suggested changes should be directed to Uniform Code Council, Inc. The Uniform Code Council will consider and authorize all changes. Member companies will be notified of guideline changes and additions by Uniform Code Council, Inc.

BACKGROUND

The basic need behind these guidelines was to develop an administrative system throughout the industry to facilitate more efficient computerized inventory control, accounting, record-keeping and reporting. Administrative savings in these areas are possible through the use of a common numbering system.

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UPC GUIDELINE #4

MULTIPLE UPC'S FOR THE SAME MANUFACTURER

The Board of Governors of the Council will strive to limit each company to a single manufacturer identification number, in order to preserve the code capacity.

The UPC may not be repeated within a company, e.g., to identify product A in division X and product B in division Y. If required and approved by the Council, a different manufacturer identification number may be assigned to a separate division. Each company should plan ahead to identify how many manufacturer identification numbers it will need to participate in the UPC.

MERGERS AND ACQUISITIONS

In the event of a merger or acquisition, the original Universal Product Code numbers should continue to be used on existing products. As new products are introduced or if it becomes necessary to change numbers on existing products, the UPC manufacturer number should be that which was assigned to the acquiring company or survivor of the merger.

When only a portion of another company's product line is acquired and the company the line was acquired from remains in business, the UPC's should be changed to the acquiring company's manufacturer number as new labels are printed and new products are introduced.

AMPLIFICATION

Each manufacturer must recognize the long-term disadvantages of maintaining separate, incompatible division codes and thus separate manufacturer identification codes.

Refer to Guideline #1 for guidance on notifying the retailer of any UPC number changes.

UPC GUIDELINE #5

REGIONAL CODE ASSIGNMENT

The same UPC should not be assigned to different products in different regions served by a company. That is, the UPC for product X sold only in the Northeast should not be assigned to product Y sold only in the Southwest.

On the other hand, as indicated previously, product X sold in the Northeast should not be assigned a different UPC than product X sold in the Southwest.

UPC GUIDELINE #7

MULTIPACK CONSUMER UNITS

Products sold in multipacks should carry a UPC Consumer Package Code for the smallest consumer sale unit and a different UPC Consumer Package Code for each aggregation. For example, a 5-stick package of chewing gum should have a unique UPC Consumer Package Code (e.g. 0 12345-00061). In addition, if a 20-package container were also offered for sale at the consumer level, that consumer unit should carry a different UPC Consumer Package Code (e.g. 0 12345-00063).

Manufacturers should establish levels of specificity applicable to each of their products and reach an understanding with their customers to permit efficient checkout procedures.

The basic principle for manufacturers to follow would be to assign a unique UPC Consumer Package Code to individual consumer units within a multipack whenever these individual consumer units or aggregates are ordinarily offered for sale at the retail level.

AMPLIFICATIONS

A. Note that distributors tend to treat products very differently. For example, in the South cellophane-wrapped cereal with 10 boxes per consumer unit are *routinely* broken up to allow sale of each miniature box individually. Retailers in that part of the country will logically ask for codes to be established for each miniature *and* the 10-pack unit, to permit source symbol-marking of each miniature consumer unit.

B. Products easily separated should carry a separate number.

C. See Manufacturer Helpful Hint #13.

D. Note that distributors and cigarette manufacturers will need to resolve whether a UPC will be required for individual packs *and* another UPC for the carton.

UPC GUIDELINE #8

REUSE OF UPC'S

A UPC should be reused no sooner than 4 years after the last shipment to any distributor.

A one-year period should apply to promotion packages such as a price-off label.

The general rule is that manufacturers should be sure that pipelines are empty and retailers' stocks exhausted before reusing the UPC.

AMPLIFICATIONS

A. A new product is introduced with UPC 0 12345-10001. It is then withdrawn. UPC 0 12345-10001 should not be reused for 4 years.

B. XYZ hand lotion (UPC 0 10000-00025) is offered on a 10¢-off label with UPC 0 10000-00026 for one month. UPC 0 10000-00026 cannot be reused for any other product until one year has elapsed from the date the last deal pack was shipped.

C. Holiday promotions should be defined as promotion packages. (See UPC Guideline #10.)

D. "Common sense" should be the key in reusing UPC's. Careful consideration should be made of the impact of reuse on communication and possible confusion within the distribution channels, especially in regard to computerized inventory systems.

UPC GUIDELINE #9

FRANCHISED BOTTLERS

Products bottled under a national franchise should carry the same UPC (11 digits) regardless of where bottled. For example, the UPC assigned to 6-oz. Pepsi in bottles should be the same among all Pepsi bottlers. This will achieve significant savings in terms of common containers.

A company that bottles products not covered by a nationwide number should apply for its own manufacturer identification number.

If a company bottles both nationally franchised products and other products, a separate manufacturer identification number should be obtained to cover the latter products.

UPC GUIDELINE #10

PROMOTIONS

A number of promotion packages exist in the trade. Some require the regular UPC Consumer Package Code and regular UPC Case Code. Some require the regular UPC Consumer Package Code but a unique UPC Case Code. Finally, some require a unique UPC Consumer Package Code as well as a unique UPC Case Code.

AMPLIFICATIONS

A. **PRICING STATEMENT ON LABEL**–(NOT to be confused with price-off COUPON)–an item which is not normally prepriced with either a special price or "cents off" statement incorporated into the label.

The U.P.C. Case Code and U.P.C. Consumer Package Code should be unique from the U.P.C. Case Code and U.P.C. Consumer Package Code on the regular (non-promotion) item.

B. **BONUS PACK**–an item that has increased quantity (e.g., volume, weight or count) and is sold at the same price as the regular quantity item.

The UPC Case Code for bonus packs must be unique from the UPC Case Code assigned to the regular (non-promotion) item. (Case weight and possibly case cube can change.)

In addition, the promotion item must be assigned a unique UPC Consumer Package Code than is assigned to the regular (non-promotion) item. (Quantity increases affect unit pricing.)

C. **FREE ITEM ON/NEAR CONSUMER PACK**–an item that is offered at no additional cost when the primary (regular) consumer item is purchased. The promotion is sold at the same price as the primary item. The primary and free items can be bound together so that they cannot be separated, or they can be displayed next to each other but in separate packages.

TWO ITEMS BOUND TOGETHER. The UPC Case Code and UPC Consumer Package Code should be unique from the UPC Case Code and UPC Consumer Package Code on the regular (non-promotion) item.

The symbol on both the primary and free item must be obscured (see Symbol Specification Manual, Section 5.11).

TWO ITEMS NEAR EACH OTHER. The primary item UPC Consumer Package Code is the same as the regular UPC Consumer Package Code.

If the free item is marked with a UPC symbol, the symbol should be obscured (see Symbol Specification Manual, Section 5.11).

If the free item is shipped with the primary item, a unique UPC Case Code should be assigned to identify the shipping container of the promotion.

If the free item is shipped separately from the primary item, the regular UPC Case Code should be used for the shipping container of the primary item and a unique UPC Case Code should be assigned to identify the shipper of the free item.

D. **FREE ITEM IN CONSUMER PACK**–a free item packed inside the primary consumer item package with no change in quantity of product and the promotion package is sold at the same price as the regular package.

The UPC Consumer Package Code should be the same as that assigned to the primary consumer package.

The UPC Case Code, however, should be assigned a unique number.

E. **RECONFIGURATION OF CONSUMER PACK**–a consumer package reconfigured for promotional purposes, such as a reusable container, which contains the same quantity of product as the regular package and is sold at the same price.

The UPC Case Code and UPC Consumer Package Code for the promotion package should be identical to that assigned to the primary case and primary consumer package.

F. **PRICE-OFF COUPON** (NOT to be confused with pricing statement on LABEL)–a consumer item with a price-off coupon cross-ruff, in or on the package. The "price-off" coupon could be for the same or any other consumer item.

It is important to note that on this promotion package, the U.P.C. Coupon Code symbol should not be visible to the scanner. The Coupon symbol could be inside the package or on the reverse side (i.e., inside) of the paper label.

The U.P.C. Case Code should be the same as the regular U.P.C. Case Code.

The U.P.C. Consumer Package Code should be the same as the regular U.P.C. Consumer Package Code.

G. **MAIL IN WITH PROOF OF PURCHASE**–a consumer item with a coupon or other identifiable printed matter that would offer proof of having purchased that item. It would be returned by mail by the consumer for refund, for other items, or for purchase of other items at a reduced price.

The UPC Case Code should be the same as the regular UPC Case Code.

The UPC Consumer Package Code should be the same as the regular UPC Consumer Package Code.

H. **MERCHANDISE SOLD WITH ALLOWANCES**–when items are purchased by a wholesaler or retailer at the regular price, additional items are furnished free of charge. This type of promotion is handled in two ways. The quantity of consumer items in the case can be increased or the quantity of regular cases can be increased, with no increase in cost.

When the quantity of consumer items in the case has increased (e.g., consumer item count increased from 48 to 60 per case), the UPC Case Code should be different from the regular UPC Case Code. However, the UPC Consumer Package Code should remain the same as the regular UPC Consumer Package Code.

If the quantity of regular cases is increased (e.g., buy 10 cases and get one free), the UPC Case Code and UPC Consumer Package Code should remain the same as the regular UPC Case Code and the regular UPC Consumer Package Code, respectively.

NOTES

1. On promotions which carry the same UPC Case Code as that assigned to the regular case, the manufacturer may want to identify the shipping containers carrying the promotion. He may do so by use of a suffix to the UPC Case Code . (See UPC Guideline #2.)
2. Manufacturers changing UPC Case Code and/or UPC Consumer Package Codes, *for whatever reason,* should give their customers *at least* 30 days' notice to facilitate changes in their systems. (See UPC Guideline #1.)
3. There may be federal, state or local regulations that require a manufacturer to modify these guidelines.

UPC GUIDELINE #11

RANDOM WEIGHT

Many perishable products (fresh meat, produce, cheese, fish and poultry items) are sold on a price per pound basis at retail, and therefore require a different method of identification than that used for items sold on a price per unit basis. These items are normally called random or variable weight products. At the present time, most random weight products are packaged at store level or at a retailer controlled processing plant. Some random weight items, however, are or may be packaged and price marked by a manufacturer prior to shipment to a wholesaler or retail outlet.

Number system "2" has been set aside for random weight items. Within number system "2", a suggested format has been established to accommodate both retailer packaged and manufacturer packaged items.

Random Weight Format

2	X_1	$X_2X_3X_4X_5$	X_6	$X_7X_8X_9X_{10}$	C
Number System Character	Packager Code	Item ID	Price Check	Price	Modulo Check

Number System Character. As noted, number system "2" shall be used to identify random weight items which are to be sold on a price per pound basis at retail. If a random weight item is to be sold on a price per unit basis (i.e., by count instead of by weight) number system "0" should be used.

Packager Code. The first digit of the 10-digit code is used to identify the packager of the item. Within this digit, the following scheme applies:

Numerals 0, 1, 2, 3. The use of one of these four numerals in position X_1 would indicate that the item has been packaged and symbol marked by the retailer. Since by definition the symbol marking and reading of these items is totally within the retailer's control, it is not technically necessary to establish a standard format for the remaining nine digits when numerals 0, 1, 2 or 3 appear in the first position. However, experience indicates most retailers will want to maintain a standard format on all random weight items, regardless of where packaged. In either case, the four numerals available to identify retailer packaged and symbol marked items can be used by the retailer in any fashion which fits his needs. For example, he might use codes starting with 0 to identify in-store packaged items, codes starting with 1 to identify items produced at his central processing location, codes starting with 2 to identify rewrapped items, etc.

Numerals 4, 5, 6, 7, 8, 9. The use of one of these six numerals in position X_1 would indicate that the item has been packaged and symbol marked by a vendor. This allows vendors of an item to be identified (i.e., vendor A marks his item with numeral 4 in position X_1, vendor B uses numeral 5, etc.). When using this scheme it is suggested that numeral 9 be reserved for items symbol marked by a vendor where vendor identity information is not to be collected.

Item ID. The second through fifth digits of the 10-digit code are used to identify the individual item. The assignment of item codes is the responsibility of the retailer. To simplify vendor symbol marking, item numbers have been established for commodity categories where a significant number of vendors (through their trade association) agree and provide the Council with item identity standards. At the time this revised guideline is being issued, the National Broiler Council, International Dairy-Deli Association, National Turkey Federation, National Fisheries Institute, Inc., National Cheese Institute and National Live Stock and Meat Board have provided such a listing. Copies of standard item lists can be obtained from each respective association.

Price Check. Position X_6 is reserved as a modulo check digit for the item price (see amplification section for details on encodation). While it is not mandatory for a retailer to use the modulo price check digit, it is highly recommended. In cases where the retailer decides not to use it, the symbol marking vendor would need to insert the numeral 0 in position X_6.

Price. Positions seven through ten are used to encode the item's retail price. On vendor marked items it is obviously necessary for the vendor to know the price per pound at which the retailer intends to ultimately sell the product. Because market prices tend to fluctuate and because retailers want to be able to respond quickly to changes in cost or competitive pricing, vendor marking of random weight items will probably be limited to products which have a relatively short shelf life.

AMPLIFICATION

As regards the vendor identity portion of the scheme, it is believed that few occasions exist in which a particular retailer is buying a single random weight item (e.g., chicken breasts, domestic swiss cheese) from more than two or three vendors. Consequently the limitation of this scheme to five identified vendors on any single item is not expected to cause operational problems. While a large chain, selling in many serving areas, may have more than five vendors throughout its system, it is unlikely that any single administrative unit (e.g., region, district, or price zone) will exceed the five vendor limit. In cases where more than five vendors are used, the retailer can still employ the system, identifying five vendors directly and using numeral 9 in the X_1 position to identify that item produced by other than the five identified vendors.

If actual usage of this system turns up instances where a few popular items are stocked by individual retailers using products from more than five vendors, it would be possible to establish a second 4-digit item code number for these few items (e.g., 0827 would be chicken breasts "category A" and 0899 would be chicken breasts "category B"). This would allow for specific identification of up to ten vendors of any such items.

Price check digit calculation: Given the 4-digit price field containing the number 1546 ($X_7X_8X_9X_{10}$ = 1546 would represent $15.46), the price check digit is calculated as follows:

Position	Digit	Weight	Calculation	Weighted Product (See STEP 1)
X_7	1	2 –	1 x 2 = 2 – 0 = 2	2
X_8	5	2 –	5 x 2 = 10 – 1 = 9	9
X_9	4	3	4 x 3 = 12	2
X_{10}	6	5 –	6 x 5 = 30 – 3 = 27	7
			(See STEP 2)	20
			(See STEP 3)	x3
				60
			Price Check Digit (See STEP 4)	0

The procedures (STEPS 1, 2, 3 and 4) in determining the price check digit are set out below.

STEP 1 Compute the weighted (statistical) product for each digit position in the 4-digit price field. Each position in the price field has a numerical coefficient (or weighting factor) of a specific value associated with it:

Position			
	X_7	is weighted by	2 –
	X_8	is weighted by	2 –
	X_9	is weighted by	3
	X_{10}	is weighted by	5 –

To obtain the weighted product of applying the weighting factor of 2 – to a digit, first multiply the digit by 2. Then the carry of that multiplication is subtracted from the product. The units position of the difference is the weighted product; that is:

Digit	Calculation	Weight 2 – Product
0	0 x 2 = 0 – 0 = 0	0
1	1 x 2 = 2 – 0 = 2	2
2	2 x 2 = 4 – 0 = 4	4
3	3 x 2 = 6 – 0 = 6	6
4	4 x 2 = 8 – 0 = 8	8
5	5 x 2 = 10 – 1 = 9	9
6	6 x 2 = 12 – 1 = 11	1
7	7 x 2 = 14 – 1 = 13	3
8	8 x 2 = 16 – 1 = 15	5
9	9 x 2 = 18 – 1 = 17	7

The units position of the product of 3 times the digit is the weighted product of applying the weighting factor of 3 to a digit; that is:

Digit	Calculation	Weight 3 Product
0	0 x 3 = 0	0
1	1 x 3 = 3	3
2	2 x 3 = 6	6
3	3 x 3 = 9	9
4	4 x 3 = 12	2
5	5 x 3 = 15	5
6	6 x 3 = 18	8
7	7 x 3 = 21	1
8	8 x 3 = 24	4
9	9 x 3 = 27	7

To obtain the weighted product of applying the weighting factor of 5 – to a digit, first multiply the digit by 5. Then the carry of that multiplication is subtracted from the product. The units position of the difference is the weighted product; that is:

Digit	Calculation	Weight 5 – Product
0	$0 \times 5 = 0 - 0 = \underline{0}$	0
1	$1 \times 5 = 5 - 0 = \underline{5}$	5
2	$2 \times 5 = \underline{10} - 1 = \underline{9}$	9
3	$3 \times 5 = \underline{15} - 1 = 1\underline{4}$	4
4	$4 \times 5 = \underline{20} - 2 = 1\underline{8}$	8
5	$5 \times 5 = \underline{25} - 2 = \underline{23}$	3
6	$6 \times 5 = \underline{30} - 3 = \underline{27}$	7
7	$7 \times 5 = \underline{35} - 3 = 3\underline{2}$	2
8	$8 \times 5 = \underline{40} - 4 = 3\underline{6}$	6
9	$9 \times 5 = \underline{45} - 4 = 4\underline{1}$	1

(In the example shown above with $X_7 = 1$, $X_8 = 5$, $X_9 = 4$ and $X_{10} = 6$, the weighted products are 2, 9, 2 and 7 respectively.)

STEP 2 Sum the weighted products found in STEP 1.

(In the example shown above, the result is 20 (2 + 9 + 2 + 7).

STEP 3 Multiple the sum found in STEP 2 by 3.

(In the example shown above, the result is 60 (3 x 20).

STEP 4 The price check digit is the units position of the product found in STEP 3.

(In the example shown above, 0 is the units position of the product (60) and hence is the price check digit for the 4 – digit price field 1546.)

Given the price, as well as the resultant price check digit in addition to the item code and number system character, the modulo 10 check digit for the symbol can then be computed and encoded according to the specifications for a Version A UPC symbol.

UPC GUIDELINE #13

PRIVATE LABEL

A UPC Consumer Package Code should be assigned by the organization controlling the label, but may be assigned by the manufacturer on the basis of mutual agreement. Thus, the entire 11-digit UPC may be assigned by the organization controlling the label.

AMPLIFICATION

A company repacking products (a labeler) assumes the responsibility for establishing the UPC number.

UPC GUIDELINE #14

HOLIDAY PACKS

Products modified for seasonal reasons (i.e., holiday packs) should carry a unique UPC to facilitate reorder within the distributor's organization and timely inventory rotation.

AMPLIFICATION

For example, candy especially overwrapped for Halloween should carry a unique UPC, unless the wrapper can be readily removed and merchandise sold as regular stock.

UPC GUIDELINE #17

VELOCITY CODING

This guideline is designed primarily to assist manufacturers as they proceed to make their present product codes compatible with the UPC.

If a manufacturer does not require 5 digits to identify all his products, additional zeros should be placed in *front* of the current code to make up a 5-digit field. For example, if an item is currently coded 1021, it should be shown as 01021 *not* 10210. Such lead zeros can be omitted by distribution center keypunch operations and manual-entry checkstand functions.

Longer term, however, it is conceivable that manufacturers may wish to velocity code their high-volume items. Velocity coding implies that the highest volume item would receive code number 00001. Manufacturers should carefully consider this implication of the UPC before the system is widely used, since subsequent changes may be very difficult and costly for distributors to implement.

UPC GUIDELINE #18

NATIONAL DRUG CODE/NATIONAL HEALTH RELATED ITEMS CODE

The National Drug Code (NDC) and the National Health Related Items Code (HRI) are 10-digit codes and are administered by the Food and Drug Administration (FDA). The formats currently authorized for these numbering systems are as follows:

NDC		HRI	
OXXX-XXXX-XX	(4-4-2)	8XXX-XXXXXX	(4-6)
*XXXXX-XXXX-X	(5-4-1)	9XXXX-XXXXX	(5-5)
*XXXXX-XXX-XX	(5-3-2)		

*The first digit of the Labeler Code will employ the digits 1-7.

The first 4 or 5 digits of these numbering systems are the numbers assigned by the Food and Drug Administration to identify manufacturers. The term *Labeler Code,* which is synonymous with Manufacturer Identification Number in the Universal Product Code, is the official name for this part of the code. These guidelines are for the guidance of those manufacturers who have been assigned a Labeler Code by the FDA.

The last 5 or 6 digits of these numbering systems are the numbers assigned and controlled by manufacturers to identify their product/package designations. This *Product/Package Code* is the equivalent of the Item Code in the Universal Product Code.

Manufacturers and distributors who are required to register and list products with the FDA must, for those drug and health related products, use one of the number formats specified above. Companies who have been assigned a 4-digit NDC Labeler Code should use a 4-4-2 configuration for their drug products; those who have been assigned a 5-digit NDC Labeler Code may elect to use either the 5-4-1 configuration or the 5-3-2 configuration for their drug products.

The Product/Package segment of the National Health Related Items Code is a 5- or 6-digit unstructured code which identifies both the product and package size or variation.

It should be noted that the FDA may, on request, assign a company's UPC Manufacturer Identification Number as its FDA Labeler Code. Companies wishing to pursue this possibility should contact the FDA.

USE OF THE NATIONAL DRUG CODE AND THE NATIONAL HEALTH RELATED ITEMS CODE IN COMPATIBILITY WITH THE UNIVERSAL PRODUCT CODE.

Symbols:

Regular NDC/UPC symbol formats are illustrated in the UPC Symbol Specification manual.

Regular HRI symbol formats are illustrated in the UPC Symbol Specification manual.

Use of the letters "N" or "H" as illustrated in UPC Symbol Specification manual drawings is voluntary at the discretion of individual manufacturers/distributors.

NDC/HRI Code Formats on Non-Drug or Non-Health Related Item Products:

Manufacturers and distributors who have been assigned a Labeler Code by the FDA may identify their non-drug and non-health related item products in symbols using the same symbol formats as above, except that the human-readable prefix "N" and "H" should be excluded from such symbols.

When the manufacturers/distributors have been assigned the same Labeler Code/Manufacturer Identification Number by FDA and UCC, Inc., respectively, in both number system character 0 and 3, they can use the number system character 3 in symbols for all products as specified above, or they may use number system character 0 in symbols for non-drug and non-health related item products. If, however, they have been assigned the same Labeler Code/Manufacturer Identification Number in number system character 3 only, then both the FDA registered items and non-drug and non-health related items must use number system character 3.

It should be noted, however, that only the 5-5 format may be used in the number system "0". Further, zero suppression is only available in number system "0".

ADMINISTRATIVE USE GUIDELINES

Specific directions governing the use of the product-package sections of NDC/HRI codes are prescribed by the Food and Drug Administration in voluntary compliance regulations. Within the UPC system manufacturers/distributors employing NDC/HRI coding formats are governed by the UPC guidelines and specifications in this manual and other UPC manuals. For example, the Item Code (synonymous with NDC/HRI product-package codes) should be unique for each consumer package and/or shipping container regardless of the number system.

GUIDELINES APPLICABLE FOR DUPLICATE LABELER CODES AND MANUFACTURER IDENTIFICATION NUMBERS ISSUED BY FDA AND UCC, INC., TO DIFFERENT USERS

As duplicate manufacturer identification numbers and Labeler Codes for different manufacturers/distributors are issued by the UCC, Inc. and FDA, a means of unique identification is provided. The human-readable and symbol encoded number system characters provide this distinction. In addition, retailers and wholesalers must also be able to distinguish this difference. Therefore, the number system characters are to be used for this purpose on administrative documents and shipping containers.

UPC GUIDELINE #20

IN-STORE APPLICATION OF UPC SYMBOLS

When symbols are applied to merchandise at other than the source of manufacture (e.g., at warehouse or store level), care should be exercised to prevent covering up mandatory labeling.

UPC GUIDELINE #21

PERIODICALS, PAPERBACK BOOKS, GREETING CARDS

Periodicals, paperback books and greeting cards are distributed through stores which use the UPC. The identification of these items poses a problem because of the large number of individual items which could be uniquely identified in the data file (e.g., 52 issues of a particular weekly magazine, or between 4,000 and 5,000 paperback book titles). This guideline, therefore, offers some suggestions on identification of these items intended to aid source symbol-marking.

PERIODICALS (Including Magazines, Comics, Tabloid Newspapers)

The 5-digit manufacturer identification number may be that allocated to the publisher, or, if the publisher of the periodical concerned so chooses, may exceptionally be the manufacturer identification number allocated to the periodical distributor concerned. It is suggested that the 5-digit item code identify the title of the periodical, but not distinguish the week or month of issue.

PAPERBACK BOOKS (Including Children's Books)

The 5-digit manufacturer identification number may be that allocated to the publisher, or, if the publisher of the periodical concerned so chooses, may exceptionally be the manufacturer identification number allocated to the paperback book distributor concerned. It is suggested that the right-hand 5-digit *item* code indicate the suggested retail price *category* of the paperback book, but *not* the specific title. Thus, *all* books with a preprinted suggested retail price of 75¢ may be represented by an item code of 00075, or $1.25 by 00125. Please note that the item code could be some other 5-digit number as long as it remains constant for the same suggested price categories. Further, each retailer has the option, of course, of pricing differently from the suggested retail price for each category. Within a category, variation of price by a retailer can be accomplished by key entry at the check-stand.

GREETING CARDS (Including Counter Cards, Packaged Cards, Seasonal Cards)

The 5-digit manufacturer identification number may be that allocated to the manufacturer concerned. In the same manner suggested above for paperback books, the right-hand 5-digit item code may indicate the suggested retail price category of the card. Character positions in the item code not required to identify a suggested price may be used to identify type of card (bearing in mind that the procedure suggested in this guideline is intended to control the number of data file entries required in the retail store).

UPC GUIDELINE #23

LOCAL ASSIGNED CODE

In addition to the UPC format in number system "2" (see UPC Guideline #11), and the zero bypass code in number system "0" (see Distributor Hint #8), retailers have available for their use a Local Assigned Code (LAC). In using the LAC, the coding and symbol-marking is intended to be carried out in the store and the item so marked would not be sold in another store. This restriction arises because items marked with a LAC number in one store may carry the same identification number as different items marked in accordance with LAC in a different store.

LAC uses number system "0" and provides 35,000 code numbers for in-store use. The LAC uses manufacturer identification numbers 01000 through 07999 and item numbers 00005 through 00009. Any of these item numbers can be used with any of the manufacturer identification numbers in the above list to form the 6-digit code number used in the zero-suppression form of the UPC symbol. The combination, then, of any of these 5 item numbers with any of the 7,000 manufacturer identification numbers provides the 35,000 numbers available in LAC.

NOTE... Although the method for encoding a LAC number differs from that used for forming source-marked Version E symbols as defined in the UPC Symbol Specification manual (Section 2.3), it is not intended to change that procedure in any way. Rather, it is designed solely to simplify the data input requirements of hand-held UPC symbol imprinters/applicators and thus provide retailers with a symbol that can be easily made with a hand-held device at store level.

Version A LAC				Version E LAC
Number System Character	Manufacturers Identification Number	Item Number	Check Digit	
0	$0\ X_2X_3X_4X_5$	$0\ 0\ 0\ 0\ X_{10}$	C	$0\ X_2X_3X_4X_5X_{10}$

a) X_2 is restricted to the numbers 1 through 7.

b) X_3 and X_4 can range from 0 through 9.

c) X_5 can range from 0 through 9 and is used to obtain a specific check digit character when a fixed parity pattern is used.

d) X_{10} is restricted to the numbers 5 through 9.

e) Calcuation of the modulo check character is the same as detailed in the UPC Symbol Specification manual (Section 2.1.2).

f) The modulo check character and the number system character in combination are used to determine the parity pattern for the 6 digits of the Version E code (see Zero-Suppression Parity Pattern Chart, UPC Symbol Specification manual, Section 2.3).

EXAMPLE:

Given Version A LAC: $0\ 0\ 1\ 2\ 3\ X_5\ 0\ 0\ 0\ 0\ 5$ 7

$0\ 0\ X_2X_3X_4X_5\ 0\ 0\ 0\ 0\ X_{10}$ C

where $X_2 = 1$, $X_3 = 2$, $X_4 = 3$, $X_{10} = 5$, and the ckeck digit C = 7, the value of X_5 is determined as follows:

STEP 1 Add together X_2, X_4 and X_{10} ($X_2 + X_4 + X_{10} = 1 + 3 + 5 = \underline{9}$)

STEP 2 Multiply the sum found in STEP 1 by 3 ($3 \times 9 = \underline{27}$)

STEP 3 Add together X_3 and C ($X_3 + C = 2 + 7 = \underline{9}$)

STEP 4 Add the product found in STEP 2 to the sum found in STEP 3 ($27 + 9 = 36$)

STEP 5 X_5 is the smallest number which when added to the sum found in STEP 4 produces a multiple of 10 (Since $36 + 4 = 40$, which is a multiple of 10, $X_5 = 4$)

The Version A LAC 0 01234 00005 7 then yields the Version E LAC 012345 which would use the parity pattern associated with a modulo "7" check digit in number system "0."

It is not possible for a product identification number formed by a manufacturer source-marking a package with a UPC symbol to duplicate a LAC number, provided the manufacturer had identified it with a valid code number under the provisions of the UPC Guidelines Manual. This is because no manufacturer has been assigned or will be assigned manufacturer identification numbers in the block 01000 through 07999 in number system "0."

There are some 4-digit Labeler Codes issued by the Food and Drug Administration under the rules for the National Drug Code which appear in the group of manufacturer identification numbers below 01000. It is to avoid duplication with those numbers when they are used in the "0" number system that the block of numbers assigned to LAC starts at 01000. For similar reasons, the block of manufacturer identification numbers to be used for LAC stops at 07999 because there have been 4-digit National Health Related Items Labeler Codes issued by the Food and Drug Administration which commence with the digit "8."

UPC GUIDELINE #24

RETAILER ZERO-SUPPRESSION CODES FOR PRIVATE LABEL SOURCE-MARKING

The Retailer Zero-Suppression Code (RZSC) technique has been established to provide retailers with expanded zero-suppression capabilities for private label source-marking. The RZSC provides retailers with additional code and symbol capacity beyond that already provided them in the UPC program.

In most cases, retailers have been assigned a UPC manufacturer identification number which allows them only five Version E (zero-suppressed) symbols. Since many retailers have private label products that number in the hundreds, the ability to produce a symbol in the zero-suppress format using the RZSC should be most helpful in further implementation of the UPC symbol.

With the RZSC, each retail organization has an additional 4,500 UPC product identification numbers in number system "0" for its own use. Specifically, RZSC utilizes UPC manufacturer identificaiton numbers 01000, 02000, 03000, 04000 and 05000 coupled with item numbers of the form $00X_8X_9X_{10}$. X_8 can have values ranging from 1 through 9 only. X_9 and X_{10} can have any value from 0 through 9. These conditions on X_8, X_9 and X_{10} will prevent any conflict with LAC (see UPC Guideline #23). Hence, for each manufacturer identification number allowed above there are 900 available UPC product identification numbers for retail souce-marking purposes.

The RZSC numbers are such that they can be used to form zero-suppression versions of the UPC symbol (Version E) for source-marking purposes. The rules for forming the Version E symbol E symbol are as defined in Section 2.3 of the UPC Symbol Specification manual. It should be noted that in the 6-digit Version E RZSC the last digit is always a "0," whereas in the 6-digit Version E LAC, the last digit is always a "5," "6," "7," "8," or "9."

	Version A RZSC			Version E RZSC
Number System Character	Manufacturers Identification Number	Item Number	Check Digit	
0	o X_2 0 0 0	0 0 $X_8X_9X_{10}$	C	0 $X_2X_8X_9X_{10}$0

a) X_2 is restricted to the numbers 1 through 5.

b) X_8 is restricted to the numbers 1 through 9.

c) X_9 and X_{10} can range from 0 through 9.

d) Calculation of the modulo check character is the same as detailed in the UPC Symbol Specification manual (Section 2.1.2.).

e) The modulo check character is used to determine the parity pattern of the 6 digits of the Version E code (see Zero-Suppression Parity Pattern Chart, UPC Symbol Specification manual, Section 2.3).

AMPLIFICATION

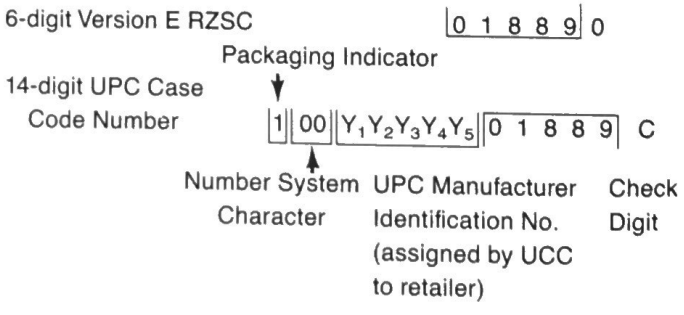
The RZSC is not available for use by national brand manufacturers since obvious problems with duplication of UPC product identification numbers would occur.

It should be noted that the RZSC has been developed to provide retailers with additional zero-suppression capability for private label source-marking purposes, while LAC was designed to provide retailers with a coding and symbol-marking system for in-store implementation to accommodate hand-held UPC symbol imprinters/applicators.

Distributors of generic private label merchandise who ship such merchandise to multiple retail organizations must not use the RZSC since duplication with other private label items also utilizing the RZSC could result.

UPC case marking guidelines: Retailers using the RZSC should use their own unique UPC manufacturer identification number assigned by UCC (instead of the reserved RZSC manufacturer identification numbers 01000, 02000, 03000, 04000 or 05000) with an appropriate 5-digit item number to form the UPC Case Code number for shipping containers even though the contents of these containers have an RZSC on the consumer packs. This is necessary in order to avoid shipping mix-ups (present and future) in the distribution cycle prior to receipt of such merchandise by retailers in a situation where a private label supplier packs for more than one retail customer.

There are many ways in which the Case Code numbers can be formed. One way is to make use of part of the RZSC on the consumer pack as follows:



UPC GUIDELINE #25

SAMPLES OR TEST PRODUCTS

Any sample or test product must be assigned a unique UPC Consumer Package Code if there is any chance it will be sold through a retail store. Only products intended for direct distribution to customers with no contemplation of sale through stores need not be coded.

U.P.C. GUIDELINE #26

PREPRICED MERCHANDISE

Earlier editions of the U.P.C. Guidelines Manual stated that the practice of prepricing should be eliminated when inititating U.P.C. symbol marking. Source marking of the U.P.C. symbol has been a standard practice for many years now (1994 edition of this manual), but prepricing persists in some product categories, notably snack foods, bakery items, beer, magazines. Prepricing is discouraged as a trade practice as it introduces complexity for case and item U.P.C. price file maintenance through the supply chain.

Assuming prepricing remains an issue, the following voluntary guideline is now in effect:

For items normally sold as prepriced merchandise, the U.P.C. Consumer Package Code and U.P.C. Case Code should not be changed when the prepriced retail changes.

AMPLIFICATION

Federal, state or local regulations, which are not voluntary, take precedence over this voluntary guideline. Manufacturers should contact their distributors to determine if these guidelines apply. For example, certain applications of Weights and Measures standards for item/price file maintenance are overseen by the National Institute for Standards and Technology. Item/price file inaccuracies can imply significant fines at the federal and state levels.

(For items not normally prepriced but, for a period of time carry a special price incorporated into the label, see Guideline #10, Amplification A.)

UPC GUIDELINE #27

REFORMULATED OR REPACKAGED PRODUCTS

Repackaging of the products without a change in weight, count or formulation does not require a new UPC Consumer Package Code. However, when a weight change or count change occurs a new UPC Consumer Package Code should be assigned.

Minor formulation changes which will replace an existing product do not require a change in the UPC number. When in doubt, check with the Uniform Code Council, Inc.

AMPLIFICATION

Manufacturers who have been assigned the same FDA Labeler Code and UPC manufacturer identification number should comply with Guideline #18.

HELPFUL HINTS

INTRODUCTION

The following sections set out some helpful hints for manufacturers and distributors as they plan for implementing the UPC.

These sections will be amended to reflect new ideas as they emerge. Hopefully, member companies will share their ideas so that the industry can efficiently move toward full implementation of the UPC. In addition, ideas derived from the inquiry service of Uniform Code Council, Inc. will be incorporated in revisions to these sections.

DISTRIBUTOR HINTS

1. Most retail companies will want to decide very early how to interface their existing item codes with the UPC. Many alternatives exist. The new UPC could be used as fully as available at store level and at interfaces with suppliers. Or, a company could build up a data file of numbers for each product short term as they become available.
2. Retail companies should consider how to accommodate a listing of UPC's for each item carried. The buyer may collect this information. However, file building may be better done between retail and manufacturer computer departments. Some simple form may be appropriate for each salesman to fill out for each product.
3. Review of purchase order forms is necesary, since provision for the UPC will be necessary. Each company will have to redesign its own forms. Planning the phase out of old forms can reduce cost in this area.
4. New instructions may be necessary for warehousemen, operations personnel and store-level personnel to take advantage of UPC's appearing on shipping containers.
5. Note that the National Drug Code (NDC) and National Health Related Items Code (HRI) are also 11-digit codes, some of which will have a different internal structure. File design will be affected because of that. Furthermore, people must be trained to read those codes and discriminate between them.
6. The UPC will not be completely sufficient for accounts payable systems–additional fields will be required to designate special payment instructions to separate franchised bottlers (see UPC Guideline #9) and usually private label manufacturers.
7. Some consideration should be given to whether reorder systems should use existing item codes or the UPC.
8. The so-called "zero bypass code" is a 10-digit code for *local use only.* Since the National Drug Code may start with a zero and no drug company has been assigned manufacturer number 0000, using 0000 as the first four digits of the code will bypass all other codes and give each company 999,999 numbers for its local use.
   High-velocity items, or price entry, could be accommodated with this code; e.g., code 5 could equal 5¢ and code 948 could equal $9.48, or milk could be coded 0000000001 with no key depressions for the zeros.

   The "zero bypass" approach may be used for private label products also. Of course, the zero bypass part of the code provides the ultimate velocity code, since a 1-digit number assignment is possible (e.g., 0000000001). Distributors are advised, however, to use the zero bypass for *local use only.* For distributors' private labels, see UPC Guideline #13.

   Cooperative and voluntary warehouse operations should be very wary of using the zero bypass for private labels, since some retail organizations within their group may wish to use that local code for other purposes.
9. Procedures should be developed to handle UPC's for promotion packages, new products, and other changes normally associated with this channel of distribution.
10. Some planning would be wise as to the mix of case pack varieties shipped to individual stores. Installation of scan systems will require programs to convert UPC Consumer Package Codes to UPC Case Codes in those instances where case pack variations exist. (See UPC Shipping Container Code and Symbol Specification Manual.)

11. An understanding should be reached with suppliers of multipack products as to the level of number assignments that will be needed. For example, four-light-bulb sleeve? Two-bulb sleeve? Single bulb? (See UPC Guideline #7).
12. Procedures will be necessary to distinguish supplier identification numbers already issued by some retailers from the manufacturer identification part of the UPC.
13. New procedures may be necessary in the accounts payable department, especially in the transition phase, to handle verification of shipping documents and invoices.
14. Authorized products lists used by buyers should be reviewed for possible incorporation of the UPC.
15. Random weight products (such as poultry and cheese) are dealt with in UPC Guideline #11. The UPC Shipping Container Code and Symbol Specification outlines the requirements for symbol marking on both random weight and fixed weight shipping container.
16. Procedures should be developed for error correction. First, the source of error should be identified (e.g., "buyer writes down the wrong number"), then correction procedures can be developed to correct the error throughout the distributor's organization.
17. Procedures should also be developed to handle UPC changes from manufacturers.
18. An understanding should be reached with suppliers who do not normally provide itemized invoices or shipping information, since that procedure will tend to inhibit automated devices.
19. Retail companies should be prepared to handle multiple invoices per purchase order and, conversely, a single invoice against several purchase orders, since preprinted forms are likely. It appears that a mixture of approaches will be used for private label products.
20. Retail companies should, for their private label brands, take many of the steps outlined for manufacturers in the following section.
21. Distributors should be prepared for the complexities of handling packer label shipments (mixed shipment of branded and noncompeting private label products), since close control of what was shipped is not part of current practices.
22. Foreign manufacturers are eligible for Council membership and issuance of UPC manufacturer identification numbers. Importers may apply for Council membership on behalf of their foreign manufacturers, or for products which they repack or label.
23. Cooperative and voluntary distributors will need to develop an approach for communicating UPC data to independent retailers. This will affect accounting systems just as it will in retail chain operations.
24. Grocery retailers can measure costs compared with savings of various types of automated checkout counters by using the *Equipment Evaluation Manual* prepared by J. Arthur Andersen for Food Marketing Institute (FMI).

MANUFACTURER HINTS

1. The first step is to identify how many case codes would be affected by the 5-digit, all-numeric item code. Many companies have planned to convert to nondescriptive codes anyway, and this may be an appropriate incentive.
2. If separate divisions have incompatible codes–i.e., the same number could exist for two different products in different divisions–a decision will be needed as to whether to make the codes compatible now or whether to seek multiple UPC manufacturer identification numbers. A manufacturer will probably live with that decision for a long time, because future changes will affect many distributors in a major way as the UPC goes into ever wider use. There are disadvantages to using multiple manufacturer identification numbers from the point of view of the retailer and in terms of invoice processing in the manufacturer's facility. In any event, it is important to make the decision in a timely way.
3. A manufacturer will need to make arrangements for UPC number control on products that are contract packed by another manufacturer for that manufacturer.
4. Control systems will be necessary on private label products. The UPC will be controlled by the company controlling the label. A manufacturer may, therefore, need an internal code for manufacturing control prior to labeling.
5. Paperwork changes will be necessary to put the UPC into use; some advance planning is necessary. Preprinted forms showing the UPC manufacturer identification number will be needed. Similarly, debit memos, credit memos and shipping papers should be redesigned. A manufacturer's inventory of forms should plan for the transition.
6. Communication of its UPC's to the trade will be the manufacturer's rsponsibility. The initial inquiry from a retailer could come in many forms–ranging from a request for a computer tape to a simple form for the manufacturer's salesmen to fill out. Manufacturers will need to educate salesmen and provide a system for communicating current 11-digit UPC's to them. (Note this is another reason why multiple manufacturer identification numbers within one firm will be a problem.)
7. National soft drink companies with franchised bottlers need to develop a common UPC for each item to be used by all bottlers. This will greatly ease the problem for those bottlers. If franchised bottlers produce other products, they will need a separate UPC manufacturer identification number. The national company can help through advice and counsel.
8. Retraining may be necessary in warehouses and other parts of the company if a manufacturer has trained its people to look at the last 2 digits of a case code to identify deal packs. Since the guidelines recommend leading zeros in the item code, the last 2 digits may not indicate deal packs in some companies. Furthermore, people must be trained to recognize that the first 5 digits are the manufacturer identification number.
9. Manufacturers must decide whether or not to velocity code their high-volume products. This can easily be done for the top 10 or 20 products and would facilitate manual-entry automated systems if they prove to be economical and would avoid the risk of later changes which will be resisted by companies that purchased automated scan systems.
10. A central control system for item code assignment is essential. If a manufacturer is not set up for this, proper arrangements should be made because the impact of incorrect number assignments will ripple through the distribution system with significant impact.
11. Each company should develop a policy statement for salesmen, who will inevitably be asked about the company's participation in the UPC.
12. Companies supplying products such as light bulbs should work out understandings with customers (many of whom will not yet be prepared to respond) as to what level of specificity they will code; e.g., 4-pack light bulb sleeve? 2-pack inner sleeve? individual light bulbs?
13. Manufacturers of random-weight items will note from UPC Guideline #11 that the option selected for source-marking of such items depends on whether an item is sold by count or by weight at retail. Therefore, prior to selecting the option, manufacturers should ascertain from their retail and wholesale customers how these items are sold.

14. National Drug Code and National Health Related Items Code producers should recognize that their current code is compatible with the UPC, even though their item code could be 6 digits. Companies using alphanumeric codes (in accordance with an exception in the National Drug Code) will not have codes compatible with the UPC.
15. Manufacturers will need to develop systems to identify specifically what is included in a mixed shipment of packer label products; e.g., special package sale of miscellaneous products from manufacturer's warehouse.
16. An organization labelling products produced by another company shall be treated as a manufacturer and is entitled to have a UPC manufacturer identification number.
17. Importers will also have the opportunity to obtain a UPC manufacturer identification number on behalf of their foreign manufacturer or for products which they (the importer) repack or label. Therefore, each foreign company may obtain a number, and would be advised to do so if it ships a significant volume through several or more importers.