

COMMODITY FUTURES AND OPTIONS

HIGH SPEED QUOTATION LINE

SPECIFICATION

Interexchange Technical Committee

Version 1.0

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Chapter 0 - Contents 0-2

0.02 Table of Contents

1.00 Preface

- 1.01 Scope of Specification
- 1.02 Interexchange Technical Committee
- 1.03 Commodity Exchanges
- 1.04 Vendors
- 1.05 Correspondents
- 1.06 Subscription to Specification Updates
- 1.07 Organization of Specification

2.00 Communications Interface

3.00 Transmission Characteristics

- 3.01 Synchronization
- 3.02 Character Set
- 3.03 "P/A Characters" Defined, Justified and Filled
- 3.04 "C/A Characters" Defined, Justified and Filled
- 3.05 Numeric Characters, Defined, Justified and Filled
- 3.06 Retransmission
- 3.07 Maximum Length of Message
- 3.08 SOH, STX and ETX Control Characters
- 3.09 Vertical Parity
- 3.10 Horizontal Parity

4.00 Field Groups

- 4.01 Field Group Definition and Content
- 4.02 Message Header
 - 4.02.1 Exchange ID
 - 4.02.2 Vendor ID
 - 4.02.3 Message ID
 - 4.02.3.1 Category Code
 - 4.02.3.2 Message Type Code
 - 4.02.4 Message Sequence Number
 - 4.02.5 Message Time Stamp

Chapter 0 - Contents 0-3

- 4.03 Contract Identification
 - 4.03.1 Commodity Code
 - 4.03.2 Delivery Month Code
 - 4.03.3 Delivery Year Code
 - 4.03.4 Fractional Indicator Code
- 4.04 Option ID
 - 4.04.1 Put/Call/Future Code
 - 4.04.2 Strike Price Code
- 4.05 Price
- 4.06 BATE Code
- 4.07 Volume Traded
- 4.08 Bid/Ask Size
- 4.09 Cumulative Volume
- 4.10 Open Interest
- 4.11 As-of Sequence Number
- 4.12 Indicator
- 4.13 Text
- 4.14 ETX Control Character
- 4.15 Session ID

Chapter 0 - Contents 0-4

- 5.00 Message Definitions
 - 5.01 A - Bid/Ask/Trade - Future - No Volume
 - 5.01.1 A/I & D - Insert & Delete
 - 5.02 B - Bid & Ask
 - 5.02.1 B/I & D - Insert & Delete
 - 5.03 C - Control Messages
 - 5.03.1 C/A - Start of Simulated Data
 - 5.03.2 C/B - End of Simulated Data
 - 5.03.3 C/C - Start of Communications Testing
 - 5.03.4 C/D - Start of Official Transmissions
 - 5.03.5 C/E - Market Opening Imminent
 - 5.03.6 Reserved
 - 5.03.7 C/G - Halt in Trading
 - 5.03.8 C/H - End of Transaction Reporting
 - 5.03.9 C/I - End of Official Transmissions
 - 5.03.10 C/J - End of Communications Testing
 - 5.03.11 C/K - Set Sequence Number
 - 5.03.12 Reserved
 - 5.03.13 Reserved
 - 5.03.14 C/N - Character Test Pattern -Part I
 - 5.03.15 C/O - Character Test Pattern -Part II
 - 5.03.16 Reserved
 - 5.03.17 Reserved
 - 5.03.18 C/R - Trading Resumed
 - 5.03.19 C/S - Simulated Data Warning
 - 5.03.20 C/T - Line Integrity Verification
 - 5.03.21 Reserved
 - 5.03.22 Reserved
 - 5.03.23 Reserved
 - 5.03.24 Reserved
 - 5.03.25 Reserved
 - 5.03.26 Reserved
 - 5.03.27 Formats of Control Messages
 - 5.04 Reserved
 - 5.05 E - Exceptional Quotation
 - 5.05.1 E/I & D - Insert & Delete

Chapter 0 - Contents 0-5

5.06	F - Market Condition
5.06.1	Fast
5.06.2	Fast End
5.06.3	Late
5.06.4	Late End
5.07	Reserved
5.08	H - High-Low-Last
5.08.1	H/" " - Composite Trading Day
5.08.2	H/S - Session
5.09	I - Volume & Open Interest
5.09.1	I/" " - Composite Trading Day
5.09.2	I/S - Session
5.10	J - Summary
5.10.1	J/" " - Composite Trading Day
5.10.2	J/S - Session
5.11	Reserved
5.12	Reserved
5.13	M - Market Price
5.13.1	M/I & D - Insert & Delete
5.13.2	M/C
5.13.1	M/A & B - Insert & Delete
5.14	N - Market Price - No Volume
5.14.1	N/I & D - Insert & Delete
5.14.2	N/C
5.14.1	N/A & B - Insert & Delete
5.15	O - Opening Range
5.15.1	O/" " - Composite Trading Day
5.15.2	O/S - Session
5.15.3	O/I, D & R - Insert, Delete & Revise
5.16	P - Closing Range
5.16.1	P/I, D & R - Insert, Delete & Revise
5.17	Q - Settlement Price & Limits
5.17.1	Q/S Session Summary
5.17.2	Q/S Final Settlement

Chapter 0 - Contents 0-6

5.18	R - Refresh
5.18.1	R/A - Abbreviated
5.18.2	Reserved R/S - Abbreviated Session Summary
5.18.3	Reserved
5.18.4	Reserved
5.18.5	R/E - Extended
5.19	S - Spread
5.19.1	S/I & D - Insert & Delete
5.19.2	S/C - Combination Trades
5.20	T - Bid/Ask/Trade - General Form
5.20.1	T/I & D - Insert & Delete
5.21	U - Special Range Quotations
5.22	V - Cumulative Volume
5.22.1	V/S - Session Summary
5.23	Reserved
5.24	X - Text
5.25	Y - Cash Prices
5.25.1	Y/I & D - Insert & Delete
5.25.2	Y/P - Previous Day's Settlement
5.25.3	Y/C - Date Included
5.26	Z - Contract Specifications
5.26.1	Z/C - Commodity Specifications
5.26.2	Z/M - Month Specifications
5.26.3	Z/O - Options Specifications
5.26.4	Z/S - Session Open/Close Specifications
5.26.5	Z/X - Future and Option Month Specifications for Combination Trades
6.0	Sequence of Transmissions
7.0	Globex Session Information

Appendices

- 1.03 - Exchanges
- 2.00 - Communication Interface
- 3.01 - Transmission Characteristics
- 3.02 - USASCII Character Set
- 4.02.2 - Vendor ID
- 4.03.1 - Commodity Codes
- 4.04 - Standard Scheme
- 4.06 - Bate Codes Application
- 5.05 - Exceptional Quotations Application
- 5.19 - Explanation of Category Code S, Type Code C as used by the CME.
- 7.00 - ITC Specifications changes for the CME Globex session.

1.00 Preface

1.01 Scope of Specification

This Specification describes the communications interface, message formats, and conventions for the transmission of price and other data from commodity exchanges to vendors in a computer readable format emphasizing data integrity and error recovery capability. The messages defined herein are not intended to be viewed by end users without computer reformatting. Vendors (and other subscribers, hereafter included in the term vendors) may develop their systems to read exchange lines with primary reference to this Specification. Significant particularities of each exchange's implementation of this Specification are enumerated in appendices attached hereto.

1.02 Interexchange Technical Committee

This Specification is issued under the auspices of the Interexchange Technical Committee (ITC). The ITC is an informal committee of technical representatives of commodity exchanges which meets on an as-needed basis. An exchange which actually or prospectively trades commodity futures or options and anticipates implementing this Specification (whether or not it sets a prospective implementation date) may participate in Committee deliberations. The Current officers of the Committee are:

Chairman:
Michael Boyle
Chicago Board of Trade
Room 940A
141 West Jackson Blvd.
Chicago, IL 60604
Telephone (312) 435-3566

Vice Chairman:

1.03 Commodity Exchanges

Commodity exchanges, or their designated processors (hereafter included in the term exchanges) which have implemented this Specification, or which anticipate implementing this Specification, are listed below:

<u>Exchange</u>	<u>Actual Date of Implementation</u>
American Commodities Corp.	<u>November 1988</u>
Chicago Mercantile Exchange	<u>September 1986</u>
Commodities Exchange Center	<u>February 1993</u>
Kansas City Board of Trade	<u>October 1985</u>
Minneapolis Grain Exchange	<u>February 1991</u>
Sydney Futures Exchange	<u>January 1988</u>
Philadelphia Board of Trade	<u>July 1986</u>
Winnipeg Commodity Exchange	<u>October 1990</u>

A list of individuals at each exchange who are involved with this specification or its implementation is included in Appendix 1.03 together with their respective telephone numbers, titles and areas of responsibility as they relate to this Specification.

1.04 Vendors

Actual and prospective subscribers (direct or indirect) who must be able to interpret lines conforming to this Specification are invited to

Chapter 0 - Contents 0-3

comment thereon. Comments may be supplied at vendor meetings called from time to time by the Interexchange Technical Committee or by contacting Committee officers directly by mail or telephone. A list of vendors is available as Appendix 1.04, but is not included as a normal part of the Specification.

1.05 Correspondents

Persons who are not exchanges or vendors (as defined above) but who are interested in this Specification will, at the discretion of the Committee, be placed on the Committee mailing list. A list of such correspondents is available on request as Appendix 1.05, but is not included as a normal part of the Specification.

1.06 Subscription to Specification Updates

Exchanges, vendors and correspondents may obtain a current copy of this specification by contacting:

Mr. Michael Boyle
Chicago Board of Trade
Suite 940-A
141 West Jackson Blvd.
Chicago, IL 60604
(312) 435-3566
Fax (312) 341-7333

1.07 Organization of Specification

The body of this document describes the common elements of the communications interface between exchanges and vendors. No exchange system will be regarded as conforming to this Specification which is inconsistent with any provision contained in the body of this Specification; however, it is not contemplated that each exchange will at all times implement each aspect of the Specification, nor is it contemplated that aspects of exchange implementation which are not described within the body of this Specification will be common among exchanges.

For example, the definition of message formats and identifying codes are established in the body of this Specification. No exchange will use a message format not identified in this Specification, nor will it use codes inconsistent with those identified in this specification. However, some exchanges may not use certain message formats or types identified in the body of this Specification. Conversely, the communications interface is not defined in the body of this Specification and is not expected to be common among implementing exchanges. The particulars of each exchange's implementation of this Specification are contained in the appendices.

Appendices will be numbered, to the extent possible, with reference to the overlying paragraphs of the body of this Specification.

2.00 Communications Interface

Each exchange will define its own communications interface.

The following exchanges have defined their respective interfaces in Appendix 2.00:

American Commodities Corporation
Chicago Mercantile Exchange
Commodities Exchange Center
Kansas City Board of Trade
Minneapolis Grain Exchange
Philadelphia Board of Trade
Sydney Futures Exchange
Winnipeg Commodity Exchange

3.01 Synchronization

Each exchange will define its transmission characteristics. The following exchanges have defined their respective transmission characteristics in Appendix 3.01:

American Commodities Corporation
Chicago Mercantile Exchange
Commodities Exchange Center
Kansas City Board of Trade
Minneapolis Grain Exchange
Philadelphia Board of Trade
Sydney Futures Exchange
Winnipeg Commodity Exchange

3.02 Character Set

All transmissions will be in USASCII, unmodified as indicated in the character set provided in Appendix 3.02. Each character will consist of seven (7) data bits, plus an eighth (8th) bit for parity (vertical redundancy check) which must be used by each exchange.

The standard ASCII character set will be utilized with the following limitations:

<u>Synchronous protocols</u>	<u>Asynchronous protocols</u>
Only the following control characters will be utilized:	Only the following control characters will be utilized:
SOH	CR
STX	
ETX	SOH
SYN	STX
US	ETX
Lower case characters, though permitted, will be avoided; no lower case characters will be used for Contract ID codes, Option ID codes or BATE codes DEL will not be utilized	Lower case characters, though permitted, will be avoided; no lower case case characters will be used for Contract ID codes, Option ID codes or BATE codes DEL will not be utilized

Note that while the foregoing character set limitations are deemed appropriate for the present, certain exchanges' implementation of this Specification may require the utilization of other control characters or the DEL character; in which case, the foregoing limitations would be relaxed.

3.03 "P/A Characters" Defined, Justified and Filled

"P/A Characters" Defined, Justified and Filled Printable ASCII characters including ASCII space will be used for codes within this Specification and will be referred to hereafter as "P/A Characters". All fields containing P/A Characters will be left justified and ASCII space character filled as appropriate.

3.04 "C/A Characters" Defined, Justified and Filled

Capital alpha characters will be defined as the capital letters A through Z as well as ASCII space. It is contemplated that fields specified to contain C/A Characters will be used for Contract ID and Option ID fields. Note, however, that vendors' systems may not contemplate multiple embedded ASCII space characters in Contract ID or Option ID codes for retrieval of information. Therefore, space filling of multiple C/A Character fields in the Contract ID field group is specified only for the Commodity Code field and in the Option ID field group in the case of a futures contract. Commodity Codes may not begin with a space, but may end with a space.

3.05 Numeric Characters Defined, Justified and Filled

Numeric Characters, Defined, Justified and Filled Numeric characters are defined as the numerals, 0 through 9, as well as ASCII space.

Fields containing numeric characters will be right justified and ASCII zero (0) filled as appropriate.

If there is no data available to fill a numeric field (as contrasted with the case where the appropriate value for the field is zero), then the field will be filled with ASCII space characters. Numeric fields subject to ASCII space character fill will be identified where appropriate.

3.06 Retransmission

Each exchange system will log every message sent, except that retransmissions of previously sent messages, Refresh Messages and Line Integrity Verification control messages will not be logged or available for retransmission. This log will provide a limited facility for message retransmission on the same day.

A vendor may request retransmission of a single message or a group of sequentially numbered messages by placing a telephone call to the exchange control center. The Vendor must specify the first and last Message Sequence Number in the sequence to be retransmitted. (Refer to Appendix 3.01 for detailed information concerning a respective exchanges Retransmission-related information).

Retransmission requests may be honored between the Start of Official Transmissions control message and the End of Official Transmissions control message.

The Vendor Identification field in the message header associated with each message retransmitted will contain two (2) P/A Characters identifying the vendor requesting the retransmission. Retransmitted messages will be received by all participants. If more than one (1) vendor requests retransmission of the same messages, or where the exchange believes that more than one (1) vendor may have missed the same messages, one (1) retransmission of the same messages will be addressed to "All Vendors" under Vendor ID "AV". Each vendor should process retransmissions addressed to Vendor ID "AV" whether or not such messages are requested by a particular vendor.

In synchronous protocols with multiple message blocking, there will be no mixing of retransmission messages with current messages in any multiple message block.

Messages retrieved for retransmission will be transmitted on a low priority basis so as not to interfere with or significantly delay transmission of current messages.

The Message sequence Number field in the Header associated with each message retransmitted will contain the Message Sequence Number of the message originally transmitted.

3.07 Maximum Length of Message

The number of characters in any single message, including control characters, will not exceed 240 characters. This value is deemed adequate for the foreseeable future but is subject to increase.

3.08 SOH, STX and ETX Control Characters

The control characters SOH and STX will be used at the beginning and end of the Header for each message. The ETX control character will follow each message.

3.09 Vertical Parity

Even parity is specified for asynchronous protocols. Odd parity is specified for synchronous protocols. Vertical parity is mandatory.

3.10 Horizontal Parity

At the option of each exchange, one (1) or more horizontal parity characters may be used immediately following the ETX control character. The form of horizontal parity will be defined by each exchange in its appendix to this Specification covering transmission characteristics.

4.02.1 Exchange ID

One (1) C/A Character will identify the exchange originating the message. The following Exchange ID codes have been specified:

<u>Code</u>	<u>Exchange</u>
A	American Commodities Corporation
B	Chicago Board of Trade
C	Commodities Exchange Center
G	Minneapolis Grain Exchange
H	Chicago Mercantile Exchange - GLOBEX® afternoon session
I	The International Futures Exchange (Bermuda) Ltd.
K	Kansas City Board of Trade
L	London International Financial Futures Exchange
M	Chicago Mercantile Exchange
N	New York Futures Exchange
O	Sydney Liquid Order Call Market (LOCAM)
P	Philadelphia Board of Trade
Q	Montreal Stock Exchange
S	Singapore International Monetary Exchange
S	Sydney Futures Exchange
T	Toronto Stock Exchange
W	Winnipeg Commodity Exchange
X	MidAmerica Commodity Exchange
Y	Sydney Computerized Overnight Market (SYCOM)
Z	New Zealand Futues and Options Exchange

4.02.2 Vendor ID

Two (2) P/A Characters will identify the vendor to which a retransmission or Refresh message is addressed. Vendor ID codes have been specified in Appendix 4.02.2.

4.02.3 Message ID

Two (2) P/A Characters will identify the message format and content. The first character is designated the message Category Code. The second character is designated the message Type Code.

The fundamental message format and content will generally be explicit from the message Category Code; however, the message format and content may also be affected by the message Type Code.

The majority of message formats defined herein are transmitted infrequently, or in low volume periods (e.g., after market close). In the interest of coding simplicity, but at the expense of line utilization, only a general format for most fundamental messages is defined, including all possible Field Groups appropriate to each message. However, in recognition of the high volume of Trade/Bid/Ask messages for futures, with no volume, an abbreviated message format is defined for such messages. Where message volume so indicates, other abbreviated message formats may be defined.

4.02.3.1 Category Code

The message Category Code will identify the following fundamental message formats and contents:

Code	Message	Section
A	Trade/Bid/Ask-Futures-No Volume	5.01
B	Bid & Ask	5.02
C	Control	5.03
E	Exceptional Quotation	
F	Fast Market	
H	High-Low	5.08
I	Volume & Open Interest	5.09
J	Summary	5.10
M	Bid and Ask Market	5.13
N	Bid and Ask Market-No Volume	5.14
O	Opening Range	5.15
P	Closing Range	5.16
Q	Settlement Price & Next	5.17
R	Refresh	5.18
S	Spread	5.19
T	Trade/Bid/Ask - General	5.20
U	Special Range Quotations	5.21
V	Cumulative Volume	5.22
X	Text	5.24
Y	Cash Prices	5.25
Z	Contract Specifications	5.26

4.02.3.2 Message Type Code

The message Type Code will, in conjunction with the message Category Code, explicitly define the format and content of the message. Type Codes are specified for each message Category Code in conjunction with the definition of each message.

4.02.4 Message Sequence Number

Every message will contain a six (6) digit numeric Message Sequence Number.

The Message Sequence Number counter will be reset to zero(0) by the generation of the Start of Communications Testing control message. All transmissions (except simulated data from Start of Simulated Data through End of Simulated Data, inclusive) between the Start of Communication Testing control message until the Start of Official Transmissions control message will have a Message Sequence Number of zero (0). The Message Sequence Number will be set to one (1) when the Start of Official Transmissions control message is sent. The Message Sequence Number will be incremented by one (1) as each succeeding message, not a retransmission of a

preceding message, a Refresh Message, or a Line Integrity Verification control message is sent.

Note that the set Message Sequence Number control message must increment the Message Sequence Number by at least one (1), but may increment such number by more than one (1). When a message is retransmitted, the Message Sequence Number is not advanced; the Message Sequence Number entered in the message is the same as that which was entered in the original message. When a Line Integrity Verification control message or a Refresh message is sent, the Message Sequence Number is not advanced; the Message Sequence Number of the preceding message is sent.

4.02.5 Message Time Stamp

Each message will always contain the exchange time stamp of the event which gave rise to the message. Current messages, (i.e., messages which are sent in a timely and sequential manner) will carry the exchange system time at which they were entered. Insert and Delete messages which are sent either out of sequence, or in an untimely manner in sequence, will carry the exchange system time as of the time of the original transaction. Time will be represented as HHMMSS for the time zone in which the exchange is located.

4.03 Contract Identification**4.03.1 Commodity Code**

The Commodity Code is a two (2) C/A Character field containing the Commodity Code selected by the exchange for the particular commodity. No Commodity Code will have a leading space character (in order to avoid confusion with a Commodity Code with a trailing space).

A listing of Commodity Codes selected by exchanges is contained within the ITC document titled "ITC Committee Symbols Reference Guide". Duplications of official exchange Commodity Codes by more than one exchange is contemplated by this Specification; however, no duplication of Commodity Codes by one exchange (defined by the Exchange ID code) is permitted by this Specification.

An option contract may be identified by a Commodity Code other than that of the underlying futures contract; alternatively, the Commodity Code of the underlying futures contract may be used for an option contract.

4.03.2 Delivery Month Code

The month in which a commodity will be delivered is defined by the following codes:

<u>Month</u>	<u>Code</u>
January	F
February	G
March	H
April	J
May	K
June	M
July	N
August	Q
September	U
October	V
November	X
December	Z
Spot Delivery/ Index Information	Y

4.03.3 Delivery Year Code

The last digit of the year in which the commodity is to be delivered is used as the Delivery Year Code. For transmissions related to Spot Delivery/Index Information ('Y' Delivery Month Code), Delivery Year Code is Blank.

4.03.4 Fractional Indicator Code

All fractions are expressed as fractions or in decimals as is customary for the particular commodity. Note that, although the Fractional Indicator Code is included in the Commodity Code Field Group, it is not to be used to differentiate one commodity from another (e.g., there will not be one Contract ID of PBK23 and another of PBK24 on the same exchange).

4.03.4 Fractional Indicator Code (cont'd)

The Fractional Indicator Code will be one (1) P/A Character as follows:

Fraction	Code	Explanations as needed, where W = Whole Number.
1/1	0	
1/10	1	
1/100	2	
1/1000	3	
1/10000	4	
1/100000	5	
1/1000000	6	
1/10000000	7	
1/100,000,000	8	
1/1,000,000,000	9	
1/2	H	WWWWWWF where F = 0 or 1
1/4	Q	WWWWWWF where F = 0 - 3
1/8	E	WWWWWWF where F = 0 - 7
1/16	S	WWWWWWF where FF = 00 - 15
1/32	T	WWWWWWF where FF = 00 - 31
1/64	X	WWWWWWF where FF = 00 - 63
1/128	O	WWWWFFF where FFF = 000 - 127
Half 64ths	Y	WWWWFFH where FF = 00 - 63, H = 0 or 5
1/256	F	WWWWFFF where FFF = 000 - 255
Half 32nds	U	WWWWFFH where FF = 00 - 31, H = 0 or 5
Quarter 32nds	V	WWWWFFH where FF = 00 - 31, H = 0,2,5, or 7
2 1/2 point increments (.00025) Effective Fractional Indicator of 4	R	WWWWWWF F = 0, price is WWWW.WWF0 F = 2, price is WWWW.WWF5 F = 5, price is WWWW.WWF0 F = 7, price is WWWW.WWF5
1/8 Point Increments (.00125), Effective Fractional Indicator of 5	C	WWWWWWF F = 0, price is WWWW.WW000 F = 1, price is WWWW.WW125 F = 2, price is WWWW.WW250 F = 3, price is WWWW.WW375 F = 4, price is WWWW.WW500 F = 5, price is WWWW.WW625 F = 6, price is WWWW.WW750 F = 7, price is WWWW.WW875

1/4 Point Increments, Effective Fractional Indicator of 6	W	WWWWWWF F = 0, price is WW.WWWWF0 F = 2, price is WW.WWWWF5 F = 5, price is WW.WWWWF0 F = 7, price is WW.WWWWF5
1/4 Point Increments, Effective Fractional Indicator of 4	J	WWWWWWF F = 0, price is WWWW.WWF0 F = 2, price is WWWW.WWF5 F = 5, price is WWWW.WWF0 F = 7, price is WWWW.WWF5

4.04 Option ID

4.04.1 Put/Call/Future Code

Puts, calls, and futures will be identified by the following codes:

<u>Contract</u>	<u>Code</u>
Put	P
Call	C
Future	Space

4.04.2 Strike Price Code

Whenever possible, strike prices will be encoded by each exchange in a two (2) byte C/A Character field; however, no assurance is made that each strike price authorized for trading by an exchange will be capable of being encoded into a Strike Price Code. Accordingly, the Committee recommends that vendors implement in their systems indexing of options contracts on the numeric representation of the strike price rather than on the alpha Strike Price Code. Additionally, it is recommended that the numeric strike price field representation be displayed for user verification. If a future, this field will be space filled.

When possible, exchanges may elect to encode strike prices in accordance with the scheme defined in Appendix 4.04.2.

4.05 Price

The Price field will be a six (6) character numeric field. The delineation of the whole number portion of the price and the decimal/fractional portion of the price will be defined by the Fractional Indicator Code (e.g., a price of 123 4/8th cents will be displayed as 001234).

No truncation of price data is permitted by this Specification except for high order zeros for commodities which trade in fractions of 1/10,000,000 or smaller. Therefore, commodities such as livestock which are customarily traded in increments of 2 1/2 per hundredweight with the 1/2 being implicit will be quoted in increments of .025 with the .005 always explicit.

This Specification contemplates the quotation without truncation of commodities which trade in increments as small as 1/1,000,000 such as Japanese Yen where one (1) yen is worth approximately U.S. \$0.004288. Any commodity which is traded in smaller increments will have truncated leading zeros, such as Italian lire where one (1) lire is worth approximately U.S. \$0.0008285. Italian lire, traded in four (4) non-zero digits will be quoted with the first leading zero (0) truncated. Such truncation would be implicit from the Fractional Indicator Code which, in the case of a price with seven (7) digits to the right of the decimal place, is defined as seven (7).

4.06 BATE Code

Associated with many price fields will be a BATE code to designate the price as a Bid, Ask, Trade or Exceptional Quotation as defined below. It is the policy of some exchanges to include bids and asks or certain exceptional quotations in the official high and low price range of the day or among the "last price changes" during the day, while other exchanges exclude such quotations from the official high and low range of the day or, from among the "last price changes" during the day. Exchanges will express their policies in this regard in Appendix 4.06.

<u>Code</u>	<u>Indication</u>
Space	Trade
A	Ask
B	Bid
P	Exchange for Physical
I	Inactive - Nominal, No Trade
M	Match/Cross Trade
N	Nominal
C	Changing Transaction
X	Option Exercise
F	Fast Trade
G	Bid Fast
H	Ask Fast
J	Large Order
K	Small Order
L	Late Trade (Time may not be exact)
O	Late Bid (Time may not be exact)
Q	Late Ask (Time may not be exact)
R	Request for Quote (See Appendix 4.06 CME)
D	Delete Request for Quote (see Appendix, 4.06 CME)
S	Cabinet Trade
T	Cabinet Bid
U	Cabinet Ask
V	Nominal Cabinet
W	Nominal Update

4.07 Volume Traded

The volume of contracts (reported or estimated) which were traded with respect to a particular transaction may be indicated in a five (5) digit numeric field. If volume is not provided this field will be space filled. Associated with many Volume Traded fields will be an indicator to designate the volume reported as either estimated or actual volume.

4.08 Bid/Ask Size

The number of contracts bid, or the number of contracts asked, with respect to a given bid or ask may be indicated in a five (5) digit numeric field. If size is not provided, this field will be space filled.

4.09 Cumulative Volume

The Cumulative Volume traded during the day or volume cleared or the previous day may be indicated in a seven (7) digit numeric field. Associated with many Cumulative Volume fields will be an indicator to designate the volume reported as either estimated or actual volume. If Cumulative Volume is not provided this field will be space filled.

4.10 Open Interest

The number of contracts which were open as of the close of business on the previous day may be indicated in a seven (7) digit numeric field. If open interest is not provided, this field will be space filled.

4.11 As-of Sequence Number

For an Insert or Delete message reference will be made to the As-of Sequence Number to indicate the sequence as of when the transaction occurred.

The message Type Code I will indicate that the message is to be inserted; the As-of Sequence Number will indicate the Message Sequence Number immediately preceding the message to be inserted. The As-of Message Sequence Number may be filled with the Message Sequence Number of the immediately preceding message for the same contract, or for any message of any Category or Type; for example, if a May wheat contract message sent at 08:08:08 with a Message Sequence Number of 80008 is followed by a Text message at 08:08:09 with a Message Sequence Number of 80009, a May wheat transaction which occurred at 08:08:10 may be inserted with an As-of Sequence Number of either 80008 or 80009, at the option of the exchange.

If more than one (1) message is inserted with the same As-of Sequence Number reference, the sequence of the inserted messages will be indicated by their respective time stamps; however, for vendors which do not store (and therefore cannot compare) time stamps, it is recommended that the messages be deemed to be inserted in the sequence transmitted by the exchange.

4.11 As-of Sequence Number (cont.)

The Message Type Code D will indicate that the message is to be deleted; the As-of Sequence Number will indicate the Message Sequence Number of the original message to be deleted.

The As-of Sequence Number will be a six (6) digit numeric field.

4.12 Indicator

Indicator codes will be used to indicate the:

- 1) Direction of the market on openings and closings;
- 2) Net change in price from the previous day;
- 3) Spread Price/Differential indicators;
- 4) Estimated or actual volume.

Applicable P/A Character codes are as follows:

Market Direction Indicators

+	Up
-	Down
S	Stable
Space	Market direction not indicated by exchange
>	Up Cabinet
<	Down Cabinet

Spread Price/Differential Indicators

P	Spread Prices
F	Spread Differentials (Positive)
N	Spread Differentials (Negative)

Volume: Estimated/Actual

E	Estimated
A	Actual

4.13 Text

Text messages will be 63 P/A Characters.

4.14 ETX Control Character

Each message will end with an ETX control character.

4.15 Session ID

Exchanges may decide to define various trading sessions to constitute a trading day. Exchange selections to date include:

<u>Exchange</u>	<u>Session ID</u>	<u>Approx. Time Period</u>
CME	01	Electronic Trading Hours (GLOBEX®)
	02	Regular Trading Hours

5.00 Message Definitions

5.01 Category Code A - Bid/Ask/Trade - Future - No Volume

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID	Contract ID	5
Price	Bid Price	6
BATE Code	BATE Code	1
ETX	ETX	1
	Total Length	32

This message is an abbreviated form of message Category Code T Bid/Ask/Trade - General Form. Since many such messages are expected to be transmitted for futures without volume, this abbreviated form of message has been provided with neither an Option ID Field Group nor a Volume Field Group.

5.01.1 Category Code A - Type Codes I & D

Bid/Ask/Trade - Futures - No Volume--Insert/Delete

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID	Contract ID	5
Price	Bid Price	6
BATE Code	BATE Code	1
As-of Sequence Number	As-of Sequence Number	6
ETX	ETX	1
	Total Length	38

5.02 Category Code B - Bid & Ask

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID	Contract ID	5
Option ID	Option ID	9
Price	Bid Price	6
Bid/Ask Size	Bid Size	5
Price	Ask Price	6
Bid/Ask Size	Ask Size	5
ETX	ETX	1
	Total Length	56

The Bid or Ask size fields may be filled at the option of the exchange; if size is not provided these fields will be space filled.

Both the bid price and the ask price will be provided in each message; if either or both fields are ASCII space filled the respective fields of the vendor's display should be blanked.

**5.02.1 Category Code B - Type Codes I & D
Bid & Ask--Insert/Delete**

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID	Contract ID	5
Option ID	Option ID	9
Price	Bid Price	6
Bid/Ask Size	Bid Size	5
Price	Ask Price	6
Bid/Ask Size	Ask Size	5
As-of Sequence Number	As-of Sequence Number	6
ETX	ETX	1
	Total Length	62

5.02.2 Category Code B Bid/Ask,

Type Code C - Implied Bid/Ask

Type Code K - Cabinets

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID	Contract ID	5
Option ID	Option ID	9
Price	Bid Price	6
BATE Code	BATE Code	1
Bid/Ask Size	Bid Size	5
Price	Ask Price	6
BATE Code	BATE Code	1
Bid/Ask Size	Ask Size	5
ETX	ETX	1
	Total Length	58

5.03 Category Code C - Control Messages

Control messages are provided to apprise vendors' systems of significant exchange system status changes and to test system integrity.

Control messages will consist of a standard Header including a Category Code and a Type Code which will explicitly identify the system control message. The text of a control message will consist of 46 P/A Characters, plus a 47th ETX control character, and will contain a specified message structure which is subject to processing by vendors' systems. Valid message Type Codes are as follows:

5.03.1 Type Code A - Start of Simulated Data

Simulated data streams are to be used primarily to test software modifications. Simulated data will be representative of genuine data; therefore, vendors must provide adequate controls to insure that their data bases are not updated by simulated data.

The Start of Simulated Data message will be transmitted at least three times prior to the transmission of simulated data. The first transmission will be made in lieu of the Official Transmission message; therefore, the first Start of Simulated Data message will have a Message Sequence Number of one (1). All subsequent Start of Simulated Data messages will also be sent with Message Sequence Numbers of one (1), and the Vendor ID field will be filled with "AV" in accordance with the retransmission protocol (alternatively, the Vendor ID field may be filled with "TV" or a specific Vendor's ID if all simulated data to be transmitted is to be addressed to the respective Vendor ID).

In lieu of the Line Integrity Verification control message a Simulated Data Warning control message will be sent each minute with simulated data. Therefore, vendors who program to recognize the Simulated Data Warning control message should process no more than one or two (2) minutes of simulated data even if the Start of Simulated Data messages are missed.

Whenever possible, testing will be conducted off-line (with the ticker line disconnected), with dummy Commodity Codes, or with retransmissions addressed to a particular vendor or to "Test Vendor" (Vendor ID, TV). However, these precautions are subject to human failure and may not be practical in all circumstances. Therefore, vendors are expected to program to recognize the Start of Simulated Data and Simulated Data Warning control messages.

5.03.2 Type Code B - End of Simulated Data

Each cycle of simulated data will be followed by the End of Simulated Data message. The End of Simulated Data message will be transmitted at least three (3) times after each cycle of simulated data. The first transmission will be made in lieu of the End of Official Transmissions message. All subsequent End of Simulated Data messages will be sent with the same Message Sequence Number as was sent with the first such message, and the Vendor ID field will be filled with "AV" in accordance with the retransmission protocol (alternatively, the Vendor ID field may be filled with "TV or a specific Vendor's ID if all simulated data was addressed to the respective Vendor ID).

Vendors must provide adequate controls to insure that the End of Simulated Data message is registered in their systems to insure that genuine data transmitted thereafter is properly updated in their data bases.

Any of the following should indicate an error condition while vendor's system is in "Simulated Data" mode:

1. Receipt of the Line Integrity Verification control message.
2. Reversion of the Message Sequence Number to one (1).
3. Passing of the time by which the first market is open on the exchange.

Recovery from any such error will be facilitated by retransmission of the valid messages which were missed, provided that the error is detected promptly.

5.03.3 Type C - Start of Communications Testing

The Start of Communications Testing message indicates that the exchange system has been turned on and that communications testing will be initiated promptly. The Start of Communications Testing message does not imply that the exchange will open.

The Start of Communications Testing control message will reset the Message Sequence Number to zero (0).

Only the Line Integrity Verification control message (Type T), the Character Test Pattern control messages (Type N and Type O), Start of Simulated Data (Type A), simulated data, Simulated Data Warning (Type S) and End of Simulated Data (Type B) will be sent between the Start of Communications Testing Message and the Start of Official Transmissions message.

All messages sent after Start of Communications Testing and before Start of Official Transmissions (except simulated data) will contain a Message Sequence Number of zero (0).

No message between the Start of Communications Testing and Start of Official Transmissions messages will be logged or available for retransmission.

In normal processing, the Start of Communications Testing message will be sent at least 30 minutes prior to the opening of the first contract.

5.03.4 Type Code D - Start Of Official Transmissions

The Start of Official Transmissions control message indicates that the messages to follow will contain official exchange information including text messages and trading data.

In normal processing, the Start of Official Transmissions message will be sent not sooner than 60 minutes, nor later than five (5) minutes, prior to the opening of the first contract.

The Message Sequence Number for Start of Official Transmissions will always be one (1).

5.03.5 Type Code E - Market Opening Imminent

Not sooner than two (2) minutes before, nor later than one (1) minute before, the opening of the first market of the day the Market Opening Imminent message will be sent.

5.03.6 Reserved**5.03.7 Type Code G - Halt in Trading**

If the exchange determines to halt trading temporarily, it will so indicate by transmitting a Halt in Trading message.

A Halt in Trading may be announced for:

- 1 All contracts on an exchange by space filling the Contract ID or Option ID Field Groups of the message.
- 2 All contracts for a single commodity (i.e., Puts, Futures and Calls) by filling the Commodity Code in the Contract ID Field Group. (All other fields will be space filled).
3. Only a single contract for a single commodity by filling each field in the Contract ID and Option ID Field Groups.

The time at which the exchange expects to resume trading will be indicated in the designated field; in the event that the exchange changes its expected resumption of trading time, the Halt in Trading message will be transmitted again with the new expected resumption of trading time. If trading is not expected to resume that day, the time field will be filled with six (6) nines (9's). If the time at which trading is expected to resume cannot be determined, the time field will be space filled.

5.03.8 Type Code H - End of Transaction Reporting

End of Transaction Reporting indicates that the exchange has terminated all normal transmissions and all Inserts and Deletes.

5.03.9 Type Code I - End of Official Transmissions

End of Official Transmissions message is transmitted to indicate that the exchange has terminated all official transmissions for the day. After the End of Official Transmissions message has been transmitted, no further messages will be transmitted except for Type T - Line Integrity Verification, Type A - Start of Simulated Data, simulated data, Type S - Simulated Data Warning, Type B - End of Simulated Data, and the Character Test Pattern control messages Types N and O.

5.03.10 Type Code J - End of Communications Testing

The End of Communications Testing message will be transmitted to indicate that the system has terminated all transmissions, including Type T - Line Integrity Verification. (A failure to receive a Line Integrity Verification Message for more than one (1) minute, without having received an End of Communications Testing Message implies an exchange system or line failure.)

5.03.11 Type Code K - Set Sequence Number

The Set Sequence Number message will be transmitted to advise vendors that the Message Sequence Number is to be reset to the value registered in the Message Sequence Number in the Header Field Group of the message.

The Message Sequence Number should be reset by the exchange to a value greater than the last message sent.

5.03.12 Reserved**5.03.13 Reserved**

5.03.14 Type Code N - Character Test Pattern -Part I

Two (2) Character Test Pattern control messages have been defined to verify the integrity of the exchange and vendors' systems to generate and identify, respectively, the principal characters which may be utilized in the system specification. The set of P/A Characters specified in this document is broken down into the two (2) message Types N and O which will be sent serially in a testing sequence.

**5.03.15 Type Code O - Character Test Pattern-Part II
See Type N.****5.03.16 Reserved****5.03.17 Reserved****5.03.18 Type Code R - Trading Resumed**

When an exchange determines to resume trading after having announced a halt in trading with a Control Message Type Code G, it will transmit a Trading Resumed message. The filling of fields will correspond to the description of the Halt in Trading message.

The Simulated Data Warning control message will be sent with simulated data in lieu of the Line Integrity Verification Control message; that is, generation of the Start of Simulated Data by the exchange system should toggle on the routine (each minute) generation of Simulated Data Warning messages, and toggle off the generation of Line Integrity Verification message, Generation of the End of Simulated Data Message by the exchange should toggle off the generation of Simulated Data Warning messages, and toggle on the generation of Line Integrity Verification messages. "Start" and "End" of Simulated Data messages should set vendors' systems in "Simulated Data" and "Normal Data" modes respectively. Receipt of the Simulated Data Warning Message while a vendor's system is in "Normal Data" mode, or receipt of the Line Integrity Verification message while a vendor's system is in "Simulated Data" mode, implies an error condition.

Other than the Type Code and text, the Simulated Data Warning message will be used in the context of simulated data in a manner analogous to that of the Line Integrity Verification message.

5.04 Reserved

5.05 Category Code E - Exceptional Quotation

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID	Contract ID	5
Option ID	Option ID	9
Price	Price	6
BATE Code	Exceptional Indicator	1
Volume Traded	Volume Traded	5
Indicator	Actual/Estimated	1
ETX	ETX	1
	Total Length	47

47

The Exceptional Quotation message will be used to report unusual quotes which an exchange may wish to distinguish from other categories of messages. The nature of the quote will be indicated in the BATE code field.

Applicable codes include:

<u>BATE Code</u>	<u>Quotation</u>
P	Exchange For Physicals
I	Inactive - Nominal, No Trade
M	Match/Cross Trade
N	Nominal
C	Changing Transaction
X	Option Exercise
E	Erratic
R	Request for Quote
D	Delete Request for Quote

Each exchange may specify special processing for its Exceptional Quotations. For example, one (1) exchange may specify that Exchanges For Physicals are to be included in volume but not in the day's high/low range; another exchange may specify that its Exchanges For Physicals are to be excluded from volume but included in the day's high/low range. A given Exceptional Indicator may have different meanings and special processing rules from one exchange to another, as indicated by the Exchange ID, but will have a unique meaning and special processing rules whenever used by a particular exchange. Particular exchange specifications for special processing of Exceptional Quotations are included in Appendix 5.05.

5.05.1 Category Code E - Type Codes I & D

Exceptional Quotation--Insert/Delete

May 22, 1998

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID	Contract ID	5
Option ID	Option ID	9
Price	Bid Price	6
BATE Code	Exceptional Indicator	1
Volume Traded	Volume Traded	5
Indicator	Actual/Estimated	1
As-of Sequence Number	As-of Sequence Number	6
ETX	ETX	1
	Total Length	53

5.06 Category Code F - Market Condition

5.06.1 Category Code F - Type Code F Fast Market

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID	Contract ID	5
Option ID	Option ID	9
ETX	ETX	1
	Total Length	34

The Fast Market message will be used to indicate that the market for a particular commodity and/or Future has been characterized as "fast" by appropriate officials of the exchange. If only the Commodity Code field in the Contract ID Field Group's filled, then all types of contracts (i.e., Futures, Puts, and Calls) for delivery in all months (and at all exercise prices) of the reported commodity are to be regarded as "fast".

5.06.2 Category Code F - Type Code E
End Fast Market

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID	Contract ID	5
Option ID	Option ID	9
ETX	ETX	1
	Total Length	34

The End Fast Market message will be used to indicate that the market for a particular commodity and/or future has been characterized as normal by appropriate officials of the exchange, i.e., the reported commodity and/or future is no longer characterized as "fast".

5.06.3 Category Code F - Type Code L

Late Market

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID	Contract ID	5
Option ID	Option ID	9
ETX	ETX	1
	Total Length	34

The Late Market message will be used to indicate that the market for a particular commodity and/or Future has been characterized as "Late" by appropriate officials of the exchange. If only the Commodity Code field in the Contract ID Field Group's filled, then all types of contracts (i.e., Futures, Puts, and Calls) for delivery in all months (and at all exercise prices) of the reported commodity are to be regarded as "Late".

5.06.4 Category F - Type Code M - End Late Market

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID	Contract ID	5
Option ID	Option ID	9
ETX	ETX	1
	Total Length	34

The End Late Market message will be used to indicate that the market for a particular commodity and/or future has been characterized as normal by appropriate officials of the exchange, i.e., the reported commodity and/or future is no longer characterized as "Late".

5.07 Reserved

5.08 Category Code H - High-Low-Last Messages

5.08.1 Type " " - Composite Trading High-Low-Last

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID	Contract ID	5
Option ID	Option ID	9
Price	High Price	6
BATE Code	High Price BATE	1
Price	Low Price	6
BATE Code	Low Price BATE	1
Price	Last Price	6
BATE Code	Last Price BATE	1
ETX	ETX	1
	Total Length	55

The High-Low-Last message may be sent (but is not required to be sent) following the deletion of any message which is numerically equal to the high or low price of the day or the last price. Although use of the High-Low-Last message is at the option of each exchange, an exchange which elects to utilize the High-Low-Last message should constantly send it after each deletion and without regard to whether the transaction to be deleted was the particular transaction which set the high or low price for the day and without regard to whether the deletion results in a change in the high-low range.

For example, on an exchange which updates highs with bids, the following sequence of messages:

```

103B
99-101 Opening Range
102
101
102B
102 Delete

```

would be followed by a High-Low-Last message where High = 99-102B; Low = 99-101; and Last = 99-102B.

The High-Low-Last message may also be sent at any time at the discretion of the exchange. For example, an exchange may send a High-Low-Last message for one (1) contract each minute, or whenever the ticker line has been idle for ten (10) seconds. However, exchanges should avoid sending High-Low-Last messages in bursts to avoid full-line loading. The High-Low-Last message may also be used to correct the high-low range where the particular message which should have updated the range

cannot readily be identified for processing as an Insert or Delete message.

No High-Low-Last message will be prepared and queued for transmission such that it may follow other messages which would supercede the High-Low-Last message. For example, if a High-Low-Last message is prepared at 12:00:00 and a transaction is entered at 12:00:01 at a price higher than the high price in the High-Low-Last message, the High-Low-Last message should be sent prior to the subsequent message setting a new high.

5.08.2 Type S - Session High Low-Last Category H

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID	Contract ID	5
Option ID	Option ID	9
Price	Session High Price	6
BATE Code	Session High Price BATE	1
Price	Session Low Price	6
BATE Code	Session Low Price BATE	1
Price	Session Last Price	6
BATE Code	Session Last Price BATE	1
Session ID	Session ID	2
ETX	ETX	1
	Total Length	57

Session High-Low-Last message may be sent (at the discretion of an exchange) following the deletion of any message which might affect Sessions Highs or Lows.

Chapter 5.00 Message Definitions

5-17

5.09 Category Code I - Volume & Open Interest**5.09.1 Type " " - Composite Trading Volume & Open Interest**

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID	Contract ID	5
Option ID	Option ID	9
Cumulative Volume	Volume Cleared	7
Open Interest	Open Interest	7
Cumulative Volume	Exchanges For Physicals	7
Cumulative Volume	Deliveries	7
Cumulative Volume	Option Exercises	7
ETX	ETX	1
	Total Length	69

Volume cleared on the previous day, open interest as of the close of the previous day, exchanges of futures for physicals, deliveries and option exercises may be filled in the indicated fields. If no data is available for a particular field, the field will be space filled.

5.09.2 Type S - Session Volume & Open Interest

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID	Contract ID	5
Option ID	Option ID	9
Cumulative Volume	Volume Cleared	7
Open Interest	Open Interest	7
Cumulative Volume	Exchanges For Physicals	7
Cumulative Volume	Deliveries	7
Cumulative Volume	Option Exercises	7
Session ID	Session ID	2
ETX	ETX	1
	Total Length	71

Session Volume and Open Interest Messages may be sent at the discretion of each Exchange indicating just the individual session information for volume and open interest.

May 22, 1998

5.10 Category Code J - Summary Messages

5.10.1- Type " " - Composite Trading Day Summary

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID	Contract ID	5
Option ID	Option ID	9
Price	First Opening Range Price	6
BATE Code	First Opening Range BATE Code	1
Price	Second Opening Range Price	6
BATE Code	Second Opening Range BATE Code	1
Indicator	Opening Range Market Direction Indicator	1
Price	Single Opening Range Price	6
BATE Code	Single Opening Range BATE Code	1
Price	Day High Price	6
BATE Code	Day High BATE Code	1
Price	Day Low Price	6
BATE Code	Day Low BATE Code	1
Price	Settlement Price	6
Price	First Closing Range Price	6
BATE Code	First Closing Range BATE Code	1
Price	Second Closing Range Price	6
BATE Code	Second Closing Range BATE Code	1
Indicator	Closing Range Market Direction Indicator	1
Price	Net Change	6
Indicator	Net Change Indicator	1
Price	Limit Up Tomorrow	6
Price	Limit Down Tomorrow	6
Price	Underlying Commodity Price - (Option only)	6
Indicator	Restricted Option Indicator for tomorrow	1
Cumulative Volume	Cumulative Volume Today	7
Indicator	Actual/Estimated	1

May 22, 1998

Cumulative Volume	Volume Cleared Yesterday	7
Open Interest	Open Interest Yesterday	7
ETX	ETX	1
	Total Length	139

5.10 Category Code J - Summary Messages

5.10.2- Type "C" - Composite Trading Day Summary -
Cabinet

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID	Contract ID	5
Option ID	Option ID	9
Price	First Opening Range Price	6
BATE Code	First Opening Range BATE Code	1
Price	Second Opening Range Price	6
BATE Code	Second Opening Range BATE Code	1
Indicator	Opening Range Market Direction Indicator	1
Price	Single Opening Range Price	6
BATE Code	Single Opening Range BATE Code	1
Price	Day High Price	6
BATE Code	Day High BATE Code	1
Price	Day Low Price	6
BATE Code	Day Low BATE Code	1
Price	Settlement Price	6
BATE Code	Settlement BATE Code	1
Price	First Closing Range Price	6
BATE Code	First Closing Range BATE Code	1
Price	Second Closing Range Price	6
BATE Code	Second Closing Range BATE Code	1
Indicator	Closing Range Market Direction Indicator	1
Price	Net Change	6
Indicator	Net Change Indicator	1
Price	Limit Up Tomorrow	6
Price	Limit Down Tomorrow	6
Price	Underlying Commodity Price - (Option only)	6
Indicator	Restricted Option Indicator for tomorrow	1
Cumulative Volume	Cumulative Volume Today	7

May 22, 1998

Indicator	Actual/Estimated	1
Cumulative Volume	Volume Cleared Yesterday	7
Open Interest	Open Interest Yesterday	7
ETX	ETX	1
	Total Length	140

5.10.2 Type S - Session Summary

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID	Contract ID	5
Option ID	Option ID	9
Price	Session First Opening Price	6
BATE Code	Session First Opening Price BATE Code	1
Price	Session Second Opening Price	6
BATE Code	Session Second Opening Price BATE Code	1
Price	Session High Price	6
BATE Code	Session High Price Code	1
Price	Session Low Price	6
BATE Code	Session Low Price BATE Code	1
Price	Session Last Price (or Session First Closing Price)	6
BATE Code	Session Last Price BATE Code	1
Price	Session Next to Last Price (or Session Second Closing Price)	6
BATE Code	Session Next to Last Price BATE Code	1
Indicator	Indicator	1
Session ID	Session Identifier	2
ETX	ETX	1
	Total Length	79

The Session Summary message would be transmitted after a particular trading session has ended, and, at the discretion of an exchange, be transmitted prior to the beginning of the next session.

The Indicator will be used to signify whether the session has been "closed". The session might be closed by a Closing or Suspension Quotation. If "closed" by a Closing Quotation, the character "C" would be inserted. If by a "suspension", the character "S" is used. A blank indicates the session is not yet "closed".

5.11 Reserved

5.12 Reserved

5.13 Category M - Type Code " "
Bid & Ask Market; Bid/Ask/Trade Message

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID	Contract ID	5
Option ID	Option ID	9
Price	Market Bid Price	6
BATE Code	Market Bid Size	5
Price	Market Ask Price	6
BATE Code	Market Ask Size	5
Price	Last Price	6
BATE Code	Last Price BATE	1
Volume Traded	Volume Traded	5
Indicator	Actual Estimated	1
ETX	ETX	1
	Total Length	69

**5.13.1 Category M - Type Code I, D
Bid & Ask Market; Bid/Ask/Trade Insert/Delete**

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID	Contract ID	5
Option ID	Option ID	9
Price	Market Bid Price	6
BATE Code	Market Bid Size	5
Price	Market Ask Price	6
BATE Code	Market Ask Size	5
Price	Last Price	6
BATE Code	Last Price BATE	1
Volume Traded	Volume Traded	5
Indicator	Actual Estimated	1
As-of Sequence No.	As-of Sequence No.	6
ETX	ETX	1
	Total Length	75

May 22, 1998

Inserts and deletes apply to the Last Price only. A current Market Bid and Ask Price will be transmitted.

**5.13.2 Category M - Type Code C
Bid & Ask Market; Bid/Ask/Trade Cabinet Message**

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID	Contract ID	5
Option ID	Option ID	9
Price	Market Bid Price	6
BATE Code	Market Bid Size	5
Price	Market Ask Price	6
BATE Code	Market Ask Size	5
Price	Last Price	6
BATE Code	Last Price BATE	1
Volume Traded	Volume Traded	5
Indicator	Actual Estimated	1
ETX	ETX	1
	Total Length	69

**5.13.3 Category M - Type Code A & B
Bid & Ask Market
;Bid/Ask/Trade Cabinet--Insert/Delete**

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID	Contract ID	5
Option ID	Option ID	9
Price	Market Bid Price	6
BATE Code	Market Bid Size	5
Price	Market Ask Price	6
BATE Code	Market Ask Size	5
Price	Last Price	6
BATE Code	Last Price BATE	1

Volume Traded	Volume Traded	5
Indicator	Actual Estimated	1
As-of Sequence No.	As-of Sequence No.	6
ETX	ETX	1
	Total Length	75

Inserts and deletes apply to the Last Price only. A current Market Bid and Ask Price will be transmitted.

5.14 Category Code N - Type Code " "
Bid & Ask Market;Bid/Ask/Trade
Message (No Volume)

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID	Contract ID	5
Option ID	Option ID	9
Price	Market Bid Price	6
Price	Market Ask Price	6
Price	Last Price	6
BATE Code	Last Price BATE	1
ETX	ETX	1
	Total Length	53

5.14.1 Category Code N - Type Code I, D
Bid & Ask Market;Bid/Ask/Trade
Message (No Volume) - Insert/Delete

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID	Contract ID	5
Option ID	Option ID	9
Price	Market Bid Price	6
Price	Market Ask Price	6
Price	Last Price	6
BATE Code	Last Price BATE	1
As-of Sequence No.	As-of Sequence No.	6
ETX	ETX	1
	Total Length	59

Inserts and deletes apply to the Last Price only. A current Market Bid and Ask Price will be transmitted.

5.14.2 Category Code N - Type Code C
 Bid & Ask Market; Bid/Ask/Trade Cabinet
 Message (No Volume)

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID	Contract ID	5
Option ID	Option ID	9
Price	Market Bid Price	6
Price	Market Ask Price	6
Price	Last Price	6
BATE Code	Last Price BATE	1
ETX	ETX	1
	Total Length	53

5.14.3 Category Code N - Type Code A, B
 Bid & Ask Market; Bid/Ask/Trade Cabinet
 Message (No Volume) - Insert/Delete

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID	Contract ID	5
Option ID	Option ID	9
Price	Market Bid Price	6
Price	Market Ask Price	6
Price	Last Price	6
BATE Code	Last Price BATE	1
As-of Sequence No.	As-of Sequence No.	6
ETX	ETX	1
	Total Length	59

Inserts and deletes apply to the Last Price only. A current Market Bid and Ask Price will be transmitted.

5.15 Category Code O - Opening Range

5.15.1 Type " " - Composite Opening Range

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID	Contract ID	5
Option ID	Option ID	9
Price	First Price	6
BATE Code	First Price BATE Code	1
Price	Second Price Price	6
BATE Code	Second Price BATE Code	1
Indicator	Market Direction	1
Volume Traded	Volume Traded	5
Indicator	Actual/Estimated	1
ETX	ETX	1
	Total Length	55

The Opening Range message contains the prices which a vendor should display in its opening range fields. Exchanges which report opening range prices in the sequence in which they occurred will fill the prices in the same sequence in the Opening Range message. The Opening Range message may either precede or follow other messages pertaining to the particular contract. In the event that the market opens at a single price, that price and associated BATE code will appear in the First Price and BATE fields; the Second Price and BATE fields of the message will be space filled.

The Market Direction Indicator will indicate that the market was rising (+) or falling (-) from the first to last quotations occurring during the opening interval. A Market Direction Indicator, "S", will connote that the market was stable during the opening interval. A space character in the Market Direction Indicator indicates that the exchange elected not to report the direction of the market.

The volume traded field may be reported at the option of the exchange. Volume reported in the Opening Range message will exclude all volume which may have been reported in other messages pertaining to transactions which occurred during the opening interval. If volume is not reported, the field will be space filled.

5.15.2 Type S - Session Opening Range

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID	Contract ID	5
Option ID	Option ID	9
Price	First Price	6
BATE Code	First Price BATE Code	1
Price	Second Price Price	6
BATE Code	Second Price BATE Code	1
Indicator	Market Direction	1
Volume Traded	Volume Traded	5
Indicator	Actual/Estimated	1
Session ID	Session ID	2
ETX	ETX	1
	Total Length	57

Session Opening Range messages may be sent at the discretion of each Exchange indicating the opening range by session.

5.15.3 Category Code O - Type Codes I, D, & R

Opening Range--Insert/Delete/Revise

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID	Contract ID	5
Option ID	Option ID	9
Price	First Price	6
BATE Code	First Price BATE Code	1
Price	Second Price Price	6
BATE Code	Second Price BATE Code	1
Indicator	Market Direction	1
Volume Traded	Volume Traded	5
Indicator	Actual/Estimated	1
As-of Sequence No.	As-of Sequence No.	6
ETX	ETX	1

May 22, 1998

	Total Length	61
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A Revise type of message is provided for the Opening Range Message. The Revise message is the logical sum of an Insert message and a Delete message. An exchange may send a Revise Opening Range message with both price fields space filled to, in effect, delete its opening range.

5.16 Category Code P - Closing Range

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID	Contract ID	5
Option ID	Option ID	9
Price	First Price	6
BATE Code	First Price BATE Code	1
Price	Second Price Price	6
BATE Code	Second Price BATE Code	1
Indicator	Market Direction	1
Volume Traded	Volume Traded	5
Indicator	Actual/Estimated	1
ETX	ETX	1
	Total Length	55

The Closing Range message contains the prices which a vendor should display in its closing range fields. Exchanges which report closing range prices in the sequence in which they occurred will fill the prices in the same sequence in the Closing Range message. The Closing Range message will always follow the last timely transaction message pertaining to a particular contract; however, Insert and Delete messages may follow the Closing Range message.

In the event that the market closes at a single at price, the price and associated BATE Code will appear in the First Price and BATE Code fields; the Second Price and BATE fields of the message will be space filled.

The Market Direction Indicator will indicate that the market was rising (+) or falling (-) from the first to last quotations occurring during the closing interval. A Market Direction Indicator, "S", will connote that the market was stable during the closing interval. A space character in the Market Direction Indicator field indicates that the exchange elected not to report the direction of the market.

The volume traded may be reported at the option of the exchange. Volume reported in the Closing Range message will exclude all volume which may have been reported in other messages pertaining to transactions which occurred during the closing interval. If volume is not reported, the field will be space filled.

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID	Contract ID	5
Option ID	Option ID	9
Price	First Price	6
BATE Code	First Price BATE Code	1
Price	Second Price Price	6
BATE Code	Second Price BATE Code	1
Indicator	Market Direction	1
Volume Traded	Volume Traded	5
Indicator	Actual/Estimated	1
As-of Sequence No.	As-of Sequence No.	6
ETX	ETX	1
	Total Length	61

A Revise type of message is provided for the Closing Range message. The Revise message is the logical sum of an Insert and a Delete message. An exchange may send a Revise Closing Range message with both price fields space filled to, in effect, delete its closing range.

5.17 Category Code Q - Settlement Price & Limits

The Settlement Price & Limits message may be sent following the close of trading in a particular session for a particular contract. The fields will be filled with the settlement price for the current day and the highest price and lowest price at which trading will be permitted on the following session. In the event that no limits are established for the particular contract on the following session, the high and low limit price field will be space filled. In the event that no settlement price is reported for the particular contract, the settlement price will be space filled.

No Insert or Delete message format is specified for the Settlement Price & Limits message. In the event that an erroneous Settlement Price & Limits message is sent, it will be followed by a Settlement Price & Limits message with the correct data. No special coding will identify the corrected message.

Refer to the appendicies for a specific exchange to determine how corrections, deletions are supported.

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID	Contract ID	5
Option ID	Option ID	9
Price	Settlement	6
Price	High Limit	6
Price	Low Limit	6
ETX		<u>1</u>
		52

5.17.1

Category Code Q - Settlement Price & Limits

Type Code C - Cabinet Summary

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID	Contract ID	5
Option ID	Option ID	9
Price	Settlement	6
Bate Code	Settlement Bate	1
Price	High Limit	6
Bate Code	High Limit Bate	1
Price	Low Limit	6
Bate Code	Low Limit Bate	1
Session Identifier	Session ID	2
ETX		<u>1</u>
		57

Since a cabinet record trades at a whole dollar value below the minimum allowable tic price, the low limit price field will always be space filled.

5.17.2

Category Code Q - Settlement Price & Limits

Type Code F - Final Settlement

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID	Contract ID	5
Option ID	Option ID	9
Price	Settlement	6
Bate Code	Settlement Bate	1
Price	High Limit	6
Bate Code	High Limit Bate	1
Price	Low Limit	6
Bate Code	Low Limit Bate	1
Session Identifier	Session ID	2
ETX		<u>1</u>

5.18 Category Code R - Refresh

Refresh messages will be used in the event that an exchange or a vendor has had a significant system failure, and it is impractical to retransmit all previous messages in order to restore the basic elements of a vendor's data base. The design of Refresh messages required compromising considerations of message length, line speeds, data base integrity, and exchange data base design. The result was a pluralistic approach of, initially two (2), and potentially several, types of Refresh messages.

The first type, the Abbreviated Refresh message, includes only the Opening Range, Day High, Day Low, and a single last price. No As-of Sequence Numbers are included with any price in this Abbreviated Refresh message type; therefore, Insert and Delete messages applied to a "refreshed" data base can be processed mechanically only to the extent that As-of Sequence Number references are not required; other cases may require manual intervention. These limitations notwithstanding, the Abbreviated Refresh message has the advantage of being of less than half the length of the Extended Refresh message.

The second type, the Extended Refresh message, includes the Opening Range, Day High, Day Low, four (4) Last Prices, Bid and Ask prices, as well as Cumulative Volume. An As-of Sequence Number is associated with each of these price fields. Accordingly, Insert and Delete messages applied to a "refreshed" data base can be processed with reference to As-of Sequence Numbers.

The Message Sequence Number will not be advanced when a Refresh message is sent nor will a Refresh message be retransmitted. Refresh messages will contain current information as of the time they are transmitted; i.e., Refresh messages will not be prepared and queued for transmission after subsequent transactions have been reported on the ticker line.

The last prices may, at the option of the exchange, include the last trade prices or the last price changes (i.e. trades, bids higher than the preceding price change, and asks lower than the preceding price change).

In view of the time required to transmit a full run of Refresh messages, exchanges may wish to implement an indexing scheme to permit their most active contracts to be "refreshed" first.

Exchanges may delay or limit the number of Refresh messages transmitted in accordance with line load conditions.

5.18.1 Category Code R - Type A
Refresh -- Abbreviated

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID	Contract ID	5
Option ID	Option ID	9
Price	First Opening Range Price	6
BATE Code	First Opening Range BATE Code	1
Price	Second Opening Range Price	6
BATE Code	Second Opening Range BATE Code	1
Price	Day High Price	6
BATE Code	Day High BATE Code	1
Price	Day Low Price	6
BATE Code	Day Low BATE Code	1
Price	Last Price	6
BATE Code	Last Price BATE Code	1
ETX	ETX	1
	Total Length	69

5.18.2 Category Code R - Type S
Abbreviated Refresh -- Session

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID	Contract ID	5
Option ID	Option ID	9
Price	First Opening Range Price	6
BATE Code	First Opening Range BATE Code	1
Price	Second Opening Range Price	6
BATE Code	Second Opening Range BATE Code	1
Indicator	Indicator	1
Price	Day High Price	6
BATE Code	Day High BATE Code	1

Price	Day Low Price	6
BATE Code	Day Low BATE Code	1
Price	Last Price	6
BATE Code	Last Price BATE Code	1
Session ID	Session ID	2
ETX	ETX	1
	Total Length	72

The First and Second "Opening" Range Price(s) and BATE Code(s) will reflect the first quotes of the session. Such quotes may be indentified as OPENINGS or RESUMPTIONS at the discretion of the Exchange. The Indicator field will contain "O" for OPENINGS and "R" for RESUMPTIONS.

5.18.3 Reserved

5.18.4 Reserved

5.18.5 Reserved

5.19 Category Code S - Spread

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID	High Contract ID	5
Option ID	High Option ID	9
Price	High Price or First Differential	6
BATE Code	High BATE Code	1
Volume Traded	High Contract Volume	5
Contract ID	Intermediate Contract ID	5
Option ID	Intermediate Option ID	9
Price	Intermediate Price or Second Differential	6
BATE Code	Intermediate BATE Code	1
Volume Traded	Intermediate Contract Volume	5
Contract ID	Low Contract ID	5
Option ID	Low Option ID	9
Price	Low Price or Third Differential	6
BATE Code	Low BATE Code	1
Volume Traded	Low Contract Volume	5
Indicator	Price/Differential Indicator	1
Spread Type ID	Spread Type ID	2
EXT	EXT	1
		101

The Spread format will/provide for both two- and three-sided spreads as well as "crush" spreads in soybeans and products. The Price/Differential Indicator will indicate whether the spread is quoted at outright prices (Code P), the positive differentials between prices quoted (Code F) and negative differentials between prices quoted (Code N). In the case of a spread involving two (2) contracts quoted as a differential, only the first price field will be filled with numerics; the second and third price field will be space filled. In the case of a spread involving three (3) contracts quoted as a differential, the first price field will contain the differential between the high and intermediate contracts, the second price field will contain the differential between the intermediate and low contracts and the third price field will contain spaces. However, in the case of a crush spread quoted as a differential, only the first price field will be filled with numerics; the second and third price field will be space filled.

In no case is a Spread message to update a vendor's opening range, high/low, last sale, last price change, or last activity display. Spreads should only be displayed in a manner which explicitly identifies them as such.

<u>Spread Type Identifier</u>	<u>Meaning</u>
"SP"	Intra-Commodity Spread
"IS"	Inter-Commodity Spread
"CR"	Soybeans Crush
"KR"	Crude Oil "Crack"
"ST"	Straddle
"C2"	Two-Way Conversion
"C3"	Three-Way Conversion
"BU"	Butterfly
"RA"	Ratio Spread
"B1"	First Side of a BOX STRADDLE
"B2"	Second Side of a BOX STRADDLE
"VT"	Vertical
"HZ"	Horizontal
"DG"	Diagonal
"ST"	Straddle
"SG"	Strangle
"GT"	Gut
"BO"	Options Butterfly
"BF"	Futures Butterfly
"IB"	Iron Butterfly
"CO"	Options Condor
"CF"	Futures Condor
"SY"	Synthetic or Combo
"BX"	Box
"JR"	Jelly Roll
"SK"	Sparks
"SR"	Strip
"XT"	Christmas Tree
"DB"	Double
"RR"	Risk Reversal or Fence or Split-Strike Synthetic
"TE"	Tandem (e.g., Ted Calendar)
"VS"	Vertical Straddle Spread
"HS"	Horizontal Straddle Spread
"HG"	Horizontal Strangle Spread /Strangle Swap
"DS"	Diagonal Straddle Spread
"FB"	Futures Bundle
"BM"	Boomerang
"FS"	Futures Strip
"UB"	Stubs
"PK"	Packs

Combination with
both Future & Options
Legs

"FO"	Future vs. Option
"CV"	Conversion or Reversal
"DN"	Delta - Neutral

Spread TypeFields Updated

"B1", "B2",	High Contract ID High Options ID High Price/Differential High BATE Code Low Contract ID Low Option ID
"CR", "KR", "BU"	High Contract ID High Option ID High Price/Differential High BATE Code Intermediate Contract ID Intermediate Option ID Low Contract ID Low Option ID
"C2"	High Contract ID High Option ID High/Price/Differential High BATE Code Low Contract ID Low Option ID Low Price/Differential Low BATE Code
"C3"	High Contract ID High Option ID High Price/Differential High BATE Code Intermediate Contract ID Intermediate Option ID Intermediate Price/Differential Intermediate BATE Code Low Contract ID Low Option ID Low Price/Differential Low BATE Code

<u>Spread Type</u>	<u>Fields Updated</u>
"RA"	High Contract ID High Option ID High Price/Differential High BATE Code High Volume (will contain a Ratio, i.e., at least in CBOT's case) Low Contract ID Low Option ID Low Contract Volume (CME) Price/Differential ID (CME) Spread Type Indicator (CME)
"VT", "HZ", "DG", "ST"	High Contract ID
"SG", "GT", "SY", "BX"	High Options ID
"JR", "SR", "DB", "RR"	High Price/Differential
"VS", "HS", "DS", "HG"	High BATE Code High Contract Volume Low Contract ID Low Options ID Low Contract Volume Price/Differential Indicator Spread Type Indicator
"BO", "IB", "CO", "XT"	High Contract ID High Options ID High Price/Differential High BATE Code High Contract Volume Intermediate Contract ID Intermediate Options ID Intermediate Contract Volume Low Options ID Low Contract Volume Price/Differential Indicator Spread Type Indicator

<u>Spread Type</u>	<u>Fields Updated</u>
"CV"	High Contract ID High Options ID High Price/Differential High BATE Code High Contract Volume Intermediate Contract ID Intermediate Volume Low Contract ID Low Options ID Low Contract Volume Price/Differential Indicator Spread Type Indicator
"IS", "SP", "TE", "FS" "FB"	High Contract ID High Options ID High Bate Code High Contract Volume Low Contract ID Low Contract Volume Price/Differential Indicator Spread Type Indicator Price/Differential High BATE Code High Contract Volume Low Contract ID Low Contract Volume Price/Differential Indicator Spread Type Indicator
"BF", "CF", "BM"	High Contract ID High Price/Differential High BATE Code High Contract Volume Intermediate Contract ID Intermediate Volume Low Contract ID Low Contract Volume Price/Differential Indicator Spread Type Indicator
"FO", "DN"	High Contract ID High Price/Differential High BATE Code Low Contract ID Low Options ID Low Price Low Contract Volume Price/Differential Indicator Spread Type Indicator

5.19.1 Category Code S - Type Codes I & D
Spread--Insert/Delete

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID	High Contract ID	5
Option ID	High Option ID	9
Price	High Price or First Differential	6
BATE Code	High BATE Code	1
Volume Traded	High Contract Volume	5
Contract ID	Intermediate Contract ID	5
Option ID	Intermediate Option ID	9
Price	Intermediate Price or Second Differential	6
BATE Code	Intermediate BATE Code	1
Volume Traded	Intermediate Contract Volume	5
Contract ID	Low Contract ID	5
Option ID	Low Option ID	9
Price	Low Price or Third Differential	6
BATE Code	Low BATE Code	1
Volume Traded	Low Contract Volume	5
Indicator	Price/Differential Indicator	1
Spread Type ID	Spread Type ID	2
As-of Sequence Number	As-of Sequence Number	6
EXT	EXT	1
		107

Chapter 5.00 Message Definitions
5.19.2 Category Code S - Type Code C
Spread -- Combination Trades*

5-45

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Combination ID	Combination ID	10
Indicator	Fractional Indicator	1
Combination Trade Header:	Combination Trade Header:	
Code	Combination Trade Category Code	1
Code	Combination Trade Type Code	1
Indicator	Special Indicator	1
Sign	Combination Trade Sign One	1
Price	Combination Trade Value One	6
BATE Code	Combination Trade BATE Code One	1
Size/Quantity	Combination Bid Size/Trade Quantity	5
Sign	Combination Trade Sign Two	1
Price	Combination Trade Value Two	6
BATE Code	Combination Trade BATE Code Two	1
Size	Combination Ask Size	5
Contract ID	First Contract ID	5
Option ID	First Option ID	9
Volume	First Contract Volume	5
Contract ID	Second Contract ID	5
Option ID	Second Option ID	9
Volume	Second Contract Volume	5
EXT	EXT	1
		98

* Combination trades are trades that involve more than one future and/or option contract. These could include traditional spreads as well as strips and option strategies.

For CME, GLOBEX, spreads will be transmitted in this message category and type code.

See Appendix 5.19.2 for CME usage of Category Code S, Spread; Type Code C, Combination Trade messages.

May 22, 1998

5.20 Category Code T - Bid/Ask/Trade Message - General Form

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID	Contract ID	5
Option ID	Option ID	9
Price	Bid/Ask/Trade Price	6
BATE Code	BATE Code	1
Volume Traded	Volume Traded	5
Indicator	Actual/Estimated	1
ETX	ETX	1
	Total Length	47

47

This message is a general form of the Bid/Ask/Trade - Future - No Volume message. See remarks under Section 5.01.

The volume traded field may be filled at the option of the exchange. Exchanges which provide volume will be indicated in Appendix 5.20.

5.20.1 Category Code T - Type Codes I & D
Bid/Ask/Trade - General Form--Insert/Delete

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID	Contract ID	5
Option ID	Option ID	9
Price	Bid/Ask/Trade Price	6
BATE Code	BATE Code	1
Volume Traded	Volume Traded	5
Indicator	Actual/Estimated	1
As-of Sequence Number	As-of Sequence Number	6
ETX	ETX	1
	Total Length	53

5.21 Category Code U - Special Range Quotations

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID	Contract ID	5
Option ID	Option ID	9
Price	First Price	6
BATE Code	First Price BATE Code	1
Price	Second Price	6
BATE Code	Second Price BATE Code	1
Indicator	Market Direction	1
Volume Traded	Volume Traded	5
Indicator	Actual/Estimated	1
Indicator	Special Indicator	1
Session ID	Session ID	2
ETX	ETX	1
	Total Length	58

The Special Range Message may be used to support additional types of quotations that may arise requiring 1 or 2 price values, along with associated BATE Code Values. Although similar in form to Category O or P messages, an additional Indicator field is included to identify the type of quotation. An Exchange will further define the application of the respective quotation in Appendix 4.0.6.

Special Indicator field is used to indicate an exchange's classification of a particular Special Range Message. Values for this indicator are:

Indicator	Quotation
Value	Classification
R	Resumption (range)
S	Suspension (range)
I	Indicative Opening
Q	Prior Day's Settlement (CME Only)
P	Post Closing Range

Suspension (Range)

- Refers to a quotation used to report market activity at the end of trading of a session (similar to a Closing Range)
- May contain a single price or range
- May contain any of the BATE Code combinations currently available in a Category P (Closing Quotation)

Resumption (Range)

- Refers to a quotation used to report market activity at the beginning of a session immediately following another session which is also part of the defined "Trading day" (similar to an Opening Range)
- May contain a single price or range
- May contain any of the BATE Code combinations currently available in a Category O (Opening Quotation) Delete or Insert Versions (Type D or I respectively) of this message would include the As-of Sequence Number field (6Bytes) immediately preceding the ETX.

Indicative Opening

- Refers to a quotation transmitted, starting approximately 15 minutes before GLOBEX opens.
- Will be sent at periodic intervals as indications of where the market will open.

Prior Day's Settlement (CME Only)

- Refers to a quotation containing the prior day's settlement for GLOBEX Products. It is sent after the end-of-day Open Outcry session and during the GLOBEX Session.

Post Closing Range

- Refers to a quotation used to report allowable trading price range for a 2 minute trading session immediately following the official closing of a particular contract.

**5.21.1 Category Code U - Special Range Quotations Type I,D
Special Range --Insert/Delete**

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID	Contract ID	5
Option ID	Option ID	9
Price	First Price	6
BATE Code	First Price BATE Code	1
Price	Second Price	6
BATE Code	Second Price BATE Code	1
Indicator	Market Direction	1
Volume Traded	Volume Traded	5
Indicator	Actual/Estimated	1
Indicator	Special Indicator	1
Session ID	Session ID	2
As-of Sequence Number	As-of Sequence Number	6
ETX	ETX	1

	Total Length	64
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5.21.2 Category Code U - Type O Indicative Bid, Ask Quotation, Delta Values

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID	Contract ID	5
Option ID	Option ID	9
Price	Indicative Bid Price	6
BATE Code	BATE Code of 'B'	1
Price	Indicative Ask Price	6
BATE Code	BATE Code of 'A'	1
Delta Value	Value Format 99.9999	6
Filler	Filler	4
ETX	ETX	1
	Total Length	58

5.22 Category Code V - Cumulative Volume

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID	Contract ID	5
Option ID	Option ID	9
Cumulative Volume	Cumulative Volume	7
Indicator	Actual/Estimated	1
ETX	ETX	1
	Total Length	42

The Cumulative Volume message may be used by an exchange to correct its reported Cumulative Volume (Actual or Estimated) during the current trading day. Note, in particular, that where an exchange revises its opening (or closing) range, any revision to the Cumulative Volume may not be processed by vendors which do not retain a separate record of the volume reported on the opening (or closing) range. To insure the correct processing of volume information under such circumstances, exchanges may use the Cumulative Volume message.

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID	Contract ID	5
Option ID	Option ID	9
Cumulative Volume	Cumulative Volume	7
Indicator	Actual/Estimated	1
Session ID	Session ID	2
ETX	ETX	1
	Total Length	44

The Cumulative Volume message may be used by an exchange to correct its reported Cumulative Volume (Actual or Estimated) during the current trading session. Note, in particular, that where an exchange revises its opening (or closing) range, any revision to the Cumulative Volume may not be processed by vendors which do not retain a separate record of the volume reported on the opening (or closing) range. To insure the correct processing of volume information under such circumstances, exchanges may use the Cumulative Volume message.

5.23 Reserved

5.24 Category Code X - Text

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Text	Text	63
ETX	ETX	1
	Total Length	83

The Text message format will be used to transmit messages which cannot be expressed within other formats specified within this document. Text messages will not be formatted in any way which will permit interpretation by vendors' systems. Each Text message, or portion of a Text message, will be inserted in a fixed field of 63 P/A Characters.

Text messages may be transmitted with descriptive Type Codes; in which case, vendors will be expected to detect and print pertinent Text messages and take appropriate action. Valid Type Codes for Text messages are as follows:

<u>Type Code</u>	<u>Message</u>
Space	General Text
A	Trading Authorized in New Delivery Months
D	Deliveries and Intentions
E	Option Exercises and Assignments
F	Fix High Low
G	Good Morning (courtesy message only, no system control indicated)
I	Volume & Open Interest (Text format)
L	Last Day of Trading in Delivery Months
M	Margin Changes
N	New Commodity Listings
P	Cash Prices
R	Receipts and Shipments
S	System Changes
T	Opening/Closing Time Changes, Permanent and Emergency
U	Crop Reports
V	Variable Limits Effective
W	Warehousing Information
X	Globex

5.25 Category Code Y - Cash Prices

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID	Contract ID	5
Price	Price	6
BATE Code	B/A/Space	1
ETX	ETX	1
	Total Length	32

This message is intended to be used primarily for the dissemination of current cash values of Stock Index Futures, or other Index Type Futures Contracts. An Exchange may specify a Delivery Month Code (within the Contract ID) other than the value "Y" typically defined for Spot Delivery/Index Information (Section 4.03.2). See Appendix 3.01 for the Delivery Month Code selected by the respective exchange.

**5.25.1 Category Code Y - Type Codes I & D
Cash Prices --Insert/Delete**

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID	Contract ID	5
Price	Price	6
BATE Code	B/A/Space	1
As-of Sequence Number	As-of Sequence Number	6
ETX	ETX	1
	Total Length	38

**5.25.2 Category Code Y - Type Codes P
Previous Day's Settlement Price**

This message is intended to be used primarily for the dissemination of the Previous Day's Settlement Price. An Exchange may specify a Delivery Month Code (within the Contract ID) other than the value "Y" typically defined for Spot Delivery/Index Information (Section 4.03.2). See Appendix 3.01 for the Delivery Month Code selected by the respective exchange.

5.25.3 Category Code Y - Type C

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>

May 22, 1998

Header	Header	19
Contract ID	Contract ID	5
Price	Price	6
BATE Code	B/A/Space	1
Date	mmddy	6
ETX	ETX	1
	Total Length	38

The Date Field represents the associate date that the price actually represents. For example, the CME agricultural indices represent a settlement price from a date different from the date that the price was transmitted.

5.26 Category Code Z - Contract Specifications

Contract Specifications messages may be used to supply vendors with basic information of interest to their data base managers and operators as well as their subscribers.

Five (5) messages are provided:

Type C	- Commodity
Type O	- Option
Type F	- Month
Type S	- Session
Type X	- Combination Trades

Specifications, includes information common to all contracts for a particular commodity (defined by the Commodity Code) and contract type (defined by the Future/Put/Call code); and, Type M - Month Specifications, includes information which may vary from month to month, or from strike price to strike price, for a commodity within a particular type of contract.

Contract Specifications messages may be sent, at the option of the exchange: 1) on the day trading is announced in the contract (before effective date); 2) whenever one (1) or more elements of the message is changed; or, 3) routinely a, such as daily, the first day of the month or the last day of the month.

Vendors should note that certain data in the messages is subject to change over the life of the contract. For example, the closing time for some contracts is changed on the last day of trading.

Chapter 5.00 Message Definitions

**5.26.1 Category Code Z - Type C
Commodity Specifications**

The format of the Commodity Specifications follows:

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID, (Month and Year not filled)	Dependent upon PCC field value	5
Option ID (space filled)		9
Listing Code L = List new commodity D = Delist inactive commodity M = Maintenance of existing commodity		1
Contract Description		11
Contract Size		10
Pricing Units 01 = Bushels 02 = Pounds 03 = Troy Ounces 04 = Fine Troy Ounces 05 = Hundredweight, 100 lbs. 06 = Hundredweight, 112 lbs. 07 = Short Tons, 2,000 lbs. 08 = Long Tons, 2,240 lbs. 09 = Metric Tons, 2,204.6 lbs. 10 = Index Points 11 = Percent of Par 12 = Gallons		2
Price per Unit \$ = Dollars C = cents Space = Index or percent		1
Currency of Contract 1 = U.S. dollars 2 = Canadian Dollars 3 = British Pounds		1
Opening Time	Daily Opening Time HHMM	4
Closing Time	Daily Closing Time HHMM	4
Maximum Daily Price Fluctuation		6
Minimum Daily Price Fluctuation	Price ID	6
ETX	ETX	1
		80

**5.26.2 Category Code Z - Type F
Future Month Specifications**

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19

Contract ID,	Contract ID	5
First Day of Trading	MMDDYY	6
List Code	See Category Z, Code C	1
First Notice Day	MMDDYY	6
First Delivery Day	MMDDYY	6
First Trading Day	MMDDYY	6
Last Notice Day	MMDDYY	6
Last Delivery Day	MMDDYY	6
Time to Exercise on Last Day	HHMM	4
ETX	ETX	1
		66

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID,	Contract ID	5
Option ID	Option ID (Strike Price Code and Numeric Strike Price Blank, Put/Call Indicator filled in)	9
First Day of Trading	MMDDYY	6
List Code	See Category Z, Code C	1
First Trading Day	MMDDYY	6
Last Delivery Day	MMDDYY	6
Expiration Day	MMDDYY	6
Last Trading Day	MMDDYY	6
Time to Exercise on Last Day	HHMM	4
Strike Price Low Value-1st Range	Lowest value Strike Price Listed for Trading	6
Strike Price High Value-1st Range	Highest value Strike Price Listed for Trading	6
Strike Price Interval-1st Range	Strike Price Interval (to calculate intervening Strike Prices)	6
Strike Price Low Value- 2nd Range	Lowest value Strike Price Listed for Trading	6
Strike Price High Value- 2nd Range	Highest value Strike Price Listed for Trading	6
Strike Price Interval- 2nd Range	Strike Price Interval (to calculate intervening Strike Prices)	6
ETX	ETX	1
		105

5.26.4 Category Code Z - Type S
Session Open/Close Time Definition

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Contract ID	Contract ID	5
Session ID	Session ID	2
Session Opening Time	Opening Time in HHMM Format	4
Session Closing Time	Closing Time in HHMM Format	4
ETX	ETX	1
		35

Session Open/Close Time definition message would be sent prior to the Opening of respective Contract ID.

5.26.5 Category Code Z - Type X
Futures Options Month Specifications for
Combination Trades

<u>Field Group</u>	<u>Fill</u>	<u>Length</u>
Header	Header	19
Combination ID	Combination ID	10
Contract ID	Contract ID	5
Option ID	Option ID	9
Contract ID	Contract ID	5
Option ID	Option ID	9
First Trading Day	MMDDYY	6
Listing Code	See Category Z, Code C	1
Last Trading Day	MMDDYY	6
Time & Exercise on Last Day	HHMM	4
Expiration Day (Options Only)	MMDDYY	6
ETX	ETX	1
		81

6.0 Sequence of Transmissions

6-1

6.0 Sequence of Transmissions

This section will define the sequence in which the messages specified herein will be sent or will be available for retransmission. Each exchange may elect not to generate certain messages, but if sent, they will be sent in the sequence defined in this section. Those messages which, at a minimum, are mandatory on a normal trading day, are marked with an asterisk (*).

The sequence in which messages may first appear is indicated by the sequence in which the messages are listed in the table. The interval during which a message may appear is indicated by the indented message hierarchy. For example, the Start of Communications Testing is the first message to be transmitted, and accordingly, appears first on the table. The Start of Communications Testing message is followed by the Line Integrity Verification message which, by virtue of its lesser indentation, supercedes the hierarchy of the Start of Communications Testing message; therefore, the Start of Communications Tasting message will not appear after transmission of a Line Integrity Verification message.

Messages which are listed contiguously and occupy the same hierarchial level may appear in any sequence within that level.

6.0 Sequence of Transmissions

6-2

0 1 2 3 4 5 6 7 8 9 10 11

May 22, 1998

Start of Communications Testing*

Line Integrity Verification*
Character Test Patterns

Start of Simulated Data

Simulated Data Warning
simulated data (should exclude Start and End
of Official Transmissions)

End of Simulated Data

Line Integrity Verification*

Start of Official Transmissions*

Retransmissions
Market Opening Imminent*
Halt in Trading
Set Sequence Number
Trading Resumed
Volume & Open Interest
Text
Contract Specifications

Bid/Ask/Trade-Futures-No Volume
Bid & Ask
Exceptional Quotation
Fast Market
High-Low-Last
Summary
Opening Range
Closing Range
Settlement Price & Limits*
Refresh
Spread/Straddle
Bid/Ask/Trade-General Form
Cumulative Volume
End of Transaction Reporting*

End of Official Transmission

Start of Simulated Data

Simulated Data Warning
Simulated data (should exclude Start and End
of Official Transmissions)

End of Simulated Data

End of Communications Testing

Appendices

6.0 Sequence of Transmissions

6-2

Appendix 1.03 - Exchanges

<u>Exchange</u>	<u>Function</u>	<u>Phone Number</u>
American Commodities Corp. 86 Trinity Place New York, NY 10006-1881		
Nathan Most President, ACC	E	(212) 306-8940
Charles Faurot Assistant Vice President Market Data Services	*EM	(212) 306-1346
Judy Woods Project Manager	*HS	(212) 306-8919
Joe Loughran Vendor Liason, SIAC	O	(212) 383-4908
Vincent Alaimo Communications Engineering, SIAC	T	(212) 383-2203 (Fax) (212) 306-8934
The Board of Trade of Kansas City Missouri, Inc. 4800 Main Street - Suite 303 Kansas City, MO 64112		
Chris Johnson Manager Information Systems	*ESHT	(816) 753-7500
Dan Jones Assistant Vice President Floor Operations	O	(816) 753-7500 (816) 753-7800 (Fax) (816) 753-3944

May 22, 1998

Appendix 2.00 - Communications Interface**A-2.00-2**

<u>Exchange</u>	<u>Function</u>	<u>Phone Number</u>
Chicago Mercantile Exchange 30 South Wacker Drive Chicago, IL 60606		
Steve Briskey Manager Trading Floor Computer Operations	O	(312) 930-8160
Marilee Radecki Manager (FAX) Quotation Vendor Services	T	(312) 930-8193 (312) 648-3648
Robert Krause Manager Network Marketing	M	(312) 930-4596
Commodities Exchange Center Four World Trade Center New York, NY 10048		
James Neal General Manager	E	(212) 938-2020
Dan Capozello Director, Computer and Technical Services	*EHST	(212) 938-2030 (FAX) (212) 912-1325
Minneapolis Grain Exchange 150 Grain Exchange Bldg. Minneapolis, MN 55415		
Mike Levoir	HT	(612) 338-6212
Anne Curtin	*MOS	(Fax) (612) 339-1155
John McLaughlin	E	
The Montreal Exchange 800 Victoria Square Montreal, Quebec H4Z 1A9		
Antoinette DiTullio	*EDM	(514) 871-3517 (Fax) (514) 871-3559
Philadelphia Board of Trade 1900 Market Street Philadelphia, PA 19103		(215) 496-5046 (Fax) (215) 496-1194
Bill Morgan	*	

May 22, 1998

Appendix 2.00 - Communications Interface**A-2.00-3**

<u>Exchange</u>	<u>Function</u>	<u>Phone Number</u>
Sydney Futures Exchange Grosvenor Street SYDNEY NSW 2000 Australia		
Bonnie Blaauw Manager - Trading and Information Services (Fax)	E	011-02-256-0555 011-02-256-0666
The Toronto Stock Exchange The Exchange Tower Two First Canadian Place Toronto, Ontario M5X 1J2		
Andrew Clademenos Tara O'Donnell	E *HST	(416) 947-4485 (416) 947-4456 (Fax) (416) 947-4727
Winnipeg Commodity Exchange 500 Commodity Exchange Tower 360 Main Street Winnipeg, Manitoba R3C 3Z4		
Mike Gagne' Director of Finance	E*	(204) 949-0495 (Fax) (204) 943-5448
Preston Zacharias Quote Vendor Administrator	HTM	(204) 949-0495 (Fax) (204) 943-5448
Robert Ambrose Trading Floor Supervisor	O	(204) 943-0661 (Fax) (204) 943-5448

May 22, 1998

Function Codes:

- * ITC Representative
- E Executive
- S Software
- H Hardware
- T Telecommunications
- O Operations
- D Data Base Administrator
- M Marketing

May 22, 1998

2.1 Introduction

The modem specification, vendor, and model has been selected as a standard by SIAC. The AT&T 2296A modem is supported by SIAC's Network Management System. SIAC's experience with the product means increased reliability for the subscriber at the Broadcast facility. Uniformity in modem manufacturer means faster repair and reduced down time. On site spares will be provided by SIAC until the subscriber modem can be repaired.

2.2 Installation Requirements**2.2.1 SIAC**

All modems purchased by subscribers for the Broadcast Facility at SIAC will be rack mounted (Multimount). SIAC will provide subscribers with rack space at 55 Water Street.

2.2.2 Subscribers

Modems purchased by subscribers for their facilities may be either one of the two types of available models that best integrates into subscribers systems (rack mounted or stand alone).

2.3 Minimum Requirements

The subscriber must adhere to the requirements stated under 2.5, Leased Line Modem.

2.4 SIAC's Recommendations

The LEASED LINE WITH DIAL BACK-UP MODEM option can only enhance the subscriber's uptime. Subscribers are not required to have a dial back-up, but if this option is required at some future date, new equipment must be purchased. This enhanced capability, implemented or not, greatly outweighs the incremental cost associated with the option.

American Commodities Corporation -- Exchange ID: A

2.5 Leased Line Modem (V.32)

2.5.1 Communications Lines

4 wire, point-to-point, leased line, full duplex, 3002 voice grade circuit

2.5.2 Modems

Vendor: AT&T
Model: 2296A
Interface: EIA RS-232C
Speed: 4800 baud

Line Termination	User Location	SIAC
Leased Line:	RJ45S	Demarc
Line Quantity:	Leased line - One (1)	
CCITT Standard:	V.32	
Ordering Specifications:	Stand Alone, Part #2296AAA - or - Multi Mount Card, Part #2296BAA	

NOTE: Modems at SIAC locations are rack mounted. (multi mount)

American Commodities Corporation -- Exchange ID: A

2.6 Leased Line with Dial Up Modem V.32 (Optional)

2.6.1 Communications Lines

4 wire, point-to-point, leased line (with local auxiliary dial line), full duplex, 3002 voice grade circuit

2.6.2 Modems

Vendor: AT&T
 Model: 2296A
 Interface: EIA RS-232C
 Speed: 4800 baud

Line Termination	User Location	SIAC
Leased Line:	RJ45S	Demarc
Dial Line:	RJ45S	RJ45S
Line Quantity:	Leased line - One (1)	
	Dial line - One (1)	
FCC Registration Number:	AS593M-72177-MD-E	
Ringer Equivalence:	0.4A	
CCITT Standard:	V.32	
Ordering Specification:	Stand Alone, with ASCII Dialer Part # 2296BDW - or - Multi Mount Card, with ASCII Dialer, Part #2296AD2	

NOTE: User must initiate a dial request from this location. Modems at SIAC are set up for automatic answer option. Modems at SIAC are rackmounted (multi mount). This option is recommended if dial back-up capability is desirable.

Commodities Exchange Center - Exchange ID: C

All CEC ITC Communicaton equipment and lines will be ordered and scheduled for installation by CEC Telecommunications.

COMMUNICATION LINES

CEC uses NYTEL leased line digital circuits with automatic dial back-up and restoration for the New York Metropolitan area.

CEC uses WILTEL multi-drop analog circuits as the long distance carrier. Dial back-up is controlled by CEC.

MODEMS

Vendor: INC Corporation
Model: 1056E DSU/CSU
Dial/BU: Automatic dial back-up

Vendor: ATT Paradyne
Model: Compshere 3440
Dial/BU: Controlled by CEC

Baud Speed: 9600 bps
Parity: odd
Data bits: 7
Stop bits: 1

CEC ITC TROUBLE REPORTING PROCEDURE

If the CEC Vendor has line problems, such as line integrity, line drops, parity or any communication network interface problems, all calls must be directed to CEC Telecommunications Trouble Desk.

Minneapolis Grain Exchange -- Exchange ID: G

Communications Lines

- o 4 wire, point-to-point or multipoint (Vendor preference), private line, Full duplex

Modems

- o MGE uses Codex 2221 modems on their lines. The modem on the Vendor's end is the responsibility of the Vendor.

Kansas City Board of Trade -- Exchange ID: K

Communications Lines

- o 4 wire, point-to-point, private line, Full duplex

Modems

- o KCBT will choose and supply the necessary modems, including dedicated and emergency dial-up modems at KCBT expense.

Chicago Mercantile Exchange -- Exchange ID: M

Communications Lines

- o 4 wire (2 CME, 2 AT&T diagnostic), point-to-point, private line, broadcast

Modems

- o BELL 201B compatible (CME uses 2024A AT&T)
- o Vendor is responsible for modem at vendors site
- o Dial backup option available, modem type - V.22 compatible (CME uses HAYES SMARTMODEM 2400)

Philadelphia Board of Trade -- Exchange ID: P

Communications Lines

- o 4 wire, point-to-point, private line, Full duplex Modems
- o To be defined

Sydney Futures Exchange -- Exchange ID: S

Communications Lines

- o 2400 baud Datel, point-to-point, private line, Full duplex.

Modems

- o Telecom Australia supplied under SFE contract.

Appendix 3.01 - Transmission Characteristics**A-3.01-9**

Winnipeg Commodity Exchange -- Exchange ID: W

Transmission Characteristics -- Hardware	<u>Reference</u> <u>In ITC</u>
o 1200 BPS	3.02, 3.03, 3.04,
o Asynchronous	3.05, 3.07, 3.08,
o Even Parity	3.09
o NO Horizontal Parity	
o 1 Start Bit	NOT 3.06 and 3.10
o 1 Stop Bit	
o 7 Data Bits plus 1 parity bit	

May 22, 1998

Sydney Computerised Overnight Market (SYCOM) -- Exchange ID: Y

Communications Lines

- o 2400 baud Datel, point-to-point, private line, Full duplex.

Modems

- o Telecom Australia supplied under SFE contract.

Transmission Characteristics

The protocol conforms in general to the set of rules governing synchronous transmission of binary coded data as defined in the IBM System Reference Library publication entitled "General Information -- Binary Synchronous Communications", File No. TP-09, Order No. GA27-3004.2.

All transmissions from ACC to vendors is in simplex mode. ACC is always the transmitting station and the vendor is always the receiving station.

All transmission are in standard USACII code: 7 data bits, one bit for odd parity (except BCC)>

```

-----
S   S   S   S                               E   B   P
Y   Y   Y   O      BLOCK TEXT              T   C   A
N   N   N   H                               X   C   D
-----
<-----TRANSMISSION BLOCK----->

```

A block can have a maximum of 1,000 characters. This count includes text and bi-sync control characters, but excludes BCC, SYN and PAD characters.

Each block transmission begins with at least three contiguous SYN characters, and ends with a trailing PAD character. The SYN characters establish synchronization between transmitting and receiving stations.

The trailing PAD characters consist of all "1" bits (including the parity bit). SYN characters may be inserted within a block at periodic intervals. It is the responsibility of the vendor to strip the SYN characters out of the transmission.

The Block Check Character (BCC) is a longitudinal sum, without carry, of all characters preceding it in the block, up to but not including the SOH. No character other than a BCC should immediately follow ETX. On receiving a block, all SYN characters within the text are ignored in generating the local BCC against which the received BCC character is compared. Only one message is contained in the Block Text.

American Commodities Corporation -- Exchange ID: A

Transmission Characteristics -- Software

The American Commodities Corporation Vendor Line supports the following message types:

CATEGORY CODE	TYPE CODE
C -- Control Messages	
o Start of Simulated Data	A
o End of Simulated Data	B
o Halt in Trading	G
o Set Sequence Number	K
o Character Test Pattern -- Part I	N
o Character Test Pattern -- Part II	O
o Trading Resumed	R
o Line Integrity Verification	T
I -- Open Interest	
Q -- Settlement Price Message	
T -- Bid/Ask/Trade Messages	
X -- Text (Administrative) Messages	

Retransmission support is not included in the initial implementation. Current telephone numbers include:

212-306-8940	212-306-1346	212-303-8910
212-623-4908	212-623-2203	

Minneapolis Grain Exchange -- Exchange ID: G

Transmission Characteristics

- o 2400 BPS
- o Asynchronous
- o No Parity
- o NO Horizontal Parity
- o 1 Start Bit
- o 1 Stop Bit
- o 8 data bits

Transmission Characteristics -- Software

Category Codes Supported	Category Description
A	Bid/Ask/Trade - Future - No Volume
C	Control (Type T, N, O)
E	Exceptional Quotation
F	Fast Market
H	High-Low-Fast
I	Volume and Open Interest
O	Opening
P	Closing
Q	Settlement
R	Refresh (Type A - Abbreviated)
S	Spread
T	Bid/Ask/Trade
X	Text (Type "" - General Text)

Retransmission is not currently supported. Expected availability in the Summer 1991.

Transmission Characteristics

- o 1200 BPS
- o Asynchronous
- o Even Parity
- o NO Horizontal Parity
- o 1 Start Bit
- o 1 Stop Bit
- o 7 data bits plus 1 parity bit

Transmission Characteristics -- Software

Category Codes Supported	Category Description
A	Bid/Ask/Trade - Future - No Volume
C	Control (Type T, N, O)
E	Exceptional Quotation
F	Fast Market
H	High-Low-Fast
I	Volume and Open Interest
O	Opening
P	Closing
Q	Settlement
R	Refresh (Type A - Abbreviated)
S	Spread
T	Bid/Ask/Trade
V	Cumulative Volume
X	Text (Type " " - General Text)

Retransmission is supported. Vendor calls KCBT with Sequence Numbers and/or Time Frame required. Current Telephone Number is 816-753-7500.

Chicago Mercantile Exchange -- Exchange ID: M

Transmission Characteristics -- Hardware

- o 9600 BPS
- o Asynchronous
- o Even Parity
- o NO Horizontal Parity
- o 1 Start Bit
- o 1 Stop Bit
- o 7 data bits plus 1 parity bit

Transmission Characteristics -- Software

Category Codes Supported	Category Description
A	Bid/Ask/Trade - Future - No Volume includes Index Prices
B	Bid/Ask - E.T.H. only
C	Control (Type A, B, C, D, G, I, J, K, N, O, R, S, T)
E	Exceptional Quotation (BATE "P" for R.T.H.) (Bate R & D for
F	Fast Market (and Late Market)
H	High-Low-Last
I	Volume and Open Interest (as separate messages)
J	Summary message (transmitted at the end of R.T.H.)
N	Bid/Ask Market; Bid/Ask Trade (no volume), all option quotes
O	Opening Range
P	Closing Range
Q	Settlement and Limits (as separate message)
S	Spread (Type " " For RTH, Type "C" for
T	Bid/Ask/Trade - E.T.H. only
U	Special Range Quotation (Special Indicator I, S + R) E.T.H. only
X	Text (Type " " - General Text,
Y	Cash Prices
	Index prices and Interbank Spot Bid prices
Z	Contract Specifications
	Type S, F, O & X (Type X - E.T.H. only)

Retransmission is supported - Vendor calls CME with sequence #'s and/or time frames required. Phone # - (312) 930-8160 Computer Room.

For specific difference in message usage between Regular Trading Hours (RTH) and Electronic Trading Hours (ETH-GLOBEX) see Appendix 7.0.

Philadelphia Board of Trade -- Exchange ID: P

Transmission Characteristics

- o 2400 BPS
- o Bisynchronous Simplex
- o Even Parity
- o NO Horizontal Parity
- o 1 Start Bit
- o 1 Stop Bit
- o 7 data bits plus parity bit

Transmission Characteristics -- Software

Category Codes Supported	Category Description
A	Bid/Ask/Trade - Future - No Volume Type (" ")
B	Bid and Ask Type (" ")
C	Control Type ("A", "B", "C", "D", "G", "H", "I", "J", "K", "N", "O", "R", "S", "T")
I	Volume and Open Interest
J	Summary
Q	Settlement Price and Next Day's Limits
T	Trade/Bid/Ask - General Form Type (" ", "F", "I", "L", "C", "D", "E", Text
X	

* NOTE: The PBOT currently increments the line sequence number for simulated data warning and line integrity messages. On approximately October 1, 1986, we will discontinue this practice.

The PBOT will implement retransmissions on approximately October 1, 1986.

Philadelphia Board of Trade -- Exchange ID: P

Modification to the ITC specification are:

<u>Category</u>	<u>Changes</u>
A	This message will only be used for Underlying spot information. The BATE code and year will be a space; the month will be a "Y".
C	Exchange related control messages with types "D", "G", "H", "I", and "R" will have an Exchange ID of "P". Processor related control messages with types "A", "B", "C", "J", "K", "N", "O", "S", and "T" will have an Exchange ID of "Z".
J	Summary messages will contain underlying price information for futures as well as options.
T	This message will only be used for trade information. All trade messages (including spreads and straddles) will be in the expanded trade format with the extra sequence field. This field will contain the PHLX trade sequence number and not the message sequence number as described in the original ITC specifications.

The PHLX trade sequence number reflects the order of entry into our system and not necessarily the order of trading. Cancel messages will contain the PHLX sequence number of the trade to be canceled.

The PHLX trade sequence number may have gaps, so the message sequence should be used to determine if messages have been missed.

The following message types have been added:

<u>Type</u>	<u>Condition</u>	<u>Application (may update)</u>
space	regular	Last, Open, High, Low
"F"	open out of seq	Open, High, Low
"I"	sold sale	High, Low
"L"	late	Last, Open, High, Low
"C"	cancel last	Last, High, Low
"D"	cancel	High, Low
"E"	cancel open	Open, High, Low
"G"	cancel only	Last, Open, High, Low

Sydney Futures Exchange -- Exchange ID: S

Transmission Characteristics -- Physical

- o 2400 BPS
- o Asynchronous
- o Even Parity
- o NO Horizontal Parity
- o 1 Start Bit
- o 1 Stop Bit
- o 7 data bits plus 1 parity bit

Transmission Characteristics -- Software

Category Codes Supported	Category Description
C	Control (Type,C,D,E,G,H,I,J,N,O,R,T)
F	F - Fast Market, E - End Fast Market
H	High-Low-Last
I	Volume and Open Interest
M	Bid and Ask Market
O	Opening
P	Closing
Q	Settlement
T	Bid/Ask/Trade
U	Special Range Quotations
V	Cumulative Volume
X	Text (Type " " General Text)

Retransmission is not supported at this time.

Sydney Futures Exchange -- Exchange ID: S

Modifications to the ITC specification are:

<u>Category</u>	<u>Changes</u>
F	Planned for implementation in the second half of 1990 for the Sydney Futures Exchange only and not SYCOM.
I	The following fields are not supported: Cumulative Volume - Exchange for Physicals Cumulative Volume - Deliveries Cumulative Volume - Option Exercises These fields may be supported at a later date.
M	For SFE trading floor the message type M will have the following fields space filled: Bid/Ask size Last Price Bid/Ask/Space (BATE) Volume Traded Actual Estimated Indicator
O	Opening Range - Current implementation is per the ITC specification for single price opens and closes pending Floor Committee rule approval for range transmissions. Type Code R - Only revision is supported in this message type. As of sequence numbers are not supported.
P	Closing Range - Current implementation is per the ITC specification for single price opens and closes pending Floor Committee rule approval for range transmissions. Type Code R - Only revision is supported in this message type. As of sequence numbers are not supported.
T	The volume indicator relating to SFE trading floor T messages is "E".
U	Planned for implementation in June 1990 for the transmission of Indicative Option Premium Quotes.
X	Text messages are transmitted without descriptive Type Codes.

Winnipeg Commodity Exchange -- Exchange ID: W

Transmission Characteristics -- Software

Refer to section 4.0 of the ITC specification, dated July 1, 1990 for field grouping definitions and note the exceptions and additional references identified below.

Category	Type	<u>In ITC Specification</u> Description	Reference Sections
C	C	Start of Communications Testing	5.03.3
C	D	Start of Official Transmissions	5.03.4
C	G	Halt in Trading	5.03.7
C	I	End of Official Transmissions	5.03.9
C	J	End of Communications Testing	5.03.10
C	N	Character Test Pattern -- Part I	5.03.14
C	O	Character Test Pattern -- Part II	5.03.15
C	R	Trading Resumed	5.03.18
C	T	Line Integrity	5.03.20
F	F	Fast Market On	
F	E	Fast market Off	
		--both fast market messages will be transmitted on a per commodity basis, with futures and options combined in a single message if appropriate	
H		High/Low/Last	5.08.1
		--transmitted after every adjustment that affects the high or low, or after every insertion or deletion, regardless as to whether the high and low is affected	
		--also transmitted daily at approximately 10:30am CDT in the form of a board run	

Winnipeg Commodity Exchange -- Exchange ID: W

I		Volume and Open Interest --the exchanges for physicals, deliveries, option exercises and session ID fields will all be space filled --transmitted daily at approx- imately 11:00am CDT	5.09.1
J		Summary Messages --transmitted after the close of the market following Category V messages --the underlying commodity price and the restricted option indicator fields will be space filled	5.10.1
O		Opening Range --except that no Market Direction indicator, volume or volume indicator will be included, all will be space filled	5.15.1
O	R	Opening Range - Revision --will be transmitted after any adjustment to opening range values	5.15.3
P		Closing Range --except that no Market Direction indicator, volume or volume indicator will be included, all will be space filled --bate codes I (nominal, no trades) and N (nominal) will be transmitted	5.16
P	R	Closing Range - Revision --will be transmitted after any adjustment to the closing range values	5.16.1
Q		Settlement Price & Limits --except that no High or Low Limit will be included, these fields will be space filled	5.17

Appendix 3.01 - Transmission Characteristics**A-3.01-23**

Winnipeg Commodity Exchange -- Exchange ID: W

R	A	Refresh -- Abbreviated --will be transmitted at the discretion of the exchange	5.18.1
T		Bid/Ask/Trade -- General Form --except that the volume and volume indicator fields will be space filled for Asks and Bids	5.20
T	I & D	Bid/Ask/Trade - Insert/Delete --except that the volume and volume indicator fields will be space filled for Asks and Bids --Type H and V message will be transmitted after each insertion or deletion	5.20.1
V		Cumulative Volume --transmitted after every insertion or deletion, and after the transmission of settlement prices (category Q)	5.22
X		Text Messages	5.24
Y		Cash Prices	5.25

Retransmission is supported.

May 22, 1998

Winnipeg Commodity Exchange -- Exchange ID: W

Options Messages Supported

As of January 15, 1992

Category	Type	Description	<u>Reference Sections In ITC Specification</u>
H		High-Low-Last --transmitted after every adjustment that affects the high or low, or after every insertion or deletion regardless as to whether the high and low is affected	5.08.1
I		Volume and Open Interest --the exchanges for physicals, deliveries, option exercises and session ID fields will all be space filled --transmitted daily at approximately 11:00am CDT	5.09.1
O		Opening Range --except that no Market Direction indicator, volume, or volume indicator will be included, all will be space filled	5.15.1
O	R	Opening Range - Revision --will be transmitted after any adjustment to opening range values	5.15.3
P		Closing Range --except that no Market Direction indicator, volume, or volume indicator will be included, all will be space filled	5.16
P	R	Closing Range - Revision --will be transmitted after any adjustment to closing range values	5.16.1
Q		Settlement Price & Limits --except that no High or Low Limit will be included, these fields will be space filled	5.17

Appendix 3.01 - Transmission Characteristics**A-3.01-25**

Winnipeg Commodity Exchange -- Exchange ID: W

Options Messages Supported As of January 15, 1992

Category	Type	Description	
R	A	Refresh -- Abbreviated --will be transmitted at the discretion of the exchange	5.18.1
T		Bid/Ask/Trade - General Form --except that the volume and volume indicator fields will be space filled for Asks and Bids	5.20
T	I & D	Bid/Ask/Trade - Insert/Delete --except that the volume and volume indicator fields will be spaced filled for Asks and Bids --Type H and V messages will be transmitted after each insertion or deletion	5.20.1
U	O	Special Range Quotation --will be used to transmit indicative ask, bid and delta values --indicative bid values placed in first price field, first price bate code = 'B' --indicative ask values placed in second price field, second price bate code = 'A' --a six character field consisting of Market Direction and Volume Traded fields will be used to transmit a 6 digit delta value with a 4 decimal places implied (i.e. 99.9999) --Actual/Estimated, Special Indicator and Session Identifier fields will be blank	5.21

May 22, 1998

Sydney Computerised Overnight Market (SYCOM) -- Exchange ID: Y

Transmission Characteristics -- Physical

- o 2400 BPS
- o Asynchronous
- o Even Parity
- o NO Horizontal Parity
- o 1 Start Bit
- o 1 Stop Bit
- o 7 data bits plus 1 parity bit

Transmission Characteristics -- Software

Category Codes Supported	Category Description
C	Control (Type, C,D,E,G,H,I,J,N,O,R,T)
F	F - Fast Market, E - End Fast Market
H	High-Low-Last
I	Volume and Open Interest
M	Bid and Ask Market
O	Opening
P	Closing
Q	Settlement
T	Bid/Ask/Trade
U	Special Range Quotations
V	Cumulative Volume
X	Text (Type " " General Text)

Retransmission is not supported at this time.

Sydney Computerised Overnight Market -- Exchange ID: Y

Modifications to the ITC specification are:

<u>Category</u>	<u>Changes</u>
I	The following fields are not supported: Cumulative Volume - Exchange for Physicals Cumulative Volume - Deliveries Cumulative Volume - Option Exercises These fields may be supported at a later date.
M	For SYCOM the message type M will have the following fields space filled: Bid/Ask size Bid/Ask/Space (BATE) Volume Traded Actual Estimated Indicator
O	Opening Range - Current implementation is per the ITC specification for single price opens and closes pending Floor Committee rule approval for range transmissions. Type Code R - Only revision is supported in this message type. As of sequence numbers are not supported.
P	Closing Range - Current implementation is per the ITC specification for single price opens and closes pending Floor Committee rule approval for range transmissions. Type Code R - Only revision is supported in this message type. As of sequence numbers are not supported.
T	The volume indicator relating to SYCOM T messages is "A".
U	Planned for implementation in June 1990 for the transmission of Indicative Option Premium Quotes.
X	Text messages are transmitted without descriptive Type Codes.

				B7	0	0	0	0	1	1	1	1
				B6	0	0	1	1	0	0	1	1
				B5	0	1	0	1	0	1	0	1
			Bits									
B4	B3	B2	B1		0	1	2	3	4	5	6	7
0	0	0	0	0			" "	0		P		
0	0	0	1	1	SOH			1	A	Q		
0	0	1	0	2	STX			2	B	R		
0	0	1	1	3	ETX			3	C	S		
0	1	0	0	4				4	D	T		
0	1	0	1	5				5	E	U		
0	1	1	0	6		SYN		6	F	V		
0	1	1	1	7				7	G	W		
1	0	0	0	8				8	H	X		
1	0	0	1	9				9	I	Y		
1	0	1	0	A	LF				J	Z		
1	0	1	1	B					K			
1	1	0	0	C					L			
1	1	0	1	D	CR				M			
1	1	0	1	E					N			
1	1	1	1	F		US			O			

Appendix 3.01 - Transmission Characteristics**A-3.01-30**

<u>Code</u>	<u>Vendor</u>
Space Space	Not a Retransmission or Refresh message
A Space	American Commodities Corporation
AD	ADP - Comtrend, Inc.
AM	Archer Daniel Midland
AP	Associated Press
AQ	All Quotes
AU	Autex Systems
AV	All Vendors
BC	BCA Securities
BL	Bloomberg Financial
BR	Bunker Ramo Data Center
BS	Beta Systems Inc.
C Space	Commodities Exchange Center
CA	CMA
CB	Continental Bank
CC	Commodity Communications Corp.
CG	Commodity Quote Graphics
CI	Commonwealth Commodities International
CM	CMQ Communications, Inc.
CN	Commodity News Service
CO	Complete Commodity Options
CQ	Commodity Quotations, Inc.
CS	Commodity Marketing Services
CT	Citibank
DL	Dataline Inc.
DS	Dallas Stockwatch Corporation
F Space	Marche a Terme International de France (MATIF)
FC	Fincom
FI	Farmland, Inc.
FO	Fossett Corporation
FS	Fundamental Information Systems
G Space	Minneapolis Grain Exchange
GR	Grassroots
GT	ADP Financial Information Systems
HK	Hong Kong Data Comm.
HT	Hull Trading
I Space	International Futures Exchange, Ltd.
ID	Idiem Systems
II	Incremento Informatics, SA
IL	ILX Systems
IM	Infomart
IN	Innerline
K	Kansas City Board of Trade
LI	Lotus Information Network
M Space	Chicago Mercantile Exchange
MD	Market Data Systems, Inc.

May 22, 1998

<u>Code</u>	<u>Vendor</u>
MI	Market Information, Inc.
ML	Merrill Lynch
MQ	Market Quoters, Inc.
MS	Morgan Stanley
MV	Market Vision Corporation
N Space	New York Futures Exchange
ND	NASDAQ
NR	Nagel Rates
NS	National Stockwatch Corp.
NW	Newcomb Securities
P Space	Philadelphia Board of Trade
PC	PC Quote
PD	Pont Data
Q Space	Montreal Stock Exchange
QK	Quick Corporation
QS	Quotron Systems, Inc.
RD	Radio Data Systems, Inc.
RL	Reuters Limited (U.S.)
S Space	Singapore International Monetary Exchange
SH	Stockwatch of Houston
SD	Star Data
SI	SIAC IDS Systems
SL	Shearson Leahman Hutton
SN	Stockwatch Northwest
SP	Standard & Poors Trading Systems
T Space	Toronto Stock Exchange
TC	Tradecenter
TD	Track Data
TK	Telekurs A.G.
TL	Trans-Lux Corporation
TS	Telerate Systems Inc.
TV	Test Vendor
VQ	Video Quote Systems
W Space	Winnipeg Commodity Exchange
WF	Wang Financial
WR	Westport Research
Y Space	Sydney Computerised Overnight Market (SYCOM)
ZZ	This is a Test Vendor Record

The first C/A Character will indicate the first significant digit of the strike price and the type of contract (i.e., put or call).

Calls

A = 1
B = 2
C = 3
D = 4
E = 5
F = 6
G = 7
H = 8
I = 9
J = 0

Puts

N = 1
O = 2
P = 3
Q = 4
R = 5
S = 6
T = 7
U = 8
V = 9
W = 0

The second C/A Character will indicate the second and third significant digits of the strike price:

A = 05
B = 10
C = 15
D = 20
E = 25
F = 30
G = 35
H = 40
I = 45
J = 50

K = 55
L = 60
M = 65
N = 70
O = 75
P = 80
Q = 85
R = 90
S = 95
T = 00

Appendix 3.01 - Transmission Characteristics**A-3.01-34**

The foregoing scheme is capable of expressing strike prices in two and one-half significant digits and accommodates one full order of magnitude of price change during the life of a class of options without wraparound. Based upon historical commodity experience, a coding scheme able to accommodate one order of magnitude of price change should be adequate; however, in the event of a threat of wraparound, it is recommended that deep-in-the-money contracts be redesignated by the exchange under a separate Commodity Code to avoid symbol duplications.

Examples of strike prices encoded in the foregoing scheme are given below. The examples include prices within, and well outside, the range of historically observed values.

	<u>Calls</u>	<u>Puts</u>
Sugar	AA = 1.05, 10.5, 105	NA = 1.05, 10.5, 10
	AB = 1.10, 11.0, 110	NB = 1.10, 11.0, 110
	IS = 9.95, 99.5, 995	VS = 9.95, 99.5, 995
Gold	AA = \$1.05, \$10.5, \$105	NA = \$1.05, \$10.5, \$105
	AB = \$1.10, \$11.0, \$110	NB = \$1.10, \$11.0, \$110
	IS = \$9.95, \$99.5, \$995	VS = \$9.95, \$99.5, \$995
Interest	AA = 1.05%, 10.5%, 105%	NA = 1.05%, 10.5%, 105%
Rates	AB = 1.10%, 11.0%, 110%	NB = 1.10%, 11.0%, 110%
	IS = 9.95%, 99.5%, 995%	VS = 9.95%, 99.5%, 995%

Appendix 3.01 - Transmission Characteristics

A-3.01-35

The following is a complete list of standard strike price codes and their numeric equivalents.

May 22, 1998

Appendix 3.01 - Transmission Characteristics

A-3.01-36

Standard Call Strike Price Codes

AA	105	BA	205	CA	305	DA	405	EA	505
AB	110	BB	210	CB	310	DB	410	EB	510
AC	115	BC	215	CC	315	DC	415	EC	515
AD	120	BD	220	CD	320	DD	420	ED	520
AE	125	BE	225	CE	325	DE	425	EE	525
AF	130	BF	230	CF	330	DF	430	EF	530
AG	135	BG	235	CG	335	DG	435	EG	535
AH	140	BH	240	CH	340	DH	440	EH	540
AI	145	BI	245	CI	345	DI	445	EI	545
AJ	150	BJ	250	CJ	350	DJ	450	EJ	550
AK	155	BK	255	CK	355	DK	455	EK	555
AL	160	BL	260	CL	360	DL	460	EL	560
AM	165	BM	265	CM	365	DM	465	EM	565
AN	170	BN	270	CN	370	DN	470	EN	570
AO	175	BO	275	CO	375	DO	475	EO	575
AP	180	BP	280	CP	380	DP	480	EP	580
AQ	185	BQ	285	CQ	385	DQ	485	EQ	585
AR	190	BR	290	CR	390	DR	490	ER	590
AS	195	BS	295	CS	395	DS	495	ES	595
AT	100	BT	200	CT	300	DT	400	ET	500
FA	605	GA	705	HA	805	IA	905	JA	005
FB	610	GB	710	HB	810	IB	910	JB	010
FC	613	GC	715	HC	815	IC	915	JC	015
FD	620	GD	720	HD	820	ID	920	JD	020
FE	625	GE	725	HE	825	IE	925	JE	025
FF	630	GF	730	HF	830	IF	930	JF	030
FG	635	GG	735	HG	835	IG	935	JG	035
FH	640	GH	740	HH	840	IH	940	JH	040
FI	645	GI	745	HI	845	II	945	JI	045
FJ	630	GJ	750	HJ	850	IJ	950	JJ	050
FK	655	GK	755	HK	855	IK	955	JK	055
FL	660	GL	760	HL	860	IL	960	JL	060
FH	665	GM	765	HM	865	IH	965	JH	065
FN	670	GN	770	HN	870	IN	970	JN	070
FO	675	GO	775	HO	875	IO	975	JO	075
FP	680	GP	780	HP	880	IP	980	JP	080
FQ	685	GQ	785	HQ	885	IQ	985	JQ	085
FR	690	GR	790	HR	890	IR	990	JR	090
FS	695	GS	795	HS	895	IS	995	JR	095
FT	600	GT	700	HT	800	IT	900	JT	000

Appendix 3.01 - Transmission Characteristics

A-3.01-37

Standard Put Strike Price Codes

NA	105	OA	205	PA	305	QA	405	RA	505
NB	110	OB	210	PB	310	QB	410	RB	510
NC	115	OC	215	PC	315	QC	415	RC	515
ND	120	OD	220	PD	320	QD	420	RD	520
NE	125	OE	225	PE	325	QE	425	RE	525
NF	130	OF	230	PF	330	QF	430	RF	530
NG	135	OG	235	PG	335	QG	435	RG	535
NH	140	OH	240	PH	340	QH	440	RH	540
NI	145	OI	245	PI	345	QI	445	RI	545
NJ	150	OJ	250	PJ	350	QJ	450	RJ	550
NK	155	OK	255	PK	355	QK	455	RK	555
NL	160	OL	260	PL	360	QL	460	RL	560
NM	165	OM	265	PM	365	QM	465	RM	565
NN	170	ON	270	PN	370	QN	470	RN	570
NO	175	OO	275	PO	375	QO	475	RO	575
NP	180	OP	280	PP	380	QP	480	RP	580
NQ	185	OQ	285	PQ	385	QQ	485	RQ	585
NR	190	OR	290	PR	390	QR	490	RR	590
NS	195	OS	295	PS	395	QS	495	RS	595
NT	100	OT	200	PT	300	QT	400	RT	500
SA	605	TA	705	UA	805	VA	903	WA	005
SB	610	TB	710	UB	810	VB	910	WB	010
SC	615	TC	715	UC	815	VC	915	WC	015
SD	620	TD	720	UD	820	VD	920	WD	020
SE	625	TE	725	UE	825	VE	925	WE	025
SF	630	TF	730	UF	830	VF	930	WF	030
SG	635	TG	735	UG	835	VG	935	WG	035
SH	640	TH	740	UH	840	VH	940	WH	040
SI	645	TI	745	UI	845	VI	945	WI	045
SJ	650	TJ	750	UJ	850	VJ	950	WJ	050
SK	655	TK	755	UK	855	VK	955	WK	055
SL	660	TL	760	UL	860	VL	960	WL	060
SM	665	TM	765	UM	865	VM	965	WM	065
SN	670	TN	770	UN	870	VN	970	WN	070
S0	675	TO	775	UO	875	VO	975	WO	075
SP	680	TP	780	UP	880	VP	980	WP	080
SQ	683	TQ	785	UQ	885	VQ	985	WQ	085
SR	690	TR	790	UR	890	VR	990	WR	090
SS	695	TS	795	US	895	VS	995	WS	095
ST	600	TT	700	UT	800	VT	900	WT	000

The following two (2) letter combinations fall outside the set assigned to standard strike price codes and are therefore available for coding strike prices which are not capable of being expressed within the standard scheme described above:

Non-Standard Call Strike Price Codes

										KA	LA	MA
										KB	LB	MB
										KC	LC	MC
										KD	LD	MD
										KE	LE	ME
										KF	LF	MF
										KG	LG	MG
										KH	LH	MH
										KI	LI	MI
										KJ	LJ	MJ
										KK	LK	HK
										KL	LL	ML
										KM	LM	MM
										KN	LN	MN
										KO	LO	MO
										KP	LP	MP
										KQ	LQ	MQ
										KR	LR	MR
										KS	LS	MS
										KT	LT	MT
AU	BU	CU	DU	EU	FU	GU	HU	IU	JU	KU	LU	MU
AV	BV	CV	DV	EV	FV	GV	HV	IV	JV	KV	LV	MV
AW	BW	CW	DW	EW	FW	GW	HW	IW	JW	KW	LW	MW
AX	BX	CX	DX	EX	FX	GX	HX	IX	JX	KX	LX	MX
AY	BY	CY	DY	EY	FY	GY	HY	IY	JY	KY	LY	MY
AZ	BZ	CZ	DZ	EZ	FZ	GZ	HZ	IZ	JZ	KZ	LZ	MZ

Appendix 3.01 - Transmission Characteristics

A-3.01-39

Non-Standard Put Strike Price Codes

										XA	YA	ZA
										XB	YB	ZB
										XC	YC	ZC
										XD	YD	ZD
										XE	YE	ZE
										XF	YF	ZF
										XG	YG	ZG
										XH	YH	ZH
										XI	YI	ZI
										XJ	YJ	ZJ
										XK	YK	ZK
										XL	YL	ZL
										XM	YH	ZM
										XN	YN	ZN
										XO	YO	ZO
										XP	YP	ZP
										XQ	YQ	ZQ
										XR	YR	ZR
										XS	YS	ZS
										XT	YT	ZT
NU	OU	PU	QU	RU	SU	TU	UU	VU	WU	XU	YU	ZU
NV	OV	PV	QV	RV	SV	TV	UV	VV	WV	XV	YV	ZV
NW	OW	PW	QW	RW	SW	TW	UW	VW	WW	XW	YW	ZW
NX	OX	PX	QX	RX	SX	TX	UX	VX	WX	XX	YX	ZX
NY	OY	PY	QY	RY	SY	TY	UY	VY	WY	XY	YY	ZY
NZ	OZ	PZ	QZ	RZ	SZ	TZ	UZ	VZ	WZ	XZ	YZ	ZZ

4.04.3 Strike Price

The strike price for an option will be expressed in a six (6) byte numeric field in the same manner as the trade price field. If a future, this field will be space filled.

May 22, 1998

Exchange ID: G
 Exchange: Minneapolis Grain Exchange

<u>BATE Code</u>	<u>Definition</u>	<u>Application</u> (may update)
Space	Trade	High, Low, Last Price (s)
A	Ask	Low, Last Price (s)
B	Bid	High, Last Price (s)
F	Fast (Trade)	High, Low, Last Price(s)
G	Fast Ask	Low, Last Price (s)
H	Fast Bid	High, Last Price (s)
N	Nominal	Closing Price Only
	Match Trade	High, Low, Last used with Category "E" (Exception Quote) only

Note: Highs and Lows may be updated by the appropriate BATE Codes above ONLY AFTER a Future or Strike has been "OPENED" (indicated by receipt of a CATEGORY O Message for the specific Future or Strike). For example, Bids and/or Asks before an Opening DO NOT update a High or Low.

The codes for Fast "F", "G", "H" are not currently used by Minneapolis Grain Exchange. No immediate plans to implement.

For Category A or T Messages (Type " ")

Vendors which display a prevailing Bid and Ask Price should update such prices in accordance with the following:

- When the Trade or Bid price is equal to, or higher than, the prevailing Ask Price, blank the Ask Price display

When the Trade or Ask Price is equal to, or lower than, the prevailing Bid Price, blank the Bid Price display

Exchange ID: K
 Exchange: Kansas City Board of Trade

<u>BATE Code</u>	<u>Definition</u>	<u>Application</u> (may update)
Space	Trade	High, Low, Last Price (s)
A	Ask	Low, Last Price (s)
B	Bid	High Last Price (s)
F	Fast (Trade)	High, Low, Last Price(s)
G	Fast Ask	Low, Last Price (s)
H	Fast Bid	High, Last Price (s)
N	Nominal	Closing Price Only
M	Match Trade	High, Low, Last used with Category "E" (Exception Quote) only

Note: Highs and Lows may be updated by the appropriate BATE Codes above ONLY AFTER a Future or Strike has been "OPENED" (indicated by receipt of a CATEGORY O Message for the specific Future or Strike). For example, Bids and/or Asks before an Opening DO NOT update a High or Low.

The codes for Fast "F", "G", "H" are not currently used by Kansas City Board of Trade. No immediate plans to implement.

For Category A or T Messages (Type " ")

Vendors which display a prevailing Bid and Ask Price should update such prices in accordance with the following:

- When the Trade or Bid price is equal to, or higher than, the prevailing Ask Price, blank the Ask Price display

When the Trade or Ask Price is equal to, or lower than, the prevailing Bid Price, blank the Bid Price display

Chicago Mercantile Exchange -- Exchange ID: M

<u>BATE Code</u>	<u>Definition</u>	<u>Application may update)</u>
Space	Trade	High, Low, Last Price(s)
A	Ask	Low, Last Price(s)
B	Bid	High, Last Price(s)
N	Nominal	Closing Price only
E	Exchange for Physicals Category "E" (exception quote)	
R	Request for Quote (for use in the GLOBEX session)	
D	Delete request for Quote (for use in the GLOBEX session)	

NOTE: Generally, a market is open upon receipt of the first sale quote. An opening range message, Category "O", will be transmitted shortly after a market has opened. There are bid/ask messages which may be transmitted prior to the first sale quote.

For category A messages (futures only) -

Bid and/or Ask prices received prior to market opening do establish high or low respectively. These prices should be displayed as normal bids and asks.

For category N messages (options only) -

Bid and/or ask prices received in the "Last Quote" field should be handled in the same manner as category A messages described above. Prices received in the market bid and/or ask price field prior to market opening should be treated normally. (Market bid or ask prices never establish a new high or low).

Exchange ID: W
Exchange: Winnipeg Commodity Exchange

Exchange ID: G

Exchange: Minneapolis Grain Exchange

Not Applicable at this time

Exchange ID: K

Exchange: Kansas City Board of Trade

Not Applicable at this time

Exchange ID: M

Exchange: Chicago Mercantile Exchange

See appendix 7.0

Exchange ID: P

Exchange: Philadelphia Board of Trade

Not Applicable at this time

Exchange ID: S

Exchange: Sydney Futures Exchange

Not Applicable at this time

Exchange ID: W

Exchange: Winnipeg Commodity Exchange

Not Applicable at this time

Exchange ID: Y

Exchange: Sydney Computerised Overnight Market (SYCOM)

Not Applicable at this time

CME usage of Category Code S, Spread - Type C,

Combination Trades Message

The Chicago Mercantile Exchange's (CME) usage of the Category Code S - Spread Message, Type Code C - Combination Trades is defined as follows:\

This particular Type Code is called Combination Trades in order to allow for all possible trades where two contracts are involved. For example: Long EDU9 and Short EDZ9 is a spread; Long EDU9 and Long EDZ9 is a strip. In the future the CME may want to list combinations where more than two contracts are traded. In this event we would define other type codes in the Category S message would be defined. The new records would have the same format, except it would increase in length to accommodate the data for the Third Contract, Fourth Contract, etc.....

The Following explanation is to be used for Combination Trades on GLOBEX:

Initially, GLOBEX will only use two-legged spreads (defined as long the first contract and short the second contract).

In GLOBEX, Spreads are treated as a separate product. Therefore, the CME will be transmitting via the Category Code S, Type C message: Bids, Asks, Trades, "Requests for Quotes", Opens, Indicative Opens, and Suspension of Trading messages for each defined Combination Trade.

Combination Trade

ID: The Combination Trade ID is a ten (10) Character field containing the symbol selected by the exchange for the particular combination. It is free form in nature. Each Vendor will develop its own scheme for user recognition.

Fractional

Indicator: This indicator is relevant for combination trade value one and two. It is the same as the fractional indicator used in other ITC messages.

Combination Trade Header:

Combination Trade

Category Code: Code B for Bid/Ask
 Code E for Exceptional Quotation
 Code O for Opens
 Code T for Bid/Ask/Trade
 Code U for Special Range Quotations

Treatment of these codes should be the same as defined for the related Category Code Messages.

Combination Trade Header (cont.):

Combination Trade

Type Code: Code D for Delete
 Code I for Insert

Treatment of these codes should be the same as defined for the related Type Code Messages. There are no inserts or deletes in GLOBEX. However, if in the future the CME decides to transmit this message for Regular Trading Hours, this type will be necessary. The Insert/Delete format is not included at this time.

Special Indicator: (or BATE Code)

Combination Trade

Category Code:

E	=	Code D for Delete "Request for Quote"
E	=	Code R for "Request For Quote"
U	=	Code I for Indicative Opens
U	=	Code S for Suspension of Trading
T,B,O	=	Not used

Treatment of these codes should be the same as defined for the related Bate Code in Category Code "E" or the Special Indicator in Category Code "U".

Combination Trade

Sign One:

"+"	=	a positive combination trade value
"-"	=	a negative combination trade value

This sign indicates whether the combination trade value is a positive or negative value.

Combination Trade

Value One:

The usage for each combination trade category code is defined below:

Category

Code:

Usage:

T	=	The value of the entire combination trade.
B	=	The value of the Bid.
E	=	Not used.
O	=	The first value in the opening range.
U	=	Special Indicator
I	=	The value of the indicative quote.
U	=	Special Indicator
S	=	The first value in the suspension of trading.

Combination Trade

BATE Code One: B = Bid
 A = Ask
 Space = Trade

This code is used in the same manner as it is used in the current ITC specification. "B" implies you want to buy the first contract and sell the second. "A" implies you want to sell the first contract and buy the second.

Combination Bid Size/

Trade Quantity: The usage for each combination trade category code is defined below:

Category		Usage:
Code:		
T	=	The quantity of the combination contract.
B	=	The size of the Bid.
E	=	Not used.
O	=	The quantity traded at the open.
U	=	Special Indicator I = Not used.
U	=	Special Indicator S = Not used.

NOTE: In order to have an accurate cumulative volume for the combination trade, quote vendors must add this quantity into the total quantity for the specific combination trade.

Combination Trade:

Sign Two: "+" = a positive combination trade value
 "-" = a negative combination trade value

This sign indicates whether the combination trade value is a positive or negative value.

Listed below are the ITC Message Categories, ITC Category
GLOBEX implementation.

<u>ITC Category</u> Y	<u>ITC Category</u> <u>DEscriptions</u>	<u>RTH</u>	<u>GLOBEX</u>	<u>Facts/Usage</u>
	Header Message	Y	Y	<u>Message Time</u> In GLOBEX, the Message Time Stamp will reflect the time the trade is executed and will be displayed in Chicago Time.
				<u>Sequence Numbers</u> <ul style="list-style-type: none"> • Sequence Numbers will start with the number 00001 at the beginning of the GLOBEX session. • Prior to the start of RTH, CME will send Category C (Control Message), Type Code K (Set Sequence Number) message to indicate the first sequence number of RTH. • Usually RTH sequence numbers will be a continuation of GLOBEX sequence numbers.
A	Bid/Ask/Trade Futures - no volume	Y	N	
B	Bid & Ask	N	Y	<ul style="list-style-type: none"> • Cumulative size at the best bid and ask price <u>will be sent</u> with each message. • A change in quantity or price will cause a new Category B Message to be sent. • A change in quantity or price will cause a new Category B Message to be sent. • If a bid or ask price changes, which constitutes a new last, first a Category T Message will be sent and then a Category B message. (See Category T for Price Change definition.) • Clear Quote <ul style="list-style-type: none"> A. Clear Quote will only be transmitted if there is no longer size at any price for a particular product. B. A Clear Quote is indicated by filling either or both price fields with zeros. <p>EXAMPLE: If the size of a bid at a price of 150 goes to zero and there is a size at a price of 149, then a new bid will go out at 149. However, if there is no size at 149 bid or any other price then a clear quote will be sent.</p>
<u>ITC Category</u> Y	<u>ITC Category</u> <u>DEscriptions</u>	<u>RTH</u>	<u>GLOBEX</u>	<u>Facts/Usage</u>
C	<u>Control Message</u> A - Start of Simulated Data	Y	Y	This message type will be used in general.
	B - End of Simulated Data	Y	Y	This message type will be used in general.
	C - Start of Communications Testing	Y	Y	This message type will be used in general.
	D - Start of Official Transmission	N	Y	This message type <u>will be sent</u> prior to GLOBEX transmissions. However, this message type <u>will not</u> be sent prior to RTH transmissions.
	G - Halt in Trading	Y	Y	This message type will be used in general.

	I - End of Official	Y	N	This message type <u>will not</u> be sent at the end of the GLOBEX session. However, it <u>will be</u> sent at the end of the RTH session.
	J - End of Communications Testing	Y	Y	This message type will be used in general.
	K - Set Sequence	Y	Y	This message type will be used in both sessions. IMPORTANT: See the comments under Header Message - Sequence Numbers.
	N - Test Pattern	Y	Y	This message type will be used in general.
	O - Test Pattern	Y	Y	This message type will be used in general.
	R - Trading Resumed	Y	Y	9. This message type will be used in general.
	S - Simulated Data Warning	Y	Y	12. This message type will be used in general.
	T - Line Integrity Verification	Y	Y	12. This message type will be used in general.
E	Exceptional Quote	Y	Y	<ul style="list-style-type: none"> • CME has established a new Bate Code of Bate "R", Request for Quote Code "R" and a Delete Request for Quote Code of "D", • The Request for Quote is to be used if a GLOBEX participant wants to "Request" a current quote from the marketplace. • The Delete Request for Quote message will be sent from the CME after the "Request for Quote" is 30 seconds old. • The Price, Volume Traded and Indicator fields will be spaces. • IMPORTANT: The display of this message is important to your customers in order for them to know that there is someone interested in that particular market.
F	Market Condition	Y	N	
H	High/Low/Last Type "S" Session Type " " Daily	Y	Y	<ol style="list-style-type: none"> 1. A session and daily H/L/L message will be sent <u>during</u> GLOBEX or RTH if a vendor requests this transmission 2. An adjustment during RTH that affects the High/Low will generate a Category "H", Type Code "S" Session message and Type Code " " Daily Summary message if the daily high or low was affected. 3. Session ID <ol style="list-style-type: none"> A. 01 = GLOBEX B. 02 = RTH
I	Volume & Open Interest	Y	Y	<ol style="list-style-type: none"> 1. The CME will send Category I, Type Code Type "S" Session "S", messages at around 10:00 AM (Chicago Type " " Daily Summary time) during RTH for the same day GLOBEX session with a session indicator of 01. 2. Volume & Open Interest, Category Code I, Type Code " " will be sent for the previous trading <u>day's</u> GLOBEX and RTH sessions prior to the start of RTH. 3. For the Category I, Type Code "S", Session message, the record length will increase to 71 in order to include Session ID. Session ID will be at

				<p>the end.</p> <p>4. Session ID</p> <p>A. 01 = GLOBEX</p> <p>B. 02 = RTH</p>
	Summary Message Type " " Daily Summary	Y	N	<p>1. At the end of RTH, CME will send Category J, Type " " messages indicating the entire day's summary messages.</p> <p>2. The CME will <u>not</u> send Category J, Type "S" messages at the end of GLOBEX trading or at the end of RTH.</p> <p>3. <u>IMPORTANT</u> - Currently at the end of trading in each market, CME sends the following message: Category V - Cumulative Volume Message</p> <p>We will not be sending this message at the end of trading in each Market. This data is included in the Category "J", Summary Message. The CME will continue to transmit Category "Q", Settlement Price, and Category P, Closing Price messages after the close of each market in RTH.</p>
N	Bid & Ask Market Bid/Ask/Trade	Y	N	
O	Opening Range Type Code " " only	Y	Y	<p>1. In GLOBEX:Type Code " " only</p> <p>A. Category "O", Type Code " " will be sent when a product opens.</p> <p>B. It will be transmitted prior to any trades for that product.</p> <p>C. Bids and Asks could be sent prior to the open.</p> <p>D. It will be a single price opening.</p> <p>E. The Second Price/Bate Code, and Market Direction fields will be spaces. Volume traded after the opening price will be supplied.</p> <p>2. In RTH: Category "O", Type Code " " will be sent when the product opens, if: 1. It is not a GLOBEX product. -or- 2. The product did not open in the previous GLOBEX session.</p> <p>(See Category U for additional scenario explanations.</p> <p>3. The CME will be supporting only Category O, Type Code " ", in both GLOBEX and RTH sessions.</p>
P	Closing Range	Y	N	<p>1. This message will be sent at the end of RTH in the same manner as it is currently for any products that have traded in GLOBEX and RTH sessions.</p>
Q	Settlement	Y	Y	<p>1. Category Code "Q", Type Code "S" will be sent after RTH only.</p> <p>2. Limits may be applicable to RTH, GLOBEX or both sessions.</p> <p>3. Applicable settlement/limit messages will be sent corresponding to the limits.</p> <p>4. Settlement prices will always be provided.</p> <p>5. If there are no limits, the limit fields will be space filled.</p> <p>6. For Category Q, Type Code "S", Session message, the record length will increase to 54 in</p>

				order to include Session ID. 7. Session Ids: A.01 = GLOBEX, B. 02 = RTH
S	Spread	Y	Y	1. See Appendix 5.19.2 for Category Code S Type Code "C", Type " ", Spread Type C, Combination Trade for Combination message definition.
T	Bid/Ask/Trade	N	Y	1. In GLOBEX, this message is used to indicate "Price Changes" whether it is Bid, Ask, or Trade. "Price Change" definition: Any Sale different from the last quote, a Bid higher than the prior quote, an ask lower than the prior quote. 2. If a Category T message is generated for a Bid or Ask, the CME will transmit a corresponding Category B message. 3. "Volume Traded" field: A. For a Sale Price Change, the CME will transmit actual matched trade volume for this transaction. B. For a Bid or Ask Price Change, the CME will transmit "Size" for this price. C. To obtain cumulative volume for a particular product, accumulate volume reported for all trades.
U	Special Range Quotation, Special Indicator of I (Indicative Opening)	N	Y	1. These messages will be transmitted starting approximately 15 minutes before GLOBEX opens. They will be sent at periodic intervals as indications of where the market will open. 2. This message will contain a single price. (Second price field will be spaces.)
	Special Indicator of S, Suspension of Trading	N	Y	1. This message will be transmitted at the end of the GLOBEX session for each product that opened in GLOBEX. 2. This message will contain a single price equal to the last sale. (Second price field will be spaces.)
	Special Indicator of R, Resumption of Trading	Y	N	1. This message will be used <u>at the opening of a product in RTH that also opened in GLOBEX.</u> (In place of the Category O - Opening Range.) 2. This message will contain an opening range which may or may not be a single price. 3. If a product did not open in GLOBEX then you will receive a standard Category "O" message.
V	Cumulative Volume	N	N	1. The CME will <u>not</u> transmit the Category "V", Cumulative Volume message. The estimated volume information will be included in the Category "J", Daily Summary message.
X	Text Type "X" GLOBEX	Y	Y	1. This message will be used in GLOBEX in the same manner that we currently use it in RTH. For special GLOBEX alerts, the Type Code "X" will be used.
Y	Cash Prices Index Prices	Y	N	The indexes that are currently transmitted during RTH (INX, OEX, SDX) <u>will not</u> be transmitted during GLOBEX. However, the CME may be transmitting <u>other</u> indexes during the GLOBEX session.
	Interbank Spot Bid Prices	Y	N	

Z	Contract Specifications Type "S" Session	Y	Y	<p>Prior to the start of the GLOBEX session the CME will transmit Category Z messages as follows:</p> <p><u>Type "S" Session Open/Close Time</u></p> <p>1. A. This message is to identify which commodities are eligible for trading in a specific session. B. In the Contract ID field only the 2 character ticker symbol will be used. The other 3 characters in the field will be space filled.</p> <p>2. <u>Type "F" Future Month</u></p> <p>A. This message is to identify which future contracts are eligible for trading. B. The CME will only be transmitting the Header, and Contract ID fields. The other fields will be space filled.</p> <p>3. <u>Type "O" Option Month</u></p> <p>A. This message is to identify which option contracts are eligible for trading along with a strike price range and strike price interval. B. The CME will only be transmitting the Header, Contract ID, Option ID, the strike price range in the first strike range fields, and the strike price interval (smallest) fields. The other fields will be space filled.</p> <p>4. <u>Additional Information Pertaining to Type "F" and Type "O"</u></p> <p>A. e transmitted each day prior to the start of GLOBEX. B. The "listing code" for Type "F" and Type "O" messages will contain a blank. C. Under the unusual condition that a future or an option contract is added outside of the maintenance cycle between RTH and GLOBEX, the CME will Type "F" or "O" message with a <u>Listing Code of "L"</u>.</p> <p>The CME will transmit Category "Z", Type "O" messages before the start of the RTH session if the trading in GLOBEX generated any strike prices for a particular option contract. Only the Header, Contract ID, (in its entirety) will be transmitted. The other fields will be space filled.</p> <p>6. <u>Type "X" Combination Trades</u></p> <p>A. The CME will transmit this message before the start-up of GLOBEX trading each day to specify the combination trades that are eligible to be traded in the GLOBEX session.</p> <p>NOTE: There are no "Inserts or Deletes" in GLOBEX. Retransmissions will be allowed in GLOBEX as well as RTH.</p>
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