

# TAQ NYSE BONDS CLIENT SPECIFICATION

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Date

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# **PREFACE**

## **DOCUMENT HISTORY**

| VERSION<br>NO. | DATE       | CHANGE DESCRIPTION   |
|----------------|------------|--|
| 1.0            | 4/18/2011  | Approved first release of specification  |
|                | 08/01/2012 | Document rebranded with new NYSE Technologies template   |
| 1.1            | 12/18/2012 | Updated Order Book section to correctly map the record structure for Add, Modify, Delete Orders and Order Imbalances |
| 2.0            | 08/01/2019 | Document rebranded with new ICE NYSE template.   |
|                |            | Revised version to reflect migration from FTP2 to MFT server location.   |
|                |            | Combined Trade/Trade Bust file   |
|                |            | Added NYSE Bond Closing price to Trade file  |
|                |            | Removed unused fields from Trade file  |
|                |            | Added Data elements to all NYSE TAQ BOND files   |
| 2.1            | 12/10/2024 | Updated Branding   |
|                |            | Updated SFTP Directory Information   |
|                |            | Added S3 Directory Information   |

# **CONTACT INFORMATION**

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## **FURTHER INFORMATION**

For additional information about the product visit: NYSE Exchange Data | TAQ NYSE Bonds

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## 1. INTRODUCTION

TAQ NYSE Bonds is captured and stored exactly as the trades and quotes occur throughout the trading day. The historical offering is therefore a useful tool to enable clients to recreate and simulate the delivery and receipt of real-time market data for any given day.

TAQ NYSE Bonds provides the Referential Master file data, full Level 2 OrderBook and Level 1 Trade and Trade Bust information for the NYSE Bonds market. Data is available from 2007 – present. For data prior to 2007 please contact NYSE Proprietary Data team

#### 1.1 MARKETS COVERED

The TAQ NYSE Bonds Product covers:

- Corporate debt of any NYSE Listed or Preferred equity
- Debt Securities listed on the exchange

#### 1.2 INSTRUMENTS COVERED

The TAQ NYSE Bonds Product covers:

- Depth of Book
- Trades
- Trade Busts
- Reference Data

## 1.3 PRICES

All prices included in TAQ NYSE Bonds data files are distributed as real prices, rather than the integer tick representation used by some exchanges.

The exception is for exercise prices in the master files, where if appropriate both the real price and integer tick representation are included. You can access the master files from the SFTP Directory

#### 1.4 SFTP DIRECTORY STRUCTURE

The name of the SFTP server is sftp.nyse.com. In order to establish your connection to the SFTP, NYSE needs your dedicated source IP address(es) and SSH Key(s). Please provide this information on the customer dashboard by visiting dashboard.theice.com and navigating to "SFTP Access Settings". For additional information, please refer to the NYSE SSH Key Generation Guide. For additional information regarding accessing the NYSE SFTP, please refer to the NYSE SFTP Access - User Guide.

The TAQ NYSE Bonds Client files are accessible as follows by navigating to the desired path below:

| File             | SFTP Platform Path     |
|------------------|------------------------|
| Master Reference | BND_US_ARCA_REF_MASTER |
| Order Book       | BND_US_ARCA_BOOK       |
| Trades           | BND_US_ARCA_TRADE      |

| File        | SFTP Platform Path     |  |  |
|-------------|------------------------|--|--|
| Trade Busts | BND_US_ARCA_TRADE_BUST |  |  |

## 1.5 S3 DIRECTORY STRUCTURE

#### 1.5.1 S3 BUCKET NAME

nyse.taq.prod.rawfiles

#### 1.5.2 S3 DIRECTORY NAME

## 35\_TAQ\_NYSE\_BONDS

For additional information regarding accessing this data via S3, please refer to the AWS Access - User Guide.

#### 1.6 FILE FORMAT

All TAQ NYSE Bonds data files are delivered in ASCII, pipe-delimited format and are compressed using GZIP. Text files within the .gz archives have a .csv extension.

## 1.7 ALTERNATIVE PRODCUCTS

For details of related TAQ products and the full range of TAQ offerings, please refer to the Historical Data Products section here.

# 2. DELIVERY SCHEDULE

## 2.1 OVERVIEW

TAQ NYSE Bonds is captured and stored exactly as the trades and quotes occur throughout the trading day. The historical offering is therefore a useful tool to enable clients to recreate and simulate the delivery and receipt of real-time market data for any given day.

TAQ NYSE Bonds provides the Referential Master file data, full Level 2 OrderBook and Level 1 Trade and Trade Bust information for the NYSE Bonds market. Data is available from 2007 – present. MARKETS COVERED

The TAQ NYSE Bonds Product covers:

- Corporate debt of any NYSE Listed or Preferred equity
- Debt Securities listed on the exchange

## 3. MESSAGES

#### 3.1 DATA TYPES

All numeric fields, **except** Price Scale Code and Auction Time, are in unsigned binary. Price Scale Code and Auction Time are alphanumeric. All alphanumeric fields are left justified and null padded. Alphanumeric fields may not terminate in a null character if their full length is used for data.

#### 3.1.1 Sequence Numbers

Sequence Numbers are assigned to application messages and are four byte integers. These numbers start at one (1) at the beginning of a trading session and increment for each new message. Clients may use sequence numbers to recover missed messages. See **Recovery** for more information.

#### 3.1.2 Prices

Sequence Numbers are assigned to application messages and are four byte integers. These numbers start at one (1) at the beginning of a trading session and increment for each new message. Clients may use sequence numbers to recover missed messages. See **Recovery** for more information.

Prices are four byte integers in binary. The decimal position can be determined from the value in the Price Scale Code field. To determine the decimal price, divide the whole integer price by the denominator value shown in Table 3.

- Example 1: Whole integer price is 1350 and the price scale code is 2. The decimal price = 1350 / 100 (102) = 13.50
- Example 2: Whole integer price is 135000 and the price scale code is 4.
   The decimal price = 135000 / 10,000 (104) = 13.50.
- Example 3: Whole integer price is 25 and the price scale code is 0. No division is necessary  $(10_0 = 1)$ . The result is a price of 25 (same 25.00).

**Table 1 TAQ NYSE Bonds Trade File Data Fields** 

| PRICE SCALE CODE | DENOMINATOR VALUE | DENOMINATOR VALUE (FACTOR OF 10) |
|------------------|-------------------|----------------------------------|
| 0                | NA                | NA                               |
| 1                | 10                | 10^1 (101)                       |
| 2                | 100               | 10^2 (102)                       |
| 3                | 1,000             | 10^3 (103)                       |
| 4                | 10,000            | 10^4 (104)                       |
| 5                | 100,000           | 10^5 (105)                       |
| 6                | 1,000,000         | 10^6 (106)                       |

**Note:** Price Scale Code of 0 indicates that the whole integer price in the price field is the actual price and no conversion or division is necessary.

### 3.1.3 Timestamps

The timestamp field is a four byte integer that provides time in milliseconds starting from Midnight (00:00:00:000) of the trading day. NYSE Bonds computes timestamps as:

Seconds x 1000 + milliseconds

For example, the timestamp for 10:00:00:.376 is converted to  $(36000 \times 1000) + 376 = 36000376$ .

Clients can reverse this algorithm to obtain the number of seconds and milliseconds in a NYSE ArcaBook timestamp.

#### 3.2 SYMBOLOGY

The symbology used for the Stock or Symbol fields in order messages depends on the type of security. This is directly related to the System Code field in a message which indicates the trading platform that processed this order.

- Bond orders for System Code = F (ArcaEx Fixed Income/Bond) use these identifiers:
  - CUSIP/ISIN for clients who satisfy licensing requirements. By default CUSIP data is not disseminated in messages and will be left null. CUSIP data is only disseminated to clients that request this by contacting the Service Desk.
  - NYSE Bond Symbol is a unique identifier for the bond assigned by NYSE®. See the Securities
     Master file at http://www.nyxdata.com for information correlating these symbols to bonds
     traded on NYSE Arca.

#### 3.3 BOND PRICE TYPES

Generally, the price of a bond order is expressed as a percentage of par. However, some bonds may express price in other manners such as yield-to-maturity.

# 4. TAQ NYSE BONDS FIELD LAYOUTS

# 4.1 MASTER REFERENCE FILE

For example, BND\_US\_ARCA\_REF\_MASTER\_20110901.xls

**Table 3 TAQ NYSE Bonds Master Reference File data fields** 

| FIELD NAME    |     |                      | DESCRIPTION   |
|---------------|-----|----------------------|---|
| Bond_Symbol   | 76  | Text                 | Underlying + Alt Symbol + Suffix  |
| Issuer_name   | 255 | Text                 | Corporate Name of issuer and Security Description   |
| Cusip_id      | 10  | Text                 | CUSIP Identity of the Security  |
| Interest_rate | 5   | Number               | The Coupon Rate of the Security   |
| Maturity_date | 8   | Date<br>(mm/dd/yyyy) | The Date the Bond Matures   |
| Face_value    | 5   | Number               | The Amount Payable per Bond at Maturity   |
| Underlying    | 20  | Text                 | The Common Stock Symbol of the issuer if there is one. Blank if no common stock.  |
| Alt_symbol    | 50  | Text                 | An Alternative Symbol is assigned if there is not an underlying security or when the bond is issued by a wholly owned subsidiary.   |
| Suffix        | 6   | Text                 | Used for additional identification information. Current contains the maturity year and may be followed by an incrementing alpha character to differentiate securities from the same issuer that have the same maturity date.  |
| Issue_type    | 50  | Text                 | The type of security  Values:  American Depository Receipts American Depository Shares Blonds Common Stock Exchange Trades Funds Ordinary Shares Others Preferred Rights Shares of Beneficial Interest Units Warrants Debentures Foreign Index Linked Notes Index Corporate Bonds Convertible Bonds |

| FIELD NAME      |    |      | DESCRIPTION   |
|-----------------|----|------|---|
| Bypass_clearing | 30 | Text | Where the bond clears if it cleared by NYSE   |
|                 |    |      | <ul> <li>NSCC = National Securities Clearing Corporation</li> <li>FICC = Fixed Income Securities Corporation</li> <li>No Clearing = Clearing is the responsibility of the trade parties</li> </ul>  |
| Currency_code   | 30 | Text | Denotes the currency and or settlement cycle for the security.  Values:  Regular Way Cash Next Day T-2 British Pounds Euros Japanese Yen Mexican Peso   |
| Flat            | 50 | Text | When bond is trading "Flat" meaning trading without accrued interest.  Values:  F=Flat (no accrued interest)  (Blank)=Interest Pricing in effect  |
| Bankrupt        | 30 | Text | Trading Action.  Values:  C = Called D = De-listed X = Ex-interest M = Missed Interest Payment Q = Bankrupt L = Late Filing B = Below Listing Standards A = Late Filing and Below Listing Standards F = Bankrupt and Late Filing Bankrupt and Below Listing Standards |
| Exchange        | 50 | Text | Values:  N = Listed on NYSE U = Unlisted  |

## 4.2 TRADE FILE

For example, BND US ARCA TRADE 20110902.xls

NYSE ArcaTrade sends this message for the following trade events:

- An order partially trades
- An order completely trades

## 4.2.1 Add New Trade Message

NYSE Bonds sends this message for a new trades

**Table 4 TAQ NYSE Bonds Trade File Data Fields** 

| FIELD NAME  | FIELD<br>NUMBER | LENGTH | FORMAT | DESCRIPTION   |
|---|-----------------|--------|--------|---|
| Msg Type  | 1               | 1      | Alpha  | This field identifies the type of message: X – Executed order   |
| Timestamp   | 2               | 10     | Int    | Time the trade occurred in milliseconds since Midnight.   |
| Sequence Number   | 3               | 10     | Int    | 1 – 2147483647  |
| Trade Reference<br>Number (previously<br>called Ord Refers) | 4               | 10     | Int    | The unique reference number per system code assigned to the transaction. For example: U110902-00581cd |
| NYSE Bond Symbol  | 5               | 22     | Alpha  | A NYSE Arca-specific identity for this bond. See Symbology for more information.                      |
| CUSIP ID (previously called symbol)                         | 6               | 14     | Alpha  | The CUSIP ID of the bond. For example: 001546AL4  |
| Volume  | 7               | 10     | Int    | Volume of the trade in actual shares  |
| Price   | 8               | 10     | Int    | The trade price   |
| System Code   | 9               | 1      | Alpha  | "F" = Bonds Trading Platform  |
| Buy Sell  | 10              | 1      | Alpha  | B – Buy order S – Sell order  |
| Exchange Code   | 11              | 1      | Alpha  | "N" = NYSE listed bond  "A" = American listed bond  Blank = all other bonds                           |
| Issue Type  | 12              | 1      | Int    | The type of bond. Additional types will be supported in future releases. 1 = corporate bonds          |

## 4.2.2 Trade BUST Message

NYSE ArcaTrade send this message when trades are busted or corrected. The Event Code field identifies the type of trigger for this message.

**Table 5 TAQ NYSE Bonds Trade Bust Data Fields** 

| FIELD NAME | FIELD<br>NUMBER | LENGTH | FORMAT | DESCRIPTION   |
|------------|-----------------|--------|--------|---|
| Msg Type   | 1               | 1      | Alpha  | This field identifies the type of message: B – Trade Bust |

| FIELD NAME  | FIELD<br>NUMBER | LENGTH | FORMAT | DESCRIPTION  |
|---|-----------------|--------|--------|--|
| Timestamp   | 2               | 10     | Int    | Time the trade occurred in milliseconds since Midnight.  |
| Sequence Number   | 3               | 10     | Int    | 1 – 2147483647   |
| Trade Reference<br>Number (previously<br>called order refers) | 4               | 10     | Alpha  | The unique reference number per trading platform (system code) assigned to the trade that has been busted or modified. |
| Quantity  | 5               | 10     | Int    | Number of bonds busted or corrected.   |
| Price   | 6               | 10     | Int    | Busted or corrected trade price.   |
| System Code   | 7               | 1      | Alpha  | "F" = NYSE Arca Bonds  |
| Event Code  | 8               | 1      | Alpha  | "B" = Trade Bust "C" = Trade Correction  |
| Exchange Code   | 9               | 1      | Alpha  | "N" = NYSE listed bond Blank = all other bonds   |
| Security Type   | 10              | 1      | Alpha  | The type of bond. Additional types will be supported in future releases. 1 = corporate bonds                           |
| NYSE Bond Symbol  | 11              | 22     | Alpha  | A NYSE Arca-specific identity for this bond. See Symbology for more information.                                       |
| CUSIPID (previously called symbol)                            | 12              | 14     | Alpha  | The CUSIP ID of the bond. For example: 001546AL4   |

# 4.2.3 Closing Price Message

ArcaTrade sends this message during day-end processing with the final closing price and volume for a bond. The NYSE Bond Closing Price functionality is not supported at this time and will be implemented in a future release.

| FIELD NAME                | FIELD<br>NUMBER | LENGTH | FORMAT | DESCRIPTION   |
|---------------------------|-----------------|--------|--------|---|
| Msg Type                  | 1               | 1      | Alpha  | Z   |
| Closing Time              | 2               | 10     | Int    | Time the closing price was set in milliseconds since Midnight.                                |
| Sequence Number           | 3               | 10     | Int    | 1 – 2147483647  |
| Trade Reference<br>Number | 4               | 10     | Alpha  | The unique reference number per trading platform (system code) assigned to the closing price. |
| Quantity                  | 5               | 10     | Int    | Number of bonds for the closing price   |
| Closing Price             | 6               | 10     | Int    | The closing price   |
| System Code               | 7               | 1      | Alpha  | "F" = NYSE Arca Bonds   |
| Exchange Code             | 8               | 1      | Alpha  | "N" = NYSE listed bond Blank = all other bonds  |
| Security Type             | 9               | 1      | Int    | The type of bond. Additional types will be supported in future releases. 1 = corporate bonds  |
| NYSE Bond Symbol          | 10              | 22     | Alpha  | A NYSE Arca-specific identity for this bond. See Symbology for more information.              |

| FIELD NAME | FIELD<br>NUMBER | LENGTH | FORMAT | DESCRIPTION                                      |
|------------|-----------------|--------|--------|--|
| CUSIPID    | 11              | 14     | Alpha  | The CUSIP ID of the bond. For example: 001546AL4 |

#### 4.3 ORDER BOOK FILE

For example, BND US ARCA BOOK 20110901.xls

#### 4.3.1 Add New Order Message

NYSE Bonds sends this message for a new open order. The order reference number is a unique identifier for an order within one order book (per trading platform indicated by system code). The sequence number is a unique identifier for the NYSE Bonds message across all trading platforms (system codes).

For attributed orders, NYSE Bonds includes the appropriate market maker ID (MMID) in the Quote ID field. The MMID is the first four letters of a firm's ETPID. For example, if Broker Dealer ABCDE designates that an order should be attributed, the QuoteID for the order becomes AABCD. For orders that are not attributed, the Quote ID field is ARCAX.

In this version of the specification, the new OrderType and Minimum Quantity fields support two new order types: All or None (AON) and Minimum Quantity orders.

Table 6 TAQ NYSE Bonds Order Book File - Add New Order Message

| FIELD NAME                | FIELD<br>NUMBER | LENGTH | FORMAT | DESCRIPTION  |
|---------------------------|-----------------|--------|--------|--|
| Msg Type                  | 1               | 1      | Alpha  | 'N'  |
| Sequence                  | 2               | 10     | Int    | 1-2,147,483,647  |
| Order Reference<br>Number | 3               | 10     | Int    | The unique reference number per system code assigned to the new order                |
| Exchange Code             | 4               | 1      | Alpha  | <ul><li>N=NYSE</li><li>Blank=any other bond</li></ul>                                |
| Buy/Sell Indicator        | 5               | 1      | Alpha  | <ul><li>B=Buy</li><li>S=Sell</li></ul>   |
| Shares                    | 6               | 10     | Int    | The size of the order  |
| Bond Symbol               | 7               | 22     | Alpha  | A NYSE Bonds -specific identity for this bond. See<br>Symbology for more information |
| Price                     | 8               | 10     | Int    | The limit price of the order   |
| Seconds                   | 9               | 5      | Int    | Seconds timestamp  |
| Milliseconds              | 10              | 3      | Int    | Millisecond timestamp  |
| System Code               | 11              | 1      | Alpha  | F=Bonds  |
| Quote ID                  | 12              | 5      | Alpha  | 'A'+MMID - attributed  'ARCAX' - non-attributed ArcaEx quote                         |
| Flat                      | 13              | 1      | Alpha  | F=Flat Pricing  Blank - interest pricing is in effect                                |

| FIELD NAME       | FIELD<br>NUMBER | LENGTH | FORMAT | DESCRIPTION  |
|------------------|-----------------|--------|--------|--|
| Trading Action   | 14              | 1      | Int    | <ul> <li>1 - Called</li> <li>2 - De-listed</li> <li>3 - Ex-interest</li> <li>4 - missed an interest payment</li> <li>5 - Bankrupt</li> <li>6 - Late Filing</li> <li>7 - Below Listing Standards</li> <li>8 - Late Filing and Below Listing Standards</li> <li>9 - Bankrupt and Late Filing</li> <li>10 - Bankrupt and Below Listing Standards</li> </ul> |
| Security Type    | 15              | 1      | Int    | The type of bond.  • 1 - corporate bonds  • blank - other  |
| Padding          | 16              | 1      | Alpha  | Blank  |
| CUSIP ID         | 17              | 14     | Alpha  | Committee on Uniform Securities Identification Procedures (CUSIP) code. This field consists of the following:  Digit 1- New/Prior CUSIP Indicator Digits 2-10 = CUSIP Code Digit 11 = Special Condition Code Digit 12 = Foreign company Designation Digit 13 = Exchange Designation For example: 001055AC6   |
| Order Type       | 18              | 1      | Int    | <ul> <li>0 – Unspecified</li> <li>1 – All or None</li> <li>2 – Minimum Quantity</li> </ul>   |
| Minimum Quantity | 19              | 10     | Int    | For AON order, the size of the order. For Minimum Quantity order, the minimum size of the order. For other order types, 0.   |

## 4.3.2 Modify Order Message

NYSE Bonds sends this message when an order in an NYSE Bonds book is modified. The order reference number refers to the original order sent in the add order message. The following events trigger a modify order message.

- The price of an order changes
- The size of an order changes
- An order is partially filled
- An order is routed to an away market with some shares remaining in the NYSE Bonds book

Note: If an away market declines the NYSE Bonds preference, a Modify Order message is sent to "add" the declined shares back to the NYSE Bonds book.

In this version of the specification, the new OrderType and Minimum Quantity fields support two new order types: All or None (AON) and Minimum Quantity orders.

Table 7 TAQ NYSE Bonds Order Book File - Modify Order Message

| FIELD NAME                | FIELD       | LENGTH | FORMAT | DESCRIPTION   |  |
|---------------------------|-------------|--------|--------|---|--|
|                           | NUMBER<br>1 | 1      | Alpha  | This field identifies the type of message:  |  |
| Msg Type                  | 1           | 1      | Аірпа  | C – Modify order  |  |
| Sequence                  | 2           | 10     | Int    | 1-2,147,483,647   |  |
|                           |             |        |        |   |  |
| Order Reference<br>Number | 3           | 9      | Int    | The unique reference number per system code assigned to the new order   |  |
| Shares                    | 4           | 9      | Int    | Show size of order  |  |
| Price                     | 5           | 10     | Int    | The limit price of the order  |  |
| Seconds                   | 6           | 5      | Int    | Seconds timestamp   |  |
| Milliseconds              | 7           | 3      | Int    | Milliseconds timestamp  |  |
| Bond Symbol               | 8           | 22     | Alpha  | Bond Symbol   |  |
| Exchange Code             | 9           | 1      | Alpha  | N=NYSE  |  |
|                           |             |        |        | Blank=any other bond  |  |
| System Code               | 10          | 1      | Alpha  | The ID of the originating system of the quote.  |  |
|                           |             |        |        | F – ArcaEx bonds  |  |
| Quote ID                  | 11          | 1      | Alpha  | A+MMID-attribruted  |  |
|                           |             |        |        | ARCAX-non-attributed ArcaEx quote   |  |
| Buy/Sell Indicator        | 12          | 1      | Alpha  | B=Buy   |  |
|                           |             |        |        | S=Sell  |  |
| Padding                   | 13          | 1      | Alpha  | Blank   |  |
| Padding                   | 14          | 1      | Alpha  | Blank   |  |
| Security Type             | 15          | 1      | Int    | The type of bond.   |  |
|                           |             |        |        | 1 - corporate bonds   |  |
|                           |             |        |        | blank - other   |  |
| Padding                   | 16          | 1      | Alpha  | Blank   |  |
| CUSIP ID                  | 17          | 14     | Alpha  | Committee on Uniform Securities Identification Procedures (CUSIP) code. This field consists of the following: |  |
|                           |             |        |        | Digit 1- New/Prior CUSIP Indicator     Digits 2.10 CUSIP Code   |  |
|                           |             |        |        | <ul><li>Digits 2-10 = CUSIP Code</li><li>Digit 11 = Special Condition Code</li></ul>                          |  |
|                           |             |        |        | Digit 12 = Foreign company Designation  |  |
|                           |             |        |        | Digit 13 = Exchange Designation  For example: 0010FFAC6   |  |
| Total discount of         | 10          |        | Link   | For example: 001055AC6  |  |
| Trading Action            | 18          | 1      | Int    | <ul><li>1 - Called</li><li>2 - De-listed</li></ul>  |  |
|                           |             |        |        | 3 - Ex-interest   |  |

| FIELD NAME       | FIELD<br>NUMBER | LENGTH | FORMAT | DESCRIPTION  |
|------------------|-----------------|--------|--------|--|
|                  |                 |        |        | <ul> <li>4 - missed an interest payment</li> <li>5 - Bankrupt</li> <li>6 - Late Filing</li> <li>7 - Below Listing Standards</li> <li>8 - Late Filing and Below Listing Standards</li> <li>9 - Bankrupt and Late Filing</li> <li>10 - Bankrupt and Below Listing Standards</li> </ul> |
| Order Type       | 19              | 10     | Alpha  | <ul> <li>0 – Unspecified</li> <li>1 – All or None</li> <li>2 – Minimum Quantity</li> </ul>   |
| Minimum Quantity | 20              | 1      | Alpha  | For AON order, the size of the order. For Minimum Quantity order, the minimum size of the order. For other order types, 0.   |

## 4.3.3 Delete Order Message

The Delete Order message is sent when an order is taken off of the NYSE Bonds open order book. The following events will trigger the transmission of a delete order message.

- An order is cancelled
- An order expires
- An order is routed to an away market. Note: If the away market declines the NYSE Bonds
  preference, an Add Order message with the original order reference number will be sent to return
  the order to the NYSE Bonds book.
- An order is filled

**Table 8 TAQ NYSE Bonds Order Book File - Delete Order Message** 

| FIELD NAME                | FIELD<br>NUMBER | LENGTH | FORMAT | DESCRIPTION  |
|---------------------------|-----------------|--------|--------|--|
| Msg Type                  | 1               | 1      | Alpha  | This field identifies the type of message:  • K – Delete order                                 |
| Sequence                  | 2               | 10     | Int    | 1-2,147,483,647  |
| Order Reference<br>Number | 3               | 9      | Int    | The unique reference number per system code assigned to the new order                          |
| Seconds                   | 4               | 5      | Int    | Seconds timestamp  |
| Milliseconds              | 5               | 3      | Int    | Milliseconds timestamp   |
| Bond Symbol               | 6               | 22     | Alpha  | Bond Symbol  |
| Exchange Code             | 7               | 1      | Alpha  | <ul> <li>Stock symbol</li> <li>N – NYSE-listed Bond</li> <li>Blank – any other bond</li> </ul> |
| System Code               | 8               | 1      | Alpha  | The ID of the originating system of the quote.   |

| FIELD NAME         | FIELD<br>NUMBER | LENGTH | FORMAT | DESCRIPTION  |
|--------------------|-----------------|--------|--------|--|
|                    |                 |        |        | ■ F – ArcaEx bonds   |
| Quote ID           | 9               | 1      | Alpha  | <ul> <li>A'+MMID - attributed</li> <li>'ARCAX' - non-attributed ArcaEx quote</li> </ul>  |
| Buy/Sell Indicator | 10              | 1      | Alpha  | <ul><li>B – Buy order</li><li>S – Sell order</li></ul>   |
| Padding            | 11              | 1      | Alpha  | blank  |
| Trading Action     | 12              | 1      | Int    | <ul> <li>1 - Called</li> <li>2 - De-listed</li> <li>3 - Ex-interest</li> <li>4 - missed an interest payment</li> <li>5 - Bankrupt</li> <li>6 - Late Filing</li> <li>7 - Below Listing Standards</li> <li>8 - Late Filing and Below Listing Standards</li> <li>9 - Bankrupt and Late Filing</li> <li>10 - Bankrupt and Below Listing Standards</li> </ul> |
| Security Type      | 13              | 1      | Int    | The type of bond.  • 1 - corporate bonds  • blank - other  |
| Padding            | 14              | 1      | Alpha  | blank  |
| CUSIP ID           | 15              | 14     | Alpha  | Committee on Uniform Securities Identification Procedures (CUSIP) code. This field consists of the following:  Digit 1- New/Prior CUSIP Indicator Digits 2-10 = CUSIP Code Digit 11 = Special Condition Code Digit 12 = Foreign company Designation Digit 13 = Exchange Designation For example: 001055AC6   |
| Order Type         | 16              | 1      | Int    | <ul> <li>0 – Unspecified</li> <li>1 – All or None</li> <li>2 – Minimum Quantity"</li> </ul>  |

# 4.3.4 Order Imbalance Message

NYSE Bonds sends this message in response to orders submitted during pending auctions.

Table 9 TAQ NYSE Bonds Order Book File - Order ImbalanceMessage

| FIELD NAME                 | FIELD<br>NUMBER | SIZE<br>(BYTES) | FORMAT | DESCRIPTION   |
|----------------------------|-----------------|-----------------|--------|---|
| Msg Type                   | 1               | 1               | Alpha  | This field identifies the type of message:  |
|                            |                 |                 |        | W – Order Imbalance   |
| Sequence                   | 2               | 10              | Int    | 1-999999999   |
| Bond Symbol                | 3               | 22              | Alpha  | Stock symbol  |
| Price                      | 4               | 10              | Int    | The indicative match price  |
| Shares                     | 5               | 9               | Int    | The indicative match volume   |
| Total Imbalance Volume     | 6               | 9               | Int    | The total imbalance volume  |
| Seconds                    | 7               | 5               | Int    | Seconds timestamp   |
| Milliseconds               | 8               | 3               | Int    | Milliseconds timestamp  |
| Market Imbalance<br>Volume | 9               | 9               | Alpha  | The market imbalance volume   |
| Auction Type               | 10              | 1               | Alpha  | • 'O' – Open  |
|                            |                 |                 |        | • 'M' – Market  |
|                            |                 |                 |        | • 'H' – Halt  |
|                            |                 |                 |        | • 'C' – Closing   |
| Auction Time               | 11              | 4               | Int    | Projected auction time  |
| Exchange Code              | 12              | 1               | Alpha  | N – NYSE-listed Bond  |
|                            |                 |                 |        | Blank – any other bond  |
| System Code                | 13              | 1               | Alpha  | The ID of the originating system of the quote.  |
|                            |                 |                 |        | F – ArcaEx bonds  |
| Filler                     | 14              | 1               | Alpha  | Blank   |
| Filler                     | 15              | 1               | Alpha  | Blank   |
| Security Type              | 16              | 1               | Int    | The type of bond. Additional types will be supported in future releases.                                      |
|                            |                 |                 |        | '1' - Corporate Bonds.  |
| Filler                     | 17              | 1               | Alpha  | Blank   |
| CUSIP ID                   | 18              | 14              | Alpha  | Committee on Uniform Securities Identification Procedures (CUSIP) code. This field consists of the following: |
|                            |                 |                 |        | Digit 1- New/Prior CUSIP Indicator  |
|                            |                 |                 |        | Digits 2-10 =CUSIP Code   |
|                            |                 |                 |        | Digit 11 = Special Condition Cod  |
|                            |                 |                 |        | Digit 12 = Foreign company Designation  |
|                            |                 |                 |        | Digit 13 = Exchange Designation   |
|                            |                 |                 |        | For example: 001055AC6  |

#### 4.3.5 System Event Message

NYSE Bonds sends this message to indicate a special system event to an order book. The Event Code field indicates what type of event has occurred. The System Code field indicates which order book is affected.

Event Code - 'C' indicates that all orders in the affected book (System Code) have been cancelled. This order book should be treated like a new day. Event Code - 'S' is not yet in use. This event code will indicate that all orders in the affected book for the corresponding Symbol have been cancelled.

The message also includes the next sequence number that subscribers should expect from NYSE Bonds. Generally this is the current sequence number + 1 but the sequence numbers may restart at 1.

Table 10 TAQ NYSE Bonds Order Book File - System Event Message

| FIELD NAME                          | FIELD NUMBER | LENGTH            | FORMAT | DESCRIPTION   |
|-------------------------------------|--------------|-------------------|--------|---|
| Msgt Type                           | 1            | 1                 | Int    | Υ   |
| Sequence<br>Number                  | 2            | 1 –<br>2147483647 | Int    | The sequence number of this message.  |
| Next Expected<br>Sequence<br>Number | 3            | 1 –<br>2147483647 | Int    | The sequence number that subscribers should expect for the next NYSE Bonds message. 1 – 2147483647  |
| Seconds                             | 4            | 5                 | Int    | Seconds timestamp   |
| Milliseconds                        | 5            | 3                 | Int    | Milliseconds timestamp  |
| Event Code                          | 6            | 1                 | Alpha  | What type of event has occurred. 'C' - Clear Book<br>by System Code 'S' - Clear Book by Symbol<br>(reserved for future use) 'H' - Halt Symbol 'U' -<br>UnHalt Symbol  |
| System Code                         | 7            | 1                 | Alpha  | Which order book is affected: 'F' - Bonds   |
| NYSE Bond<br>Symbol                 | 8            | 22                | Alpha  | A NYSE Bonds specific identity for this bond. See Symbology for more information  |
| Cusip ID                            | 9            | 14                | Alpha  | Committee on Uniform Securities Identification Procedures (CUSIP) code. This field consists of the following:  Digit 1- New/Prior CUSIP Indicator Digits 2-10 = CUSIP Code Digit 11 = Special Condition Code Digit 12 = Foreign company Designation Digit 13 = Exchange Designation  For example: 001055AC6 |