



The Chicago Stock Exchange, Inc.

Midwest Automated Execution System
MAX[®] Link Specifications Manual



TABLE OF CONTENTS

INTRODUCTION 4

COMMUNICATING WITH CHX 5

STANDARD ORDER FORMAT 6

HEADERS AND TRAILERS..... 7

ADMINISTRATIVE MESSAGES..... 8

STANDARD ORDER FORMAT SCHEMATIC..... 9

EQUITY ORDERS..... 10

EQUITY ORDER FORMAT SCHEMATIC 11

LINE 0: SHARED-INTERFACE FIRM IDENTIFICATION..... 12

LINE1: BRANCH OFFICE CODE AND SEQUENCE NUMBER (REQUIRED)..... 13

LINE 1A: CATEGORY, EXCHANGE, AND QUALIFIER DESIGNATIONS 14

BLANK LINE (REQUIRED) 15

LINE 2.1: REPORT STATUS INDICATOR (OPTIONAL) 16

LINE 2: ORDER INSTRUCTIONS 17

LINE 2: ORDER INSTRUCTIONS (CONT.) 18

LINE 3: BASIC ORDER INFORMATION 19

LINE 3A: ADDITIONAL ORDER DATA (OPTIONAL)..... 24

LINE 3B: NON-STANDARD ORDER INSTRUCTIONS (2-PART ORDERS) 30

LINE 3C: NON-STANDARD ORDER DATA (2-PART ORDERS)..... 31

LINE 3D: NON-STANDARD ADDITIONAL ORDER DATA (2-PART ORDERS) 32

LINE 3E: LEAVE DATA LINE 33

LINE 3F: RESTRICTED ORDER DATA 34

SECOND BLANK LINE (REQUIRED FOR ORDERS) 34

LINE 4: CORRESPONDENT, ACCOUNT NUMBER, SHARES 34

LINE 4A: REFERENCE DATA/MISCELLANEOUS LINE 35

LINE 4A: REFERENCE DATA/MISCELLANEOUS LINE 36

LINE 4B: GIVE UP, CFN 37

LINE 4C: MEMBER FIRM TRAILER LINE – SEQUENCE NUMBER LINE..... 40

EQUITY REPORTS 41

LINE 1: FIRM SEQUENCE IDENTIFICATION AND SEQUENCE NUMBER 43

LINE 2: SHARED-INTERFACE IDENTIFICATION (CLEARING SYMBOL)..... 44

LINE 3: BRANCH CODE, SEQUENCE NUMBER AND DATA OF ENTRY 45



LINE 4: PAST TENSE OF ORDER INSTRUCTION 46
 LINE 5: VOLUME, SYMBOL, AND PRICE 47
 LINE 6: ORDER TERMS..... 48
 LINE 7: TIME IN FORCE..... 49
 LINE 8: BUYER AND SELLER INFORMATION (OPTIONAL) 50

OVER THE COUNTER 51

OVER THE COUNTER ORDER FORMAT SCHEMATIC 52
 LINE 0: SHARED-INTERFACE FIRM IDENTIFICATION..... 54
 LINE 1: BRANCH OFFICE CODE AND SEQUENCE NUMBER (REQUIRED)..... 55
 LINE 1.1: OTC ROUTING INFORMATION (OPTIONAL)..... 56
 LINE 1A: CATEGORY, EXCHANGE AND QUALIFIER DESIGNATIONS..... 57
 BLANK LINE (REQUIRED) 58
 LINE 2.1: REPORT STATUS INDICATOR (OPTIONAL)..... 59
 LINE 2: ORDER INSTRUCTIONS 60
 LINE 3: BASIC ORDER INFORMATION 62
 LINE 3A: ADDITIONAL ORDER DATA (OPTIONAL)..... 65
 LINE 3B: NON-STANDARD ORDER INSTRUCTIONS (2-PART ORDERS) 70
 LINE 3C: NON-STANDARD ORDER DATA (2-PART ORDERS)..... 71
 LINE 3D: NON-STANDARD ADDITIONAL ORDER DATA (2-PART ORDERS) 72
 LINE 3E: LEAVES DATA LINE..... 73
 LINE 3F: RESTRICTED ORDER DATA 74
 SECOND BLANK LINE (REQUIRED FOR ORDERS) 75
 LINE 4: CORRESPONDENT, ACCOUNT NUMBER, SHARES 76
 LINE 4A: REFERENCE DATA/MISCELLANEOUS LINE 77
 LINE 4B: GIVE UP, CFN..... 79
 LINE 4C: MEMBER FIRM TRAILER LINE – SEQUENCE NUMBER LINE 82

OTC REPORTS 83

OVER-THE-COUNTER EXECUTION REPORT OUTPUT FORMAT SCHEMATIC 84
 LINE 2: SHARED-INTERFACE IDENTIFICATION (CLEARING SYMBOL) 86
 LINE 3: BRANCH CODE, SEQUENCE NUMBER AND DATA OF ENTRY 87
 LINE 4: PAST TENSE OF ORDER INSTRUCTION 88
 LINE 5: VOLUME, SYMBOL, AND PRICE 89
 LINE 6: ORDER TERMS 90
 LINE 7: TIME IN FORCE..... 91
 LINE 8: BUYER AND SELLER INFORMATION (OPTIONAL) 92

APPENDIX 93

APPENDIX A: INBOUND EQUITY MESSAGE FORMATS 94
 APPENDIX B: INBOUND/OUTBOUND OTC MESSAGE FORMATS 98
 APPENDIX C: ADMINISTRATIVE AND REPORT STATUS FORMATS AND RESPONSES 100
 APPENDIX D: CHX TCP/IP CONNECTION PROTOCOL..... 103



Introduction

This document describes the standard message formats employed by The Chicago Stock Exchange (CHX). Several types of standard message formats are presented:

Standard Stock Order Format used in the transmission of stock orders by brokerage firms to the Midwest Automated Execution System (MAX).

Standard Stock Report Format used to relay confirmation of executed stock orders by the MAX system to the brokerage firms.

Standard Status Request Message formats used for inquiry of stock orders on the MAX system.

Standard Status Request Response Message formats used to respond as to the status of a particular stock order on the MAX system.

Standard Stock Order format used in the transmission of stock orders by brokerage firms to the Midwest Automated Execution Over-the-Counter System (MAX-OTC).

Standard Stock Report Format used to relay confirmation of executed stock orders by the MAX-OTC system to the brokerage firms.

Miscellaneous Administrative Messages.

Although, in general, CHX's standard message formats conform to the standards set forth in the Common Message Switch (CMS) Interface Standards of the New York Stock Exchange and American Stock Exchange, some differences do exist and are noted in this specification. Adherence to CHX's standard message formats is a requirement for automatic execution.

Appendices at the end of this document contain examples of common input message formats, with some corresponding outbound message results.

The CHX also provides support for the Financial Information Exchange (FIX) format. A separate document can be provided which describes the CHX's implementation of FIX.



Communicating with CHX

Protocols -

CHX supports the following protocols:

- 1) Bisync – (3270)
- 2) X.25
- 3) TCP/IP

Data -

CHX also supports data representation in ASCII or EBCDIC format.

Preference needs to be communicated to CHX's programming staff at contact.

An appendix at the end of this document describes the CHX's TCP/IP protocol.



Standard Order Format

The Standard Order Format (SOF) is used in the transmission of orders to The Chicago Stock Exchange by member firms. Use of the SOF can be divided into 3 sub-formats:

- 1) Standard orders
- 2) Cancel orders
- 3) Cancel with Replacement orders

For discussion purposed, an illustration of the SOF structure is presented on page (6) six. It will be referred to in subsequent discussions of specific SOF.

The following schematic conventions should be noted when referring to the SOF structure:

Each line is numbered on the left-hand side and represents a row of text.

Each box represents a discrete field of information with the implication that this field is to be separated from another by a space (“ ”). The only exception to this is the “REPORT STATUS/” or “RS/” field on Line 2.1. They are not separated from the order instruction by a space.

Some fields are composed of both a string literal (which serves as a tag and a parameter. For example, to specify a minimum initial fill (Line 3a), the bond CTCI message would contain the tag “MIN” followed by a user-supplied parameter value which specifies the number of bonds. These two-part fields are designated by a short horizontal line following the tag (e.g.” IN_ _”).

Abbreviations shown in all-uppercase are identical to those used in preparing the standard format.

Terms shown in all lowercase letters are substituted with a user-defined value.

Each line must end with either a “new line” (NL) or “line feed” (LF) character.

NOTE: A LF that is preceded by a “carriage return” (CR) character is not recognized as a valid line delimiter. CHX does not recognize the character sequence CR/LF as a proper line ending.

Blank lines shown in the diagram are mandatory. For example, the last line prior to the line 2 must end with two consecutive line delimiters.

Following the schematic of the Standard Order Format is a line by line description of each field.



Headers and Trailers

All incoming messages to CHX must contain a header and/or trailer line. All outbound messages from CHX will contain a header line and may also contain an optional trailer line.

CHX supports various header and trailer information. CHX may use the header or trailer information on inbound orders for sequence number checking or firm identification. CHX will use the header and trailer information on outbound orders for sequence numbering, routing, or specialist identification. In short, CHX has tried to accommodate the needs of its member firms.

The firms' preference for header and trailer format should be made to CHX's programming staff at the time of contact.



Administrative Messages

CHX uses “free-formatted” admins to convey standard “Good Morning” and “Good Night” messages daily. CHX also uses “free-formatted” admins to convey non-standard information messages broadcast to all firms, as well as pertinent information on a specific order that is not covered in the standard report status response messages.

Examples:

Admin
Good Morning
Have a good day
Chicago Stock Exchange

Admin
Good Night
Chicago Stock Exchange

Admin
The following stocks have
Been added: XYZ, ZZZ.
Chicago Stock Exchange

Admin
Attn: RE XX123...
SLD 100 XXX 1.. PER
UR REQUEST I HAVE
BUSTED ODA
UR OUT....
Chicago Stock Exchange

CHX can receive Administrative Messages from brokerage firms. Anyone wishing to send an administrative message to CHX must specify the word “Admin” on Line 1A; otherwise, the message will be rejected.



Standard Order Format Schematic

L0	Shared-Interface							
L1	Branch code	Sequence number						
L1.1	OTC							
L1a	SUPER ADMIN OTHER	AM NY MW MWSE BN			OL RPX B__			
	Blank line							
L2.1	REPORT STATUS/				RS/			
L2	POSS DUPE	CXL	BUY SL BOT SLD SSHRT SSHRT EXEMPT X XSHRT XSHRT EXEMPT					
L3	Quantity	Symbol	Suffix	Price MKT	STP WOW CLO BAS OB	__LMT		
L3a	XPR EBK	AON LOTS_ MIN_	NH	DAY GTC GTW GTM GT__ OPG FOK OC GTX GA__		DNR DNI	CASH ND SELLER___	P A etc.
L3b	CXL	Price MKT		STP	BUY SL BOT SLD SSHRT SSHRT EXEMPT X XSHRT XSHRT EXEMPT			
L3c	Quantity	Symbol	Suffix	Price MKT	STP WOW CLO BAS OB	__LMT		
L3d	AON LOTS_ MIN_	NH	DAY GTC GTW GTM GT__ OPG FOK OC GTX GA__		DNR DNI	CASH ND SELLER___		P A etc.
L3e	LVS_	AON LOTS_ MIN_	NH	DAY GTC GTW GTM GT__ OPG FOK OC GTX GA__		DNR DNI	CASH ND SELLER__ -	
L3f	// restricted order data (25 bytes)							
	blank line							
L4	Correspondent	Account number			Shares			
L4a	RE	Branch code		Sequence number/date				
L4b	XFIRMS	Buyer Firm ID		Seller Firm ID				
L4c	GU	Give-Up ID		CFN	All or part of 12/13 data			
L4d	Member firm trailer line(s)							



Equity Orders

EQUITY ORDERS



Equity Order Format Schematic

L0	Shared-Interface							
L1	Branch code		Sequence number					
L1.1								
L1a	SUPER ADMIN OTHER		AM NY MW MWSE BN			OL RPX B__		
	Blank line							
L2.1	REPORT STATUS/				RS/			
L2	POSS DUPE		CXL		BUY SL BOT SLD SSHRT SSHRT EXEMPT X XSHRT XSHRT EXEMPT			
L3	Quantity	Symbol	Suffix	Price MKT	STP WOW CLO BAS OB		__LMT	
L3a	XPR EBK	AON	NH	DAY GTC GTW GTM GT__ OPG FOK OC GTX GA__		DNR DNI	CASH ND SELLER___	P A etc.
L3b	CXL		Price MKT		STP		BUY SL BOT SLD SSHRT SSHRT EXEMPT X XSHRT XSHRT EXEMPT	
L3c	Quantity	Symbol	Suffix	Price MKT	STP WOW CLO BAS OB		__LMT	
L3d	AON	NH	DAY GTC GTW GTM GT__ OPG FOK OC GTX GA__		DNR DNI	CASH ND SELLER___		P A etc.
L3e	LVS_	DAY GTC GTW GTM GT__ OPG FOK OC GTX GA__						
L3f	// restricted order data (25 bytes)							
	blank line							
L4	Correspondent		Account number			Shares		
L4a	RE	Branch code		Sequence number/date				
L4b	XFIRMS	Buyer Firm ID		Seller Firm ID				
L4c	GU	Give-Up ID		CFN	All or part of 13 data			
L4d	Member firm trailer line(s)							



Line 0: Shared-Interface Firm Identification

Line 0	Shared-Interface Firm Identification
--------	--------------------------------------

To identify member firms that share a common communication interface to the CHX. This is a 1-4 byte alphabetic field that must begin with an alphabetic character. This field is optional if the line interface supports only one firm. This field is required if the line interface supports multiple firms.

Example: Shared-Interface Firm Identification field

L0..... | Firm



Line1: Branch Office Code and Sequence Number (required)

L1	branch code	sequence number
----	-------------	-----------------

Together, the branch office code and daily sequence number uniquely identify an order for a given firm on a given day. The branch office code must appear as 1-4 alphanumeric characters, beginning with an alphabetic character. The sequence number is a 1-4 byte numeric string in which leading zeroes are permitted but not required.

SOF Note: The 1-4 character field length and use of numerics in the branch code are CHX allowances. The CMS manual suggests 2-3 alphabetic characters for this field.

Technical Note:

If more than 4 digits are entered for the sequence number, CHX will accept only the first 4 digits and send them on to the appropriate trading subsystem.

Example: Branch Office Code and Daily Sequence Number fields

L0.....	FIRM
L1.....	LA 212



Line 1A: Category, Exchange, and Qualifier Designations

(1) (2) (3)

L1A	SUPER ADMIN OTHER	AM NY MW MWSE	OL RPX B_
-----	-------------------	---------------	-----------

1) Message Category (optional)

The message category field is used to designate messages not formatted in the standard manner. This field must be omitted for orders formatted in the standard manner.

Possible entries for this field are:

- 1) "ADMIN" = Administrative message indicator
- 2) "SUPER" = Supervisory message
- 3) "OTHER" = Other than a "SUPER" or "ADMIN" type message

2) Exchange (optional)

The exchange field is used to denote the exchange to which this message is routed. Possible entries for this field are

- a) "AM" = American Stock Exchange
- b) "NY" = New York Stock Exchange
- c) "MW" = Chicago Stock Exchange
- d) "MWSE" = Chicago Stock Exchange

3) Qualifier (optional)

The qualifier field is used to designate whether a message is:

- a) an OTHER odd-lot or an OTHER round-lot order, a round-lot order to a post, or a message to a firm's booth

Possible entries for this field are:

- a) "RPX" = post
- b) "B_ _ _" = booth
- c) "OL" = odd-lot dealer

Example: Category, Exchange and Qualifier fields.

L0.....	FIRM
L1.....	LA 212
L1A.....	MW



Blank Line (required)

A blank line must follow Line 1 (or Line 1a, if used) to segregate order data from transmission data. (i.e. two line delimiters must follow Line 1 (or Line 1A).

Example: Blank line prior to order text.

L0.....	FIRM
L1.....	LA 212
L1A.....	MW
	(blank line)

Example: Blank line prior to order text (with minimum information).

L1.....	LA 212
.....	(blank line)

Example: Blank line prior to order text (with minimum information).

L1.....	LA 212
L1A.....	MW
.....	(blank line)



Line 2.1: Report Status Indicator (optional)

Line 2.1	REPORT STATUS/_	RS/_
----------	-----------------	------

The report status field is used when an inquiry into the status of a previous order is desired.

SOF Note: This field is valid for CHX only. The CMS manual instead utilized Admin type message to access such information.

This alphabetic field consists of the report status indicator and an order type:

Possible entries for the report status indicator are:

- 1) "REPORT/STATUS/", or
- 2) "RS/"

Possible entries for the order type:

- 1) "B" = for a status on a BUY order,
- 2) "S" = for a status on an SL order, and
- 3) "SSHRT" = for a status on an SS type order.

- Examples:
- REPORT STATUS/B (status on a BUY order)
 - REPORT STATUS/S (status on an SL order)
 - RS/S (status on an SL order)
 - RS/SSHRT (status on an SS order)

The original order must be entered in the standard order format.

Example: Report Status Indicator field.

L1.....	LA 212
.....	(blank line)
L2.1.....	REPORT STATUS/B



Line 2: Order Instructions

(1) (2) (3)

L2	POSS DUPE	CXL	BUY SL BOT SLD SSHRT SSHRT EXEMPT X XSHRT XSHRT EXEMPT
----	-----------	-----	--

1) POSS DUPE (optional)

This entry indicates that the current transmission may be a duplication of a previously sent message.

If this alphabetic tag is present, the branch and sequence number on Line 1 must be the same as on the original order. The transmission sequence number located on the firm trailer line, however, must not be duplicated.

CXL (optional)

This entry indicates a cancel request of a previously entered order.

ORDER CATEGORY (required)

This entry contains the buy or sell instructions. Possible terms that may be used are:

- “BUY” - Buy
- “SL” - Sell Long
- “SSHRT” - Sell Short
- “SSHRT EXEMPT” - Sell Short Exempt
- “BOT” - Bought – Chicago Stock Exchange only
- “SLD” - Sold – Chicago Stock Exchange only
- “X” - Cross Order
- “XSHRT” - Cross Short Order
- XSHRT EXEMPT - Cross Short Exempt

Note: Cross and Cross Short orders are only valid for E-Book Orders. And the Buyer Firm ID and Seller Firm ID information (Line 4b) is required for cross or cross short orders.

Technical Notes:

CHX accepts “RE” or “REF” on Line 4A.

The RE field on Line 4A is required.



If an order is not flagged as “POSS DUPE” but the transmission sequence number located on the firm trailer line has not been incremented, CHX will flag the order as “POSS DUPE” and it will be subjected to manual handling.

Line 2: Order Instructions (cont.)

Example: POSS DUPE field.

L1.....	LA 212
.....	(blank line)
L2.....	POSS DUPE BUY

Example: CXL field.

L1.....	LA 212
.....	(blank line)
L2.....	CXL BUY
L4A.....	RE LA 202/0909

Example: Order category field.

L1.....	LA 212
.....	(blank line)
L2.....	BUY



Line 3: Basic Order Information

	(1)	(2)	(2a)	(3)	(4)	(5)
L3	Volume	Symbol	Suffix	Price MKT	STP WOW CLO BAS OB	____LMT WITH ____

1) Volume or Quantity of Stock (required for orders)

The volume field indicates the number of shares involved in the order transaction. Volumes of 1 through 99 shares are considered odd lots. Volumes of 100 shares (or multiples of 100) are considered round lots. Mixed lots (e.g. volume of 101) are accepted.

This field varies between 1-6 numeric characters in length.

SOF Note: The 1-6 character length is an CHX allowance. The CMS manual suggests 1-5 numeric characters.

Symbol (required for orders)

A stock symbol for equity orders usually ranges from 1-3 alphabetic characters. A “Q” may be prefixed before a basic stock symbol to denote a company in bankruptcy proceedings (e.g. QXYZ). Valid stock symbols for MAX orders are listed in the “MAX Eligible Issues List”, published monthly.

2a) Stock Suffix (when applicable)

Valid stock suffixes are listed in the “MAX Eligible Issues List” and in the stock symbol directories published by the New York and American Stock Exchanges.

For equity orders, when applicable, this field is 1-5 alphabetic characters in length. If two or three suffix codes are combined, they must NOT be separated by spaces.

SOF NOTE: The 1-5 stock suffix field length is an CHX limitation. The CMS manual suggests 1-6 alphabetic characters.



Line 3: Basic Order Information (cont.)

3) Price/MKT (required for orders)

This stock price field specifies the ask or bid price of an order. Either a specific number is entered, or the word "MKT" (specifying whatever the current market price is for the particular stock) is entered.

A specific price indication is separated into a whole number, a decimal point '.' and decimal part:

The whole number part (if required) is 1-7 numeric characters in length.

The decimal part (if required) may contain up to 2 places of precision.

4) STP/WOW/CLO/BAS/OB Terms (optional)

Possible field for entries are:

- "STP" = Stop Order: If a limit price was entered in field 3 rather than "MKT", then the term "STP" must follow this limit price for all stop and stop limit orders;
- "WOW" = Odd-Lot limit "with-or-without sale" order;
- "CLO" = Round-Lot "market on close" order;
- "BAS" = Basis price;
- "OB" = Or better.

5) Stop Limit (optional)

- a) "LMT" = The limit price, one space, and the term "LMT" must follow Field 4 for all stop limit orders (even those with the same stop and limit prices).



Line 3: Basic Order Information (cont.)

Technical Notes:

Volume field processing:

- 1-6 numeric characters will be allowed.
- If more than 6 numerics are entered, the message is formatted using the first 6 digits.

Stock Symbol field processing:

The stock symbol is validated against an internal stock symbol table. Each stock symbol entry in this internal table contains a MAX indicator. Messages are routed accordingly based upon this indicator. Price/MKT processing:

Any price entered with more than 2 digits of precision will be rejected with an "Invalid MPV".
"LMT" field processing:

- The term "LMT" is accepted with the terms "WOW", "CLO", "BAS", and "OB", but the record is formatted as if the "LMT" term does not exist.



Line 3: Basic Order Information (cont.)

Example: Volume field.

L1.....	LA 212
.....	(blank line)
L2.....	BUY
L3.....	100

Example: Stock Symbol field.

L1.....	LA 212
.....	(blank line)
L2.....	BUY
L3.....	100 XYZ

Example: Stock Suffix field.

L1.....	LA 212
.....	(blank line)
L2.....	BUY
L3.....	100 XYZ PRA

Example: Price/MKT field. (Market Order)

L1.....	LA 212
.....	(blank line)
L2.....	BUY
L3.....	100 XYZ MKT

Example: Price/MKT field. (Limit Orders)

L1.....	LA 212
.....	(blank line)
L2.....	BUY
L3.....	100 XYZ 68.50



Line 3: Basic Order Information (cont.)

Example: STP/WOW/CLO/BAS/OB field

L1.....	LA 212
.....	(blank line)
L2.....	BUY
L3.....	100 XYZ 68.50 OB

Example: Stop Limit with "WITH" Order fields.

L1.....	LA 212
.....	(blank line)
L2.....	BUY
L3.....	100 XYZ 68.50 STP 68.50 LMT



Line 3A: Additional Order Data (optional)

	(1)	(2)	(3)	(4)	(5)	(6)
L3A	XPR EBK	AON	NH	DAY GTC GTW GTM GT_ _ _ OPG FOK OC GTX GA_ _ _	DNR DNI	CASH ND SELLER_ _ P A etc.

Additional order data may consist of one or more of the terms shown below. When used, they must be entered in the proper sequential order from left to right – separated by single spaces.

1) Handle Instruction - CHXpress Order Type (XPR) - If the criteria specified below is not met, it will be rejected.

- No execution instructions can be specified (AON, NH).
- Time-in-Force must be “DAY” or “GT” date (where the date must be the current day) or OC.
- Order can only be a buy, sell, Sell Short Exempt or Sell Short (Sell Short Exempt Issues only).
- CHXpress orders must be Limit or OB.
- Order must be a round lot.
- No delivery schedule can be specified.

Note: CHXpress Orders cannot be cancel/replaced. They can only be cancelled.

E-book Order Type (EBK) – If the criteria below is not met, it will be rejected.

- Stock needs to be an eBook issue.
- Orders cannot be both EBK and XPR.
- Order can only be a buy, sell or sell short.
- Order must be a round lot.
- Order can be a Limit or OB only.
- Time-in-Force must be “DAY” or “GT” date (where the date must be the current day).
- FOK or OC are permitted.
- No Settlement Type other than “Regular” can be specified (no Cash, Next Day, Seller Days).
- Cross or Cross with size orders are allowed.

Additionally, if a stock is an eBook issue, all orders with this stock need to have the eBook handling instruction (EBK) specified or they will get rejected.

If the firm would like to cancel, cancel/replace or request status of an EBK order, the Order Cancel, Order Cancel/Replace or Order Status Request message must have the EBK handling instruction in the message.



Cross or cross short orders are for eBook orders only. The Buyer Firm ID and Seller Firm ID information (Line 4b) is required for cross or cross short orders.

2) All or None (AON)

The AON field, when entered, represents a round-lot market or limit priced order that is to be executed in its entirety or not at all. Unlike FOK (Fill or Kill), it is not be treated as cancelled if not executed as soon as it is represented in the Trading Crowd. Instead, an unexecuted AON order will remain in the order book until it is matched, cancelled, or purged per the specified time-in-force field.

The alphabetical field, when used, must appear with the exactly spelled word “AON”

3) Not Held (NH)

The NH field, when entered, represents a round-lot or limited price order with instructions “not held”, “disregard tape, take time”, or other such qualifying notation.

This alphabetical field, when used, must appear with the exactly spelled word “AON”.

4) Time-In-Force

The time-in-force field when entered, specifies execution time limits on orders.

This field is 2-3 alphabetical characters in length. Possible entries must be one of the following words spelled exactly:

a) “DAY” = (Day). An order to buy or sell that, if not executed, expires at the end of the trading day on which it was entered.

Line 3A: Additional Order Data (optional) (cont.)

NOTE: Orders not showing any time-in-force will default to DAY orders

b) “GTC” = (Good Till Cancelled). An order to buy or sell that remains in effect until it is executed. These orders are eligible for the secondary trading session.

c) “GTX” = (Good Till Executed). An order to buy or sell that remains in effect until it is executed. These orders are eligible for the secondary trading session.

d) “GT” = (Good Till <date> or Good Till <time>) – where <date> may be entered as “mm/dd/yy” or “mm/dd” (with the year implied), and <time> as “130 PM”. A market or limited price order that is



to be represented in the Trading Crowd until the specified time (that must be entered), after which such order, or the portion not executed, is to be treated as cancelled.

- e) “GTW” = (Good This Week). Same meaning as other GT orders, except for the period specified.
- f) “GTM” = (Good This Month). Same meaning as other GT orders, except for the period specified.
- g) “OPG” = (Opening). A market or limited price order to be executed at the opening of the stock or not at all, and any such order, or the portion not executed, is to be treated as cancelled.
- h) “FOK” = (Fill or Kill). A market or limited price order to be executed in its entirety as soon as it is represented in the Trading Crowd, and such order, if not executed, is to be cancelled. Not to be confused with AON or OC.
- i) “OC” = (Immediate or Cancel). A market or limited price order to be executed in whole or in part as soon as it is represented in the Trading Crowd. Any portion not so executed is to be treated as cancelled. Not to be confused with FOK or AON.
- j) “GA” = (Good at specified hour). An order that becomes a market or limited price order at a specified time.



Line 3A: Additional Order Data (optional) (cont.)

5) Do Not Increase/Reduce

Possible entries in this alphabetical field must be one of the following words spelled exactly:

a) “DNI” = (Do Not Increase). A limited order to buy, a stop order to sell or a stop limit order to sell which is not to be increased in shares on the ex-date as a result of a stock dividend or stock distribution.

b) “DNR” = (Do Not Reduce). A limited order to buy, a stop order to sell or a stop limit order to sell that is not to be reduced by the amount of an ordinary cash dividend on the ex-dividend date. A Do Not Reduce order applies only to ordinary cash dividends; it should be reduced for other distributions such as when a stock goes “ex”, a stock dividend, or “ex” rights.

6) Delivery Schedule

The delivery schedule field specifies delivery dates incumbent upon the seller of the stock.

Possible entries in this alphabetical field must be one of the following words spelled exactly:

a) “CASH” = (Cash). A transaction on the Floor that calls for delivery of the securities and payment on the same day.

b) “ND” = (Not Held). Delivery of the securities is due on the next business day following day of the contract.

c) “SELLER” = (Seller<nn> above. This IS A SO-CALLED Seller’s Option – a special transaction on the exchange that gives the seller the right to deliver the stock at any time within a specified time denoted by <nn> above. This <nn> period ranges from 6-60 calendar days for round-lots and odd-lots.



Line 3A: Additional Order Data (optional) (cont.)

Account Type

This field identifies the type of order that has been received by CHX. CHX accepts any of the various CMS standard account types:

- P - Principal
- A - Agency
- I - Individual Investor
- D - Program Trade, index arbitrage for Member/Member Organization
- C - Program Trade, non-index arbitrage for Member/Member Organization
- J - Program Trade, index arbitrage for individual customer
- U - Program Trade, non-index arbitrage for individual customer
- K - Program Trade, index arbitrage for other agency
- Y - Program Trade, non-index arbitrage for other agency.

SOF Note: Principal "P" orders are manually handled. If this field is not supplied the account type is assumed to be Agency("A"). Order sending firms are required to ensure accurate designation of account type.

Technical Notes:

MAX "NH" field processing: MAX does not handle NH.

GTW field processing: End of week date is sent to the MAX subsystem.

GTM field processing: End of month is sent to the MAX subsystem

OPG field processing: Today's date is sent to the MAX subsystem.

FOK field processing: Today's date is sent to the MAX subsystem.

OC field processing: Today's date is sent to the MAX subsystem.

Time-In-Force Time field processing:

If date is enter for a GT order as 6/6 on 9/23/85, the date sent to MAX will be 850623. Time is not formatted.

- GA is formatted with no date.

Delivery Schedule field processing:

- CHX allows the numbers of days in "SELLER _ _ _" to be smaller than 6.



Line 3A: Additional Order Data (optional) (cont.)

Example: Time-In-Force field. (Day Order)

L1.....	LA 212
.....	(blank line)
L2.....	BUY
L3.....	500 XYZ 68.50
L3A.....	DAY

Example: Time-In-Force field. (Good Till Cancelled)

L1.....	LA 212
.....	(blank line)
L2.....	BUY
L3.....	500 XYZ 68.50
L3A.....	GTC

Example: CHXPress Order (XPR)

L1.....	LA 212
.....	(blank line)
L2.....	BUY
L3.....	500 XYZ 68.50
L3A.....	XPR DAY

Example: E-Book Order (EBK)

L1.....	LA 212
.....	(blank line)
L2.....	BUY
L3.....	500 XYZ 68.50
L3A.....	EBK DAY



Line 3B: Non-Standard Order Instructions (2-part orders)

	(1)	(2)
L3B	CXL	BUY SL SSHRT SSHRT EXEMPT BOT SLD X XSHRT XSHRT EXEMPT

CXL (Cancel)

“CXL” = (Cancel), An order that cancels an entire, previously transmitted order with or without a replacement order.

SOF Note: On a cancellation with replacement, CHX requires that the RE data on Line 4A be entered with the replacement date. CHX does not support the short CXL/REPLACE format.

X/XSHRT Note: X , XSHRT and XSHRT EXEMPT orders can not be CXL or CXL/REPLACED. These orders must be canceled manually via phone.

Order Instruction

Refer to Line 2, Field 3 parameters for specific instructions on this field. Line 2 limitations also apply to Line 3B.

Example: Non-Standard Order Instructions.

L1.....	LA 212
.....	(blank line)
L2.....	BUY
L3.....	500 XYZ 68.50
L3A.....	GTC
L3B.....	CXL BUY



Line 3C: Non-Standard Order Data (2-part orders)

(1)	(2)	(2a)	(3)	(4)	(5)
L3C	volume	symbol	suffix	Price MKT	STP CLO WOW BAS OB --LMT

The Line 3 descriptions, specifications, and limitations apply to the above fields.

Example: Non-Standard Order Data (2-part orders)

L1.....	LA 212
.....	(blank line)
L2.....	BUY
L3.....	500 XYZ 68.50
L3A.....	GTC
L3B.....	CXL BUY
L3C.....	200 XYZ 69



Line 3D: Non-Standard Additional Order Data (2-part orders)

	(1)	(2)	(3)	(4)	(5)	
L3A	AON	NH	DAY GTC GTW GTM GT_ _ _ _ OPG FOK OC GTX GA_ _ _ _	DNR DNI	CASH ND SELLER_ _	P A etc.

The same descriptions, specifications, and limitations of Line 3A apply to the above fields.

Example: Non-Standard Additional Order Data (2-part orders)

L1.....	LA 212
.....	(blank line)
L2.....	BUY
L3.....	500 XYZ 68.50
L3A.....	GTC
L3B.....	CXL BUY
L3C.....	200 XYZ 69
L3D.....	DAY



Line 3E: Leave Data Line

(1) (2)

L3E	LVS	DAY GTC GTX OPG FOK OC
-----	-----	---------------------------

This line is used with simple cancel orders (“CXL” is entered on Line 2). The volume on the original order is reduced to the amount in the LVS field. The original order keeps the same position in the Specialist’s book.

LVS

LVS is entered, followed immediately by the new reduced volume. Volume must be 1 to 4 numeric.

Time-In-Force

Specifies how long the order remains in effect if it is neither executed or cancelled.

Example: LVS Data.

L1.....	LA 212
.....	(blank line)
L2.....	CXL BUY
L3.....	200 XYZ 68.50
L3E.....	LVS 300

SOF Note: CHX does not support this order type at this time.



Line 3F: Restricted Order Data

L3F	// restricted order data (25bytes)
-----	------------------------------------

Technical Note:

Line 3F information is accepted, but is not processed by CHX.

Second blank line (required for orders)

A blank line must precede the Line 4 information to segregate the order text from the trailer data. (i.e. two line delimiters must precede Line 4).

Line 4: Correspondent, Account Number, Shares

L4	correspondent	account number	shares
----	---------------	----------------	--------

Technical Note:

CHX will accept, but does NOT edit or verify Line 4 information, nor is the information formatted and sent to the MAX system.

Example: Correspondent, Account Number, and Shares.

L1.....	LA 212
.....	(blank line)
L2.....	BUY
L3.....	500 XYZ 68.50
L3A.....	GTC
.....	(blank line)
L4.....	111-22222-33



Line 4A: Reference Data/Miscellaneous Line

(1) (2) (3)

L4A	RE	branch code	sequence number/date
-----	----	-------------	----------------------

If Line 4A does not contain the RE field, it may contain miscellaneous information. Multiple miscellaneous lines are valid.

Reference Data

The Reference Data Indicator field is required for a CXL type order.

Field 1 must contain "REF" or "RE: if the order is a cancel or cancel replace order.

Branch Code

The branch code carries the same specifications as the branch code in Line 1.

Sequence Number/Date

The sequence number carries the same specifications as the sequence number in Line 1.

The entry of a date is optional on a CLX type order, but required on a CXL/RPL order.

The slash "/" and date must immediately follow the sequence number (NO blanks allowed).

Two formats for the date entry are allowed:

<mm>/<dd>/<yy>/ or <mm>/<dd> or
<mm><dd><yy> or <mm><dd>

where <mm> = month. Either one or two digits are accepted. No imbedded blanks are allowed.

<dd> = day. Either one or two digits are accepted. No imbedded blanks are allowed.

<yy> = year. Must be two digits. If left blank (implying the current year is the default), the slash "/" must not follow <dd>.



Line 4A: Reference Data/Miscellaneous Line

Technical Note:

Line 4A information is accepted with no editing or verification, unless RE information is indicated.

Example: Reference Data/Miscellaneous.

L1.....	LA 212
.....	(blank line)
L2.....	CXL BUY
L3.....	500 XYZ 68.50
L3A.....	GTC
.....	(blank line)
L4.....	111-22222-33
	RE LA 202/0909



Line 4B: XFIRMS, Buyer Firm ID, Seller Firm ID

(1) (2) (3)

L4B	XFIRMS	Buyer Firm ID	Seller Firm ID
-----	--------	---------------	----------------

Line 4B contains XFIRMS tag and the Buyer and Seller Firm IDs for a Cross or Cross Short order. If and order has a Side of X or XSHRT or XSHRT EXEMPT, these fields must be filled.

1) XFIRMS

The XFIRMS field must contain the text “XFIRMS”. This field should only be populated for Cross and Cross Short Orders.

2) Buyer Firm ID

The Buyer Firm ID field is a 4 character ascii field containing the Firm Symbol for the Buy side of a Cross or Cross Short Order. Field 1 (XFIRMS) must contain “XFIRMS” when Buyer Firm ID is used.

3) Seller Firm ID

The Seller Firm ID field is a 4 character ascii field containing the Firm Symbol for the Sell side of a Cross or Cross Short Order. Field 1 (XFIRMS) must contain “XFIRMS” when Seller Firm ID is used.

Example: XFIRM.

L1.....	LA 212
.....	(blank line)
L2.....	BUY
L3.....	500 XYZ 68.50
L3A.....	GTC
.....	(blank line)
L4.....	111-22222-33
L4B.....	XFIRMS FIDB FIDS



Line 4C: Give Up, CFN

	(1)	(1a)	(2)	(2a)
L4C	gu	Give-up id	cfn	All or part of 13 data

Line 4C contains Give-Up data and confirmations. Give-Up data and confirmation fields are each composed of two parts. For Give-Up data, the first part indicates type, and the second part denotes the abbreviated firm name for Give-Up purposes. For confirmation, the first part indicates type also, while the second part contains any or all of the Line (3) fields (in their proper sequence). If both fields are present, Give-Up data must come first.

1) Give-Up Indicator

Give-Up data is a 2 character alphabetic field. If entered, only one entry is possible:

a) "GU" = Give Up

1a) Give-Up ID

Give-Up ID is a 1-4 length alphabetic field containing the abbreviated firm name.

2) Confirmation Indicator

Confirmation is a 3 character alphabetic field. If entered, only one entry is possible:

"CFN" = Confirmation

2a) Confirmation Data

Confirmation data will contain all of the Line 3 fields (in their proper sequence) that need to be confirmed.



Line 4C: Give Up, CFN (cont.)

Technical Note:

CHX allows “CFN:” or “CFM”. The CMS format only allows for “CFN”.

Example: Give-Up, CFN

L1.....	LA 212
.....	(blank line)
L2.....	BUY
L3.....	500 XYZ 68.50
L3A.....	GTC
.....	(blank line)
L4.....	111-22222-33
	CFN 500 XYZ



Line 4D: Member Firm Trailer Line – Sequence Number Line

L4D	member firm trailers line(s)
-----	------------------------------

This line contains the Member Firm line sequence ID and the sequence number.

Technical Notes: - There must be a space between the sequence ID and the sequence number.

- If the ID is bad, the record is formatted and sent to MAX and MAX/OTC without doing a sequence number check.

- The sequence number is calculated backwards from the ETX. Sequence checking can be done by line or by firm in a multiple firm environment.

Example: Member Firm Trailer Line – Sequence Number Line

L1.....	LA 212
.....	(blank line)
L2.....	BUY
L3.....	500 XYZ 68.50
L3A.....	GTC
.....	(blank line)
.....	MAX 555



Equity Reports

EQUITY

REPORT



Equity Execution Report Output Format Schematic

L1	firm sequence identification	sequence number
L2	firm dependent information (clearing symbol)	
L3	branch code	sequence number
L4	operation of order	
L5	volume	stock price
L6	type	
L7	time in force	
L8	buyer seller volume	



Line 1: Firm Sequence Identification and Sequence Number (Variable)

(1)

(2)

L1	firm sequence identification	sequence number
----	------------------------------	-----------------

1) Firm sequence identification

1-4 character field inserted by CHX in accordance to firm's preference.

2) Sequence number

1-4 character numeric field keeping count of the reports being sent out to the firm.

Together, the firm sequence identification and sequence number uniquely identify a report sent out to a given firm.

Example: Firm ID sequence number.

L1.....	MW 335
---------	--------



Line 2: Shared-Interface Identification (clearing symbol)

L2	Shared-interface identification (clearing symbol)
----	---

The contents of this field will be equal to that appearing on Line 0 of the original order. If Line 0 of the original order was not supplied (i.e. single firm link), Line 2 will be excluded from the excluded from the execution report.

Example: Clearing Symbol.

L1.....	MW 355
L2.....	FIRM



Line 3: Branch Code, Sequence Number and Data of Entry

(1)

(2)

L3	branch code	sequence number
----	-------------	-----------------

Branch Code

1-4 character field which appeared on Line 1 or the original order.

Sequence Number

1-4 character numeric field which appeared on Line 1 of the original order. A firm's branch code and branch sequence number uniquely identify an order for a given firm on a given day.

Example: Branch Code and Sequence Number.

L1.....	MW 355
L2.....	FIRM
L3.....	LA 672



Line 4: Past Tense of Order Instruction

L4	past tense of order instruction
----	---------------------------------

This field will contain the past tense of the order instruction from the original order.

Example: Past Tense of Order Instruction.

L1.....	MW 355
L2.....	FIRM
L3.....	LA 672
L4.....	SLD

Technical Notes:

Possible entries for this field are:

SLD	-	Sold	SLD SHRT EXEMPT
BOT	-	Bought	
SLD SHRT	-	Sold Short	



Line 5: Volume, Symbol, and Price

(1) (2) (3)

L5	volume	stock symbol + suffix	price
----	--------	--------------------------	-------

Volume

1-6 character numeric field indicating the number of stocks bought or sold.

SOF Note: The CMS Manual indicates a 1-5 character numeric.

Stock Symbol & Suffix

A 1-8 alphanumeric field that represents the CHX symbol of the issue bought or sold.

SOF Note: The CMS Manual indicates a 1-3 character stock symbol and a 1-6 character suffix.

Price

Decimal format price with the whole price being up to 7 characters and decimal portion of up to 2 digits.

Example: Volume, Stock Symbol, and Price.

L1.....	MW 355
L2.....	FIRM
L3.....	LA 672
L4.....	SLD
L5.....	500 XYZ 100.25



Line 6: Order Terms

L6	original order terms
----	----------------------

This field will contain a representation of the original price terms.

Example: Original Order Terms.

L1.....	MW 355
L2.....	FIRM
L3.....	LA 672
L4.....	SLD
L5.....	500 XYZ 100.25
L6.....	ON 100.25 LMT

L1.....	MW 355
L2.....	FIRM
L3.....	LA 672
L4.....	SLD
L5.....	500 XYZ 100.25
L6.....	ON MKT



Line 7: Time in Force

L7	time in force
----	---------------

This field will contain the mnemonic that was specified on Line 3A of the original order.

Example: Time in Force

L1.....	MW 335
L2.....	FIRM
L3.....	LA 672
L4.....	SLD
L5.....	400 XYZ 100 1/4
L6.....	ON 100.25 LMT
L7.....	DAY



Line 8: Buyer and Seller Information (optional)

	(1)	(2)	(3)
L8	buyer	seller	volume

Buyer

The clearing identifier of the party on the buy side of the match. If the firm entered a sell order, the buyer will be the clearing number or clearing symbol of the CHX omnibus account. If the firm entered a buy order, the buyer field will be the clearing number or the clearing symbol of the firm given up on the order.

Seller

The clearing identifier of the party on the sell side of the match. If the firm entered a buy order, the seller will be the clearing number or clearing symbol of the CHX omnibus account. If the firm entered a sell order, the seller field will be the clearing number or the clearing symbol of the firm given up on the order.

Volume

Volume may be represented as the true whole number or in hundreds of the actual volume.

Example: Buyer and Seller Information.

L1.....	MW 335
L2.....	FIRM
L3.....	LA 672
L4.....	SLD
L5.....	500 IBM 100.25
L6.....	ON 100.25 LMT
L7.....	DAY
L8.....	BNET GUID5



Over the Counter

Over the Counter

Orders



Over the Counter Order Format Schematic

L0	Shared-Interface Firm Identification							
L1	Branch code		Sequence number					
L1.1	OTC							
L1a	SUPER ADMIN OTHER		AM NY MW MWSE			OL RPX B_ _		
	Blank line							
L2.1	REPORT STATUS/				RS/			
L2	POSS DUPE		CXL		BUY SL BOT SLD SSHRT SSHRT EXEMPT X XSHRT XSHRT EXEMPT			
L3	Quantity		Symbol	Suffix	Price MKT	STP WOW CLO BAS OB		_ _LMT
L3a	EBK	AON LOTS _MIN -	NH	DAY GTC GTW GTM GT_ _ OPG FOK OC GTX GA_ _		DNR DNI	CASH ND SELLER_ _ _	P A etc.
L3b	CXL		Price MKT		STP	BUY SL BOT SLD SSHRT SSHRT EXEMPT X XSHRT XSHRT EXEMPT		
L3c	Quantity		Symbol	Suffix	Price MKT	STP WOW CLO BAS OB		_ _LMT
L3d	EBK	AON	NH	DAY GTC GTW GTM GT_ _ GA_ _		DNR DNI	CASH ND SELLER_ _ _	P A etc.
L3e	LVS_	AON	NH	DAY GTC GTW GTM GT_ _ GA_ _		DNR DNI	CASH ND SELLER_ _ _	
L3f	// restricted order data (25 bytes)							
	blank line							
L4	Correspondent		Account number			Shares		
L4a	RE		Branch code		Sequence number/date			



L4b	XFIRMS	Buyer Firm ID	Seller Firm ID	
L4c	GU	Give-Up ID	CFN	All or part of 12/13 data
L4d	Member firm trailer line(s)			



Line 0: Shared-Interface Firm Identification

Line 0	Shared-Interface Firm Identification
--------	--------------------------------------

To identify member firms that share a common communication interface to the CHX. This is a 1-4 byte alphanumeric field that must begin with an alphabetic character. This field is option if the line interface supports only one firm. This field is required if the line interface supports multiple firms.

Example: Shared-Interface Firm Identification field.

L0.....

FIRM



Line 1: Branch Office Code and Sequence Number (required)

L1	branch code	sequence number
----	-------------	-----------------

Together, the branch office code and daily sequence number uniquely identify an order for a given firm on a given day. The branch office code must appear as 1-4 alphanumeric characters, beginning with an alphabetic character. The sequence number is a 1-4 byte numeric string in which leading zeroes are permitted but not required.

SOF Note: The 1-4 character field length and use of numerics in the branch code are CHX allowances.

Technical Note:

If more than 4 digits are entered for the sequence number, CHX will accept only the first digits and send them on to the appropriate trading subsystem.

Example: Branch Office Code and Daily Sequence Number Fields.

L0.....	FIRM
L1.....	LA 212



Line 1.1: OTC Routing Information (optional)

L1.1	OTC
------	-----

Purpose: The OTC field acts as a routing indicator for OTC destined messages. This field, if present, consists of the word “OTC” and is 3 characters in length.

SOF Note: This field is valid for CHX only.

Technical Note:

All messages containing the OTC indicator are sent to the OTC subsystem as ADMIN type messages (even if the rest of the message appears to be an order).

Over-the-Counter orders do not need the “OTC” indicator. Over-the-Counter orders will be routed based on the stock symbol

Example: OTC Routing Information field.

L0.....	FIRM
L1.....	LA 212
L1.1.....	OTC



Line 1A: Category, Exchange and Qualifier Designations

(1)

(2)

(3)

L1A	SUPER ADMIN OTHER	AM NY MW MWSE	OL RPX B
-----	-------------------	---------------	----------

Message Category (optional)

The message category field is used to designate message not formatted in the standard manner. This field must be omitted for orders formatted in the standard manner.

- 1) "ADMIN" = Administrative message indicator.
- 2) "SUPER" = Supervisory message.
- 3) "OTHER" = Other than a "SUPER" or "ADMIN" type message

Exchange (as required)

The exchange field is used to denote the exchange to which this message is routed. Possible entries for this field are:

- a) "AM" = American Stock Exchange
- b) "NY" = New York Stock Exchange
- c) "MW" = Chicago Stock Exchange
- d) "MWSE" = Chicago Stock Exchange

Qualifier (optional)

The qualifier field is used to designate whether a message is:

an OTHER off-lot or an OTHER round-lot order,
a round-lot order to a post, or
a message to a firm's booth.

Possible entries for this field are:

- a) "RPX" = post
- b) "B_ _" = booth
- c) "OL" = odd-lot dealer



Line 1A: Category, Exchange and Qualifier Designations (cont.)

Example: Category, Exchange and Qualifier fields.

L0.....	FIRM
L1.....	LA 212
L1.1.....	OTC
L1A.....	MW

Blank Line (required)

A blank line must follow Line 1 (Line 1.1 or 1A, if used) to segregate order data from transmission data. (i.e., two line delimiters must follow Line 1, Line 1.1 or Line 1A).

Example: Blank line prior to order text (will be sent as “admin”).

L0.....	FIRM
L1.....	LA 212
L1.1.....	OTC
L1A.....	MW
	(blank line)

Example: Blank line prior to order text (with minimum information).

L1.....	LA 212
.....	(blank line)

Example: Blank line prior to order text (with minimum information).

L1.....	LA 212
L1A.....	MW
.....	(blank line)



Line 2.1: Report Status Indicator (optional)

L2.1	REPORT STATUS/ _ RS/ _
------	---------------------------

The report status field is used when an inquiry into the status of a previous order is desired.

SOF Note: This field is valid for CHX only.

This alphabetic field consists of the report status indicator and an order type:

Possible entries for the report status indicator are:

“REPORT STATUS/”, or
“RS/”.

Possible entries for the order type:

- 1) “B” = for a status on BUY order,
- 2) “S” = for a status on an SL order, and
- 3) “SSHRT” = for a status on an SS type order.

The original order must be entered in the standard order format.’’

Example: Report Status Indicator field.

L1.....	LA 212
.....	(blank line)
L2.1.....	REPORT STATUS/B



Line 2: Order Instructions

	(1)	(2)	(3)
L2	POSS DUPE	CXL	BUY SL BOT SLD SSHRT SSHRT EXEMPT X XSHRT XSHRT EXEMPT

1) POSS DUPE (optional)

This entry indicates that the current transmission may be a duplication of a previously sent message.

If this alphabetic tag is present, the branch and sequence number on Line 1 must be the same as on the original order. The transmission sequence number located on the firm trailer line, however, must not be duplicated.

2) CXL (optional)

This entry indicates a cancel request of a previously entered order.

3) Order Category (required)

This entry contains the buy or sell instruction. Possible terms that may be used are:

- a) "BUY" - Buy
- b) "SL" - Sell long
- c) "SSHRT" - Sell short
- d) "SSHRT EXEMPT" - Sell short exempt
- e) "BOT" - Bought – Chicago Stock Exchange only
- f) "SLD" - Sold – Chicago Stock Exchange only
- g) "X" - Cross Order
- h) "XSHRT" - Cross Short Order
- i) "XSHRT EXEMPT" - Cross Short Exempt

Note: Cross and Cross Short orders are only valid for E-Book orders. And the Buyer Firm ID and Seller Firm ID information (Line 4b) is required for cross or cross short orders.



Line 2: Order Instructions (continued)

Technical Note:

The RE field on Line 4A is required by CHX

CHX accepts RE or REF on Line 4A

If an order is not flagged as "POSS DUPE" but the transmission sequence number located on the form trailer line is not increment, CHX will flag the order as "POSS DUPE" and it will be subjected to manual handling.

Example: POSS DUPE field.

L1.....	LA 212
.....	(blank line)
L2.....	POSS DUPE BUY

Example: CXL field

L1.....	LA 212
.....	(blank line)
L2.....	CXL BUY

L4A.....	RE LA 202/0909
----------	----------------

Example: Order Category field

L1.....	LA 212
.....	(blank line)
L2.....	BUY



Line 3: Basic Order Information

(1) (2) (2a) (3) (4)

L3	volume	symbol	suffix	price MKT	OB
----	--------	--------	--------	--------------	----

Volume or Quantity of Stock (required for orders)

The volume field indicates the number of shares involved in the order transaction. Volumes of 1 through 99 shares are considered odd-lots. Volumes of 100 shares (or multiples of 100) are considered round-lots. Mixed lots (e.g. volume of 101) are accepted.

This field varies between 1-6 numeric characters in length.

SOF Note: The 1-6 character length is an CHX allowance.

Symbol (required for orders)

A stock symbol for over-the counter orders usually is 4 alphabetic characters. Valid stock symbols for MAX/OTC orders are listed in the “MAX Eligible Issues List”, published monthly.

2a) Stock Suffix (when applicable)

Valid stock suffixes are listed in the “MAX Eligible Issues List” and in the booklets published by various market makers and NASDAQ.

For over-the-counter orders, this field is 1 alphabetic character in length.

Price/MKT (required for orders)

This stock price field specifies the ask or bid price of an order. Either a specific number is entered, or the word “MKT” (specifying whatever the current market price is for the particular stock) is entered.

A specific price indication is separated into a whole number, a decimal point ‘.’ and decimal part:

The whole number part (if required) is 1-7 numeric characters in length.

The decimal part (if required) may contain up to 4 places of precision.



Line 3: Basic Order Information (cont.)

OB Terms (optional)

“OB” = Or Better

Technical Note:

Volume field processing:

Fractions not reduced to the lowest denominator are allowed.

1-6 numeric characters will be allowed.

If more than 6 numerics are entered, the message is formatted using the first 6 digits.

Stock Symbol field processing:

The stock symbol is validated against an internal stock symbol table. Each stock symbol entry in this internal table contains a MAX or MAX/OTC indicator. Messages are routed accordingly based upon this indicator.

Price/MKT processing:

Any price which contains more than 4 digits of precision will be rejected with an “INVALID MPV”.



Line 3: Basic Order Information (cont.)

Example: Volume field.

L1.....	LA 212
.....	(blank line)
L2.....	BUY
L3.....	100

Example: Stock Symbol field.

L1.....	LA 212
.....	(blank line)
L2.....	BUY
L3.....	100 AAPL

Example: Stock Suffix field.

L1.....	LA 212
.....	(blank line)
L2.....	BUY
L3.....	100 NAVA

Example: Price/MKT field. (Market Order)

L1.....	LA 212
.....	(blank line)
L2.....	BUY
L3.....	100 AAPL MKT

Example: Price/MKT field. (Limit Order)

L1.....	LA 212
.....	(blank line)
L2.....	BUY
L3.....	100 AAPL 68.50



Line 3A: Additional Order Data (optional)

	(1)	(2)	(3)		(4)	(5)	(6)
L3A	EBK	AON	DAY GTC GTW GTM GT__ GA__		DNR DNI	CASH ND SELLER	P A etc.

Additional order data may consist of one or more of the terms shown below. When used, they must be entered in the proper sequential order from left to right – separated by single spaces.

1) Handle Instruction – E-Book Order Type (EBK) - If the criteria specified below is not met, it will be rejected.

- Stock needs to be an eBook issue.
- Orders cannot be both EBK and XPR.
- Order can only be a buy, sell or sell short.
- Order must be a round lot.
- Order can be a Limit or OB only.
- Time-in-Force must be “DAY” or “GT” date (where the date must be the current day).
- FOK or OC are permitted.
- No Settlement Type other than “Regular” can be specified (no Cash, Next Day, Seller Days).
- Cross or Cross with size orders are allowed.

Additionally, if a stock is an eBook issue, all orders with this stock need to have the eBook handling instruction (EBK) specified or they will get rejected.

If the firm would like to cancel, cancel/replace or request status of an EBK order, the Order Cancel, Order Cancel/Replace or Order Status Request message must have the EBK handling instruction in the message.

Cross or cross short orders are for eBook orders only. The Buyer Firm ID and Seller Firm ID information (Line 4b) is required for cross or cross short orders.

All or None

The AON field, when entered, represents a round-lot market or limit priced order that is to be executed in its entirety or not at all. Unlike an FOK (Fill or Kill), it is not to be treated as cancelled if not executed as soon as it is represented in the Trading Crowd. Instead, an unexecuted AON order will remain in the order book until it match, cancelled or purged per the specified Time-In-Force field.

This alphabetical field, when used, must appear with the exactly spelled word “AON”



Time-In-Force

This time-in-force field, when entered, specifies execution time limits on orders.

This field is 2-3 alphabetical characters in length. Possible entries must be one of the following words spelled exactly:

a) “DAY” = (Day). An order to buy or sell which, if not executed, expires at the end of the trading day on which it was entered.

Note: Orders not showing any time-in-force default to DAY orders.

b) “GTC” = (Good Till Cancelled). An order to buy or sell that remains in effect until it is either executed or cancelled. Sometimes referred to as an “open” order.



Line 3A: Additional Order Data (optional) (continued)

c) “GT” = (Good Till <date> or Good Till <time> - where <data> may be entered as “mm/dd/yy? Or ?mm/dd? (with the year implied), and <time> as “130 PM”. A market or limited price order that is to be represented in the Trading Crowd until the specified time (which must be entered), after which such order, or the portion not executed, is to be treated as cancelled.

d) “GTW” = (Good This Week). Same meaning as other GT orders except for the period specified.

e) “GTM” = (Good This Month). Same meaning as other GT orders except for period specified.

f) “GA” = (Good at specified hour). An order that becomes a market or limited price order at a specified time.

Do Not Increase/Reduce

Possible entries in this alphabetical field must be one of the following words spelled exactly:

a) “DNI” = (Do Not Increase). A limited order to buy, a stop order to sell or a stop limit order to sell that is not to have its shares increased on the ex-date as a result of a stock dividend or stock distribution.

b) “DNR” = (Do Not Reduce). A limited order to buy, a stop order to sell or a stop limit order to sell that is not to be reduced by the amount of an ordinary cash dividend on the ex-dividend date. A do not reduce order applies only to ordinary cash dividends; it should be reduced for other distributions such as when a stock goes “ex”, a stock dividend, or “ex” rights.

Delivery Schedule

The delivery schedule field specifies delivery dates incumbent upon the seller of the stock.

Possible entries in this alphabetical field must be one of the following words spelled exactly:



Line 3A: Additional Order Data (optional) (cont.)

a) "CASH" = (Cash). A transaction on the Floor that calls for delivery of the securities and payment on the same day.

b) "ND" = (Not Held). Delivery of the securities is due on the next business day following the day of the contract.

c) "SELLER" = (Seller<nn>). This is referred to as a Seller's Options – a special transaction on the exchange that gives the seller the right to deliver the stock at any time within a specified time denoted by <nn> above. This <nn> period ranges from 6-60 calendar days for round-lots and odd-lots.

Account Type

This field identifies the type of order that has been received by CHX. CHX accepts any of the various CMS standard account types:

P	-	Principal
A	-	Agency
I	-	Individual Investor
D	-	Program Trade, index arbitrage for Member/Member Organization
C	-	Program Trade, non-index arbitrage for Member/Member Organization
J	-	Program Trade, index arbitrage for individual customer
U	-	Program Trade, non-index arbitrage for individual customer
K	-	Program Trade, index arbitrage for other agency
Y	-	Program Trade, non-index arbitrage for other agency

SOF Note: Principal "P" orders are manually handled. If this field is not supplied, the account type is assumed to be Agency "A". Order sending firms are required to ensure accurate designation of account type.

Time-In-Force Time field processing:

If date is entered for a GT order as 6/6 on 9/23/85, the date sent to MAX will be 850623. Time is not formatted.

GA is formatted with no date.



Line 3A: Additional Order Data (optional)(cont.)

Delivery Schedule field processing:

CHX allows the numbers of days in “SELLER __” to be smaller than 6.

Example: Time-In-Force field. (Day Order)

L1.....	LA 212
.....	(blank line)
L2.....	BUY
L3.....	500 AAPL 68.50
L3A.....	DAY

Example: Time-In-Force field. (Good Till Cancelled)

L1.....	LA 212
.....	(blank line)
L2.....	BUY
L3.....	500 AAPL 68.50
L3A.....	GTC

Example: E-Book Order (EBK)

L1.....	LA 212
.....	(blank line)
L2.....	BUY
L3.....	500 AAPL 68.50
L3A.....	EBK DAY



Line 3B: Non-Standard Order Instructions (2-part orders)

(1)

(2)

L3B	CXL	BUY SL SSHRT SSHRT EXEMPT BOT SLD X XSHRT XSHRT EXEMPT
-----	-----	--

CXL (Cancel)

“CXL” = (Cancel). An order that cancels an entire, previously transmitted order with or without a replacement order.

SOF Note: On a cancellation with replacement, CHX requires that the RE data on Line 4A be entered with the replacement date. CHX does not support the short CXL/Replace format.

X/XSHRT Note: X, XSHRT and XSHRT EXEMPT orders can not be CXL or CXL/REPLACED. These orders must be canceled manually via phone.

Order Instruction

Refer to Line 2. Field 3 parameters for specific instructions on this field. Line 2 limitations also apply to Line 3B.

Example: Non-Standard Order Instructions

L1.....	LA 212
.....	(blank line)
L2.....	BUY
L3.....	500 AAPL 68.50
L3A.....	GTC
L3B.....	CXL BUY



Line 3C: Non-Standard Order Data (2-part orders)

L3C	volume	symbol	Suffi x	Price MKT	OB	--LMT
-----	--------	--------	------------	--------------	----	-------

The Line 3 descriptions, specifications, and limitations apply to the above fields.

Example: Non-Standard Order Data. (2-part orders)

L1.....	LA 212
.....	(blank line)
L2.....	BUY
L3.....	500 AAPL 68.50
L3A.....	GTC
L3B.....	CXL BUY
L3C.....	200 AAPL 69



Line 3D: Non-Standard Additional Order Data (2-part orders)

	(1)	(2)	(3)	(4)	(5)	(6)
L3A	EBK	AON	DAY GTC GTW GTM GT__ GA__	DNR DNI	CASH ND SELLER	P A etc.

The same descriptions, specifications, and limitations of Line 3A apply to the above fields.

Example: Non-Standard Order Data. (2-part orders)

L1.....	LA 212
.....	(blank line)
L2.....	BUY
L3.....	500 AAPL 68.50
L3A.....	GTC
L3B.....	CXL BUY
L3C.....	200 AAPL 69
L3D.....	DAY



Line 3E: Leaves Data Line

(1) (2)

L3E	LVS	DAY	GTC	GTW	GTM	GT__	GA__
-----	-----	-----	-----	-----	-----	------	------

This line is used with simple cancel orders (“CXL” is entered on Line 2). The volume on the original order is reduced to the amount in the LVS field. The original order keeps the same position in the Specialist’s book.

LVS

LVS is entered, followed immediately by the new reduced volume. Volume must be 1 to 4 numeric.

Time-In-Force

Specifies how long the order remains in effect if it is neither executed or cancelled.

SOF Note: CHX does not support this order type at this time.

Example: LVS Data.

L1.....	LA 212
.....	(blank line)
L2.....	CHX BUY
L3.....	200 AAPL 68.50
L3E.....	LVS 300



Line 3F: Restricted Order Data

L3F	//restricted order data (25 bytes)
-----	------------------------------------

Technical Note:

Line 3F information is accepted, but is not processed by CHX.



Second Blank Line (required for orders)

A blank line must precede the Line 4 information to segregate the order text from the trailer data. (i.e. Two line delimiters must precede Line 4.)



Line 4: Correspondent, Account Number, Shares

L4	correspondent	account number	shares
----	---------------	----------------	--------

Technical Note:

CHX will accept, but does NOT edit or verify Line 4 information, nor is the information formatted and sent to the MAX/OTC system.

Example: Correspondent, Account Number, and Shares.

L1.....	LA 212
.....	(blank line)
L2.....	BUY
L3.....	500 AAPL 68.50
L3A.....	GTC
.....	(blank line)
L4.....	111-22222-33



Line 4A: Reference Data/Miscellaneous Line

	(1)	(2)	(3)
L4A	RE	branch code	sequence number/date

If Line 4A does not contain the RE field, it may contain miscellaneous information. Multiple miscellaneous lines are valid.

1) Reference Data

The Reference Data Indicator field (required for a CXL type order).

Field 1 must contain “REF” or “RE” if the order is a Cancel or Cancel Replace order.

2) Branch Code

The branch code carries the same specifications as the branch code in Line 1.

3) Sequence Number/Date

The sequence number carries the same specifications as the branch code in Line 1.

The entry of a date is optional on a CXL type order, but required on a CXL/RPL blanks allowed).

Two formats for the date entry are allowed:

<mm>/<dd>/<yy> or <mm>/<dd> or
<mm><dd><yy> or <mm><dd>

where <mm> = month. Either one or two digits are accepted. No imbedded blanks are allowed.

<dd> = day. Either one or two digits are accepted. No imbedded blanks are allowed.

<yy> = year. Must be two digits. If left blank (implying the current year is the default), the slash “/” must not follow <dd>.



Line 4A: Reference Data/Miscellaneous Line (cont.)

Technical Notes:

Line 4A information is accepted with no editing or verification, unless RE information is indicated.

Example: Reference Data/Miscellaneous.

L1.....	LA 212
.....	(blank line)
L2.....	CXL BUY
L3.....	500 AAPL 68.50
L3A.....	GTC
.....	(blank line)
L4.....	111-22222-33
L4A.....	RE LA 202/0909



Line 4B: XFIRMS, Buyer Firm ID, Seller Firm ID

(1) (2) (3)

L4B	XFIRMS	Buyer Firm ID	Seller Firm ID
-----	--------	---------------	----------------

Line 4B contains XFIRMS tag and the Buyer and Seller Firm IDs for a Cross or Cross Short order. If and order has a Side of X or XSHRT or XSHRT EXEMPT, these fields must be filled.

4) XFIRMS

The XFIRMS field must contain the text “XFIRMS”. This field should only be populated for Cross and Cross Short Orders.

5) Buyer Firm ID

The Buyer Firm ID field is a 4 character ascii field containing the Firm Symbol for the Buy side of a Cross or Cross Short Order. Field 1 (XFIRMS) must contain “XFIRMS” when Buyer Firm ID is used.

6) Seller Firm ID

The Seller Firm ID field is a 4 character ascii field containing the Firm Symbol for the Sell side of a Cross or Cross Short Order. Field 1 (XFIRMS) must contain “XFIRMS” when Seller Firm ID is used.

Example: XFIRM.

L1.....	LA 212
.....	(blank line)
L2.....	BUY
L3.....	500 AAPL 68.50
L3A.....	GTC
.....	(blank line)
L4.....	111-22222-33
L4B.....	XFIRMS FIDB FIDS



Line 4C: Give Up, CFN

	(1)	(1a)	(2)	(2a)
L4C	gu	give-up id	cfn	all or part of 13 data

Line 4C contains Give-Up data and confirmations. Give-Up data and confirmation fields are each composed of two parts. For Give-Up data, the first part indicates type, and the second part denotes the abbreviated firm name for Give-Up purposed. For confirmations, the first part indicates type also, while the second part contains any or all of Line 3 fields (in their proper sequence). If both fields are present, Give-Up must come first.

Give-Up Indicator

Give-Up data is a 2 character alphabetic field. If entered, only one entry is possible:

a) "GU" = Give Up

1a) Give-Up ID

Give-Up ID is a variable length alphabetic field containing the abbreviated firm name.

Confirmation Indicator

Confirmation is a 3 character alphabetic field. If entered, only one entry is possible:

a) "CFN" = Confirmation

2a) Confirmation Data

Confirmation Data will contain all of the Line 3 fields (in their proper sequence) that need to be confirmed.



Line 4C: Give Up, CFN (cont.)

Technical Note:

CHX allows “CFN or “CFM”.

Example: Give-Up, CFN.

L1.....	LA 212
.....	(blank line)
L2.....	BUY
L3.....	500 AAPL 68.50
L3A.....	GTC
.....	(blank line)
L4.....	111-22222-33
L4C.....	CFN 500 XYZ



Line 4D: Member Firm Trailer Line – Sequence Number Line

L4D	member firm trailer line(s)
-----	-----------------------------

This line contains the Member Firm line sequence number.

Technical Notes:

- There must be a space between the sequence ID and the sequence number.

If the ID is bad the record is formatted and sent to MAX and MAX/OTC without doing a sequence number check.

The sequence number is calculated backwards from the ETX. Sequence checking can be done by line or by firm (in a multiple firm environment.)

Example:

L1.....	LA 212
.....	(blank line)
L2.....	BUY
L3.....	500 AAPL 68.50
L3A.....	GTC
.....	(blank line)
.....	MAX 555



OTC Reports

OTC REPORTS



Over-the-Counter Execution Report Output Format Schematic

L1	firm sequence identification	sequence number
L2	firm dependent information (clearing symbol)	
L3	branch code	sequence number
L4	operation of order	
L5	volume	stock price
L6	type	
L7	time in force	
L8	buyer seller volume	



Line 1: Firm Sequence Identification and Sequence Number
(variable)

(2)

L1	firm sequence identification	sequence number
----	------------------------------	-----------------

Firm sequence identification

1-4 character field inserted by CHX in accordance with what the firm wishes to see.

Sequence Number

1-4 character numeric field keeping count of the reports being sent out to the firm.

Together, the firm sequence identification and sequence number uniquely identify a report sent out to a given firm.

Example: Firm ID sequence number.

L1.....	MW 335
---------	--------



Line 2: Shared-Interface Identification (Clearing Symbol)

L2	Shared-interface identification (clearing symbol)
----	---

The contents of this field will be equal to that appearing on Line 0 of the original order. If Line 0 of the original order was not supplied (i.e. single firm line). Line 2 will be excluded from the execution report.

Example: Clearing Symbol.

L1.....	MW 335
L2.....	FIRM



Line 3: Branch Code, Sequence Number and Data of Entry

(1)

(2)

L1	branch code	sequence number
----	-------------	-----------------

Branch Code

1-4 character field which appeared on Line 1 of the original order.

Sequence Number

1-4 character numeric field which appeared on Line 1 of the original order. A firm's branch sequence number uniquely identify an order for a given firm on a given day.

Example: Branch Code and Sequence Number.

L1.....	MW 335
L2.....	FIRM
L3.....	LA 672



Line 4: Past Tense of Order Instruction

L4	past tense of order instruction
----	---------------------------------

This field will contain the past tense of the order instruction from the original order.

Example: Past Tense of Order Instruction

L1.....	MW 335
L2.....	FIRM
L3.....	LA 672
L4.....	SLD

Technical Notes:

Possible entries for this field are:

SLD	-	Sold	SLD SHRT EXEMPT
BOT	-	Bought	
SLD SHRT	-	Sold Short	



Line 5: Volume, Symbol, and Price

	(1)	(2)	(3)
L5	volume	stock symbol +suffix	price

Volume

1-6 character numeric field indication the number of stocks bought or sold.

2) Stock Symbol & Suffix

A 1-8 alphanumeric field that represents the CHX symbol of the issue bought or sold.

3) Price

Decimal format price with the whole price being up to 7 characters and decimal portion of up to 4 digits.

Example: Volume, Stock Symbol, and Price.

L1.....	MW 335
L2.....	FIRM
L3.....	LA 672
L4.....	SLD
L5.....	500 AAPL 100.25



Line 6: Order Terms

L6	original order terms
----	----------------------

This field will contain a representation of the original price terms.

Example: Original Order Terms

L1.....	MW 335
L2.....	FIRM
L3.....	LA 672
L4.....	SLD
L5.....	500 AAPL 100.25
L6.....	ON 100.25 LMT

L1.....	MW 335
L2.....	FIRM
L3.....	LA 672
L4.....	SLD
L5.....	500 AAPL 100.25
L6.....	ON MKT



Line 7: Time in Force

L7	Time in force
----	---------------

This field will contain the mnemonic that was specified on Line 3A of the original order.

Example: Time in Force

L1.....	MW 335
L2.....	FIRM
L3.....	LA 672
L4.....	SLD
L5.....	400 AAPL 100.25
L6.....	ON 100.25 LMT
L7.....	DAY



Line 8: Buyer and Seller Information (optional)

	(1)	(2)	(3)
L8	Buyer	Seller	Volume

Buyer

The clearing identifier of the party on the buy side of the match. If the firm entered a sell order, the buyer will be the clearing number or clearing symbol of the CHX omnibus account. If the firm entered a buy order, the buyer field will be the clearing number of the clearing symbol of the firm given up on the order.

Seller

The clearing identifier of the party on the sell side of the match. If the firm entered a buy order, the seller will be clearing number or clearing symbol of the CHX omnibus account. If the firm entered a sell order, the seller field will be the clearing number or the clearing symbol of the firm given up on the order.

Volume

Volume may be represented as the true whole number or in hundreds of the actual volume.

Example: Buyer and Seller Information

L1.....	MW 335
L2.....	FIRM
L3.....	LA 672
L4.....	SLD
L5.....	500 AAPL 100.25
L6.....	ON 100.25 LMT
L7.....	DAY
L8.....	BNET GUID500



APPENDIX

APPENDIX



Appendix A: Inbound Equity Message Formats

Simple Order Example (one firm per line)

L1.....	LA 1
.....	(blank line)
L2.....	BUY
L3.....	500 XYZ 68.50
L3A.....	GTC
.....	(blank line)
.....	MAX 101

Simple CHXPress (XPR) Order Example

L1.....	LA 1
.....	(blank line)
L2.....	BUY
L3.....	500 XYZ 68.50
L3A.....	XPR DAY

Simple E-Book (EBK) Order Example

L1.....	LA 1
.....	(blank line)
L2.....	BUY
L3.....	500 XYZ 68.50
L3A.....	EBK DAY

Simple Order Example (multi firms per line)

L0.....	FIRM
L1.....	LA 1
.....	(blank line)
L2.....	BUY
L3.....	500 XYZ 68.50
L3A.....	GTC



.....	(blank line)
.....	MAX 101

Simple Cancel Example

L1.....	LA 2
.....	(blank line)
L2.....	CXL BUY
L3.....	500 XYZ 68.50
L3A.....	GTC
.....	(blank line)
L4A.....	RE LA 1
.....	MAX 102



Appendix A

Inbound Equity Message Formats

Cancel/Replace Example

(Note: The first part of the order is the replace portion).

L1.....	LA 2
.....	(blank line)
L2.....	BUY
L3.....	500 XYZ MKT
L3A.....	DAY
L3B.....	CXL BUY
L3C.....	500 XYZ 68.50
L3D.....	GTC
.....	(blank line)
L4A.....	RFE LA 1/0909
.....	MAX 102

Stop Limit Order Example

L1.....	LA 1
.....	(blank line)
L2.....	BUY
L3.....	500 XYZ 68.50 STP
L3A.....	DAY
.....	(blank line)
.....	MAX 101

Simple Limit Order Example

L1.....	LA 1
.....	(blank line)
L2.....	BUY
L3.....	500 XYZ 68.50 STP 68.50 LMT
L3A.....	DAY
.....	(blank line)
.....	MAX 101



Appendix A

Outbound Equity Message Formats

RP 2
BUY 800 IBM MKT
UR STPD 123.62

RP 3
BUY 800 BAX PRA 123.62
UR OUT

RP 4
BUY 100 IBM 109.25
EX-DIVD CHANGE ORDER

RP 5
SL 500 AR 29
CHANGE ORDER

PU 18
SL 900 WLA 69.25
CORRECTED PRICE 69.32



Appendix B: Inbound/Outbound OTC Message Formats

Simple Sell (SL) Order

L1.....	FV 0698	
.....	(blank line)	
L2.....	SL	
L3.....	200 CMPH 28 OB	
L3A.....	DAY	
.....	(blank line)	
L4.....	60891087 03190942	
.....	DCOF 4044-5994-1 MW-X 0698	Trailer line containing the sequence Number ID (MW-X), plus the Sequence number (0698)

Resulting Confirmation of Execution

L1.....	MW 335
L2.....	FIRM
L3.....	FV 698
L4.....	SLD
L5.....	200 CMPH 28.12
L6.....	ON 28 OB
L7.....	DAY
L8.....	SPEC DEMO

Buy Order followed by a Cancel (CXL) Order

L1.....	FV 0547	
.....	(blank line)	
L2.....	BUY	
L3.....	30000 AAPL 32.34	
L3A.....	GTC	
.....	(blank line)	
L4.....	60885036 03190908	
.....	PXOF 3556-4292-1 MW-X 0547	Trailer line containing the sequence Number ID (MW-X), plus the Sequence number (0547).



Appendix B (cont.)

CXL for order

L1.....	FB 0608	
.....	(blank line)	
L2.....	CXL BUY	
L3.....	30000 AAPL 32.34	
L3A.....	GTC	
.....	(blank line)	
L4.....	60885036 -3190922	
L4A.....	RE FV 0547/0319	
	PXOF 3556-42 92-1 MW-X 0608	Trailer line containing the sequence Number ID (MW-X), plus the Sequence number (0608)

Resulting Confirmation of Cancel

L1.....	FV 0547	
L2.....	(blank line)	
L3.....	CXL BOT	
L4.....	30000 AAPL	
L5.....	ON 32.34 LMT	
L6.....	GTC	
L7.....	SPEC DEMO	Firm dependent information
L8.....	THE OTC SYSTEM	

Admin Message to the Firm

L1.....	MAXX A	
.....	MW 175	
L2.....	FIRM	destination firm
L3.....	ADMIN	
L3A.....	(blank line)	
.....	DY 00068	
L4.....	MANUAL CANCELLATION	
	CXL BOT	
	1000 CORE	
	ON 2.25 LMT	
	GTC	
	SPEC DEMO	
	THE OTC SYSTEM	Who we are - in this case The OTC System
.....		



Appendix C: Administrative and Report Status Formats and Responses

Admin Example

L1.....	LA1
L1A.....	ADMIN
.....	(blank line)
.....	GOOD MORNING
.....	CHICAGO STOCK EXCHANGE – MAX
.....	(blank line)
.....	MAX 101

Report Status Example

L1.....	LA1
.....	(blank line)
L2.....	REPORT STATS/B
L3.....	500 XYZ 68.50
L3A.....	DAY
.....	(blank line)
L4A.....	RE LA 1/0927
.....	MAX 101

Report Status Messages Formats

L1.....	MB 415
.....	(blank line)
L2.....	REPORT STATUS/S
L3.....	100 IBM 129.62 OB
L3A.....	DAY
.....	(blank line)
L4.....	054-000930-2
L4A.....	REF MB 388



Possible Report Status Response Messages

DJ 12345
RE REQ STAT DJ 12345
BUY 300 CWE 123.62 LMT
(blank line)
WE SHOW ORDER AS BEING CANCELLED.
THANK YOU

DJ 12345
RE REQ STATS DJ 12345
BUY 300 CWE 123.62 LMT
(BLANK LINE)
THESE 4 LINE
ARE A FREE
FORMAT MANUAL
REPONSE MSG.

DJ 12345
RE REQ STAT DJ 12345
BUY 300 CWE 123.62 LMT
(BLANK LINE)
PLS ACCEPT POSS DUP RPT FRM TDY,
EXECUTED AT: 123.25
THANK YOU.

DJ 12345
RE REQ STAT DJ 12345
BUY 300 CWE 123.62 LMT
(BLANK LINE)
TRADE IS BEING ADDED A/O
A PRIOR DAY. CUSTOMER
SERVICE WILL ADVISE
THANK YOU.

DJ 12345
RE REQ STAT DJ 12345
BUY 300 CWE 123.62 LMT
(BLANK LINE)
NOTHING DONE – 2000 SHARES
AHEAD ON CHICAGO
THANK YOU.



Possible Report Status Response Messages

DJ 12345
RE REQ STAT DJ 12345
BUY 300 CWE 123.62 LMT
(BLANK LINE)
NOTHING DONE – OUT OF RANGE
THANK YOU.

DJ 12345
RE REQ STATS DJ 12345
BUY 300 CWE 123.62 LMT
(BLANK LINE)
NOTHING DONE – YOUR OFFER
ON CHICAGO
THANK YOU.

DJ 12345
RE REQ STAT DJ 12345
BUY 300 CWE 123.62 LMT
(BLANK LINE)
NOTHING DONE – YOUR BID
ON CHICAGO
THANK YOU.

DJ 12345
RE REQ STAT DJ 12345
BUY 300 CWE 123.62 LMT
(BLANK LINE)
CHX DOES NOT SHOW
ORDER IN MAX
THANK YOU.

DJ 12345
RE REQ STAT DJ 12345
BUY 300 CWE 123.62 LMT
(BLANK LINE)
NOTHING DONE
THANK YOU.



Appendix D: CHX TCP/IP Connection Protocol

This appendix contains information/rules for firms to communicate with the Chicago Stock Exchange using the TCP/IP protocol.

Establishing a Connection

There are two methods for establishing communications between CHX and remote clients and they are as follows:

1. The Chicago Stock Exchange initiates the connection to the remote client.
2. The Chicago Stock Exchange will listen on a socket waiting for the remote client to initiate the connection. (This is the CHX preferred method.)

The following information is needed for the CHX to setup a connection:

1. TCP/IP address of remote client.
2. Remote TCP/IP port number.
3. The connection method (described above) required by the remote client.
4. Is there going to be message level acknowledgements?
5. Do you want CHX to provide sequence number checking?
6. The remote client specified STX value.
7. The keep alive timer interval (If zero there will not be a keep alive timer)

TCP/IP Message Header

The TCP/IP message header contains five fields and they are defined as follows:

Start - This is the remote client defined Start of Text character.

Type - This character value is the Message Type. Valid values are as follows:

- 1 - Normal Message (NORMAL_MSG)
- 2 - Acknowledgement Message (ACK_MSG)
- 3 - Negative Acknowledgement Message (NAK_MSG)
- 4 - Keep Alive Message (KEEPALIVE_MSG)
- 5 - Disconnect Message (DISCONNECT_MSG)
- 6 - Reset Sequence Number Message (RESET_SEQNUM_MSG)

Pad - This two character field is not used at this time.

Length - This integer value contains the length of the data portion of the TCP/IP message only. This field is in network byte order.



Sequence - This integer value contains the message sequence number. This field is in network byte order.

```
Struct TcpHeader
{
char Start;           /* Start of Text */
char Type;           /* Message Type */
char Pad[ 2 ];       /* Pad to longword bound */
int Length;         /* Message Length */
int Sequence;       /* Sequence Number */
}
```

TCP/IP Message

The TCP/IP message contains the TCP/IP Header and a character data stream. Some messages contain only the TCP/IP header. The following is the TCP/IP data structure definition:

```
#define MAX_MSG_SIZE      1200

Struct TcpMsg
{
struct TcpHeader Header;
char Data[ MAX_MSG_SIZE - sizeof( TcpHeader ) ];
}
```

Connection/Messaging Options

The Chicago Stock Exchange has the ability to configure connection/messaging features for each remote client connection. The following is a brief description of these configurable parameters.

STX Character

The remote client can specify the Start of Text character that they require.

Sequence Number Checking

This parameter allows the remote client to choose if sequence number checking should be done. If this option is selected the sequence number sent by the remote client will be validated. The following is a description of the functionality of the sequence number check:

- At connection time the sequence number checking starts at 1.



- If the sequence number received is less than the expected sequence number a possible duplicate message has been received. The message will be tagged and processed as a possible duplicate.
- If the sequence number received is greater than the expected sequence number a sequence number gap has been encountered. The expected sequence number will be set to the received sequence number plus one.

If the sequence number must be reset (to any value), the remote client must send a RESET_SEQNUM_MSG to the server. The server will reset the next expected sequence number to the value specified in the TCP/IP message header SEQUENCE field. When sending the reset sequence number message, only the TCP Header should be supplied (no data portion). The header should contain the following information:

TCP/IP Header

- *STX = remote client defined*
- *Type = 6 (RESET_SEQNUM_MSG)*
- *Length and Sequence = 0*

ACK / NAK Message Handling

This configuration parameter gives the remote client the ability to choose whether or not message level acknowledgements will be sent. If message level acknowledgement is selected, a ACK message will be sent to the remote client upon the server (CHX) receiving a normal data message. If the server receives a NAK message, the last message sent to the remote client will be re-sent. This message will be re-sent until the server receives a ACK message or the message retry limit has been exceeded. The message retry limit is a configurable parameter. When sending message level acknowledgements, only the TCP Header should be supplied (no data portion). The header should contain the following information:

TCP/IP Header

- *STX = remote client defined*
- *Type = 2 (ACK_MSG) / 3 (NAK_MSG)*
- *Length = 0*
- *Sequence = Sequence Number of message being ACKed or NAKed*

Keep Alive Message Handling

This configuration parameter gives the remote client the ability to choose whether or not keep alive messages will be sent. The first parameter (TIMEOUT) specifies the time interval (in seconds) in



which keep alive messages will be sent and should be received. There is a second parameter (MAXERRCNT) that specifies the maximum number of consecutive keep alive timer errors before terminating the connection. If a keep alive message has not been received within the TIMEOUT period MAXERRCNT times, a disconnect message will be sent and the connection terminated. When sending keep alive messages, only the TCP Header should be supplied (no data portion). Both the remote client and the server will process keep alive messages. The header should contain the following information:

TCP/IP Header

- *STX = remote client defined*
- *Type = 4 (KEEPALIVE_MSG)*
- *Length and Sequence = 0*

Disconnecting a Connection

When terminating the connection between the server and the remote client, a disconnect message will be sent. It is the responsibility of the side requesting the disconnection to send the disconnect message. When CHX receives a disconnect message, the connection will be terminated. When sending a disconnect message, only the TCP Header should be supplied (no data portion). The header should contain the following information:

TCP/IP Header

- *STX = remote client defined*
- *Type = 5 (DISCONNECT_MSG)*
- *Length and Sequence = 0*