

ATCO File Format for Interchange of Timetable Data

This version of the ATCO file format for interchange of timetable information uses the BR CIF interchange format as a model and adds additional records to take account of the specifics of bus timetables. Version 5.00 incorporated major revisions to record layouts and is not upwardly compatible with previous versions. This version (5.10) extends the location record to include a National Gazetteer ID for PTI2000 purposes, but is otherwise the same as 5.00.

In the BR CIF each record type is distinguished by a two letter identifier in characters 1 and 2 of an up to 80 character record. This principal has been continued in the transfer format. In this version of the format the record length has been allowed to extend to 120 characters.

The transfer format is intended as a general purpose transfer mechanism of the more common elements of timetable enquiry information between different proprietary databases. The transfer format does not define the quality of the data being transferred, nor the coding schemes being used within a database. It is expected that standard coding schemes will be adopted over time and added as appendices to the specification. The transfer format does include provision for some items of meta-data. Fields may be left blank where data is not available in the exporting database.

The principals of the transfer format (record identifier and fielded data content) can be extended by creating other record identifiers. Use of 'Z' series identifiers is suggested for proprietary extensions.

Definitions

A **Journey** is the movement of a vehicle (bus, train etc.) described by a chronologically increasing sequence of stopping points and times from an origin terminal point to a destination terminal point. Conventionally this is appears as a column in a printed timetable.

A **Service** is a label attached to a group of journeys with (more or less) common stopping points. A **Route** can comprise of one or more services. The **Route Number** is often used to identify the vehicle undertaking the journey to the public.

A service is operated by an **Operator**, normally described by company trading name. A route can be operated by more than one operator.

Stops define the geographical locations at which events happen during the course of a journey. Often a journey is described by a sub-set of the stops known as **Timing Points** which are the stops defined in a printed timetable.

Events during the course of a journey describe what happens to the vehicle at each stop or timing point.

Possible events are:-
Stops to set down and pick up passengers
Arrives to set down passengers
Departs having picked up passengers
Does not stop for passengers

Valid days are days of the week and other special days (e.g. bank holidays, school term time) the journey operates.

Valid dates define the first and last date of operation of the journey. In this version of the format full four digit years are used. Previous versions used 2 digit years for compatibility with the BR CIF format. 99999999 may be used to define a journey with unknown last date.

Clusters are geographical groupings of stops at which it is possible to change from one journey to another.

The **Interchange Time** is the minimum time needed to change between journeys at a stop or within a cluster.

Record Layouts

Field	Size/ (Start)	Format	Comment
0. File Header			
This record must be the first record on any transfer file.			
File Type	8 (1)	A	ATCO-CIF - File Identifier
Version (Major)	2 (9)	I	Release version of CIF format (currently 5)
Version (Minor)	2 (11)	A	Revision of release (currently 10)
File Originator	32 (13)	A	Name of source of file (Authority etc)
Source Product	16 (45)	A	Name of source product (Program name)
Production Date	8 (61)	I	Date of file production (yyyymmdd)
Production Time	6 (69)	I	Time of file production (hhmmss)
1. Journey Records			
1a. Journey Header			
One record per journey. A journey header may be immediately followed by optional sets of date running records and journey note records and should then be followed by a set of journey records (origin, intermediate, destination) giving a set of records that completely define dates, times, places, operator and vehicle type of the journey. The entire set of records relating to a single journey may be immediately followed by one or more journey repetition records.			
Record Identity	2 (1)	A	QS - Bus Journey Header
Transaction Type	1 (3)	A	N = New D = Delete R = Revise
Operator	4 (4)	A	Short code form of operator identifier
Unique Journey Identifier	6 (8)	A	Unique identifier of journey within operator This field with operator field will give unique identifier
First date of operation	8 (14)	I	Start date of operation of journey (yyyymmdd)
Last date of operation	8 (22)	I	Last date of operation of journey (yyyymmdd)
Operates on Mondays	1 (30)	I	} 0 = does not operate on day
Operates on Tuesdays	1 (31)	I	} 1 = operates on day
Operates on Wednesdays	1 (32)	I	}
Operates on Thursdays	1 (33)	I	}
Operates on Fridays	1 (34)	I	}
Operates on Saturdays	1 (35)	I	}
Operates on Sundays	1 (36)	I	}
School Term Time	1 (37)	A	Blank = Operates days defined above S = Operates school term time only H = Operates school holidays only
Bank Holidays	1 (38)	A	Blank = Operates days defined above A = Operates additionally on bank holidays B = Operates on bank holidays only X = Operates except on bank holidays
Route Number (identifier)	4 (39)	A	Route number used as public identifier
Running Board	6 (43)	A	Operator identifier of journey
Vehicle Type	8 (49)	A	User code for vehicle type
Registration Number	8 (57)	A	Traffic commissioners registration number
Route Direction	1 (65)	A	User code to indicate direction of route

1b. Journey Date Running Records

These records can be used to identify exceptions to the first and last dates of operation in the journey header. There can be an indeterminate number of these records.

Record Identity	2 (1)	A	QE - Journey Date Running
Start of exceptional period	8 (3)	I	Date (yyyymmdd)
End of exceptional period	8 (11)	I	Date (yyyymmdd)
Operation code	1 (19)	I	0=Journey does not operate between these dates 1=Journey operates between these dates

1c. Journey Note Record

These records can be used to append note information about the journey to timetable displays. There can be an indeterminate number of these records.

Record Identity	2 (1)	A	QN - Journey Note
Note code	5 (3)	A	Abbreviation for note appended to journey
Note text	72 (8)	A	Full text of note

Journey Records

One origin record, followed by an indeterminate number of intermediate records and one destination record.

1d. Origin Record

Record Identity	2 (1)	A	QO - Bus Journey Origin
Location	12 (3)	A	Short code form of origin location
Published Departure Time	4 (15)	I	Public departure time (hhmm 24 hour clock 0001-2359)
Bay Number	3 (19)	A	Bay/Stop identifier
Timing point indicator	2 (22)	A	T1=Timing point T0=Not timing point
Fare stage indicator	2 (24)	A	F1=Fare stage F0=Not fare stage

1e. Intermediate Record

Record Identity	2 (1)	A	QI - Bus Journey Intermediate
Location	12 (3)	A	Short code form of intermediate location
Published Arrival Time	4 (15)	I	Public arrival time (hhmm 24 hour clock 0001-2359)
Published Departure Time	4 (19)	I	Public departure time (hhmm 24 hour clock 0001-2359)
Activity Flag	1 (23)	A	B=Both Pick up and Set down P=Pick up only S=Set down only N=Neither pick up nor set down (pass only)
Bay Number	3 (24)	A	Bay/Stop identifier
Timing point indicator	2 (27)	A	T1=Timing point T0=Not timing point
Fare stage indicator	2 (29)	A	F1=Fare stage F0=Not fare stage

1f. Destination Record

Record Identity	2 (1)	A	QT - Bus Journey Destination
Location	12 (3)	A	Short code form of destination location
Published Arrival Time	4 (15)	I	Public arrival time (hhmm 24 hour clock 0001-2359)
Bay Number	3 (19)	A	Bay/Stop identifier
Timing point indicator	2 (22)	A	T1=Timing point T0=Not timing point
Fare stage indicator	2 (24)	A	F1=Fare stage F0=Not fare stage

1g. Journey Repetition Record These records can be used to identify subsequent journeys which run to exactly the same sequence of stops as the immediately preceding journey records with exactly the same time differences between each stop.

Record Identity	2 (1)	A	QR - Bus Journey Repetition
Location	12 (3)	A	Short code form of origin location
Published Departure Time	4 (15)	I	Public departure time (hhmm 24 hour clock 0001-2359)
Unique Journey Identifier	6 (19)	A	Unique identifier of journey within operator
Running Board	6 (25)	A	Operator identifier of journey
Vehicle Type	8 (31)	A	User code for vehicle type

2. Location Records One location record followed by an optional additional record and an indeterminate number of alternative location records.

2a. Location Record

Record Identity	2 (1)	A	QL - Bus Location
Transaction Type	1 (3)	A	N = New D = Delete R = Revise
Location	12 (4)	A	Short code form of location
Full Location	48 (16)	A	Full text form of location used for publicity (including supplemental information to ensure uniqueness of location)
Gazetteer Code	1 (64)	A	User code to indicate type of location entry
Point Type	1 (65)	A	B = Bay/Stand/Platform S = Bus stop on single side of street P = Paired bus stops (both sides of street together) R = Railway station I = Transport interchange/bus station D = Database boundary point
National Gazetteer ID	8 (66)	A	ID of entry in National Gazetteer for this location

2b. Additional Location Information Record

Record Identity	2 (1)	A	QB - Bus Additional location Information
Transaction Type	1 (3)	A	N = New D = Delete R = Revise
Location	12 (4)	A	Short code form of location
Grid reference easting	8 (16)	I	Grid reference easting of location
Grid reference northing	8 (24)	I	Grid reference northing of location
District name	24 (32)	A	Form of location to be used when specific location is not required
Town name	24 (56)	A	Higher level form of location to be used when specific location is not required

2c. Alternative Location Record

Record Identity	2 (1)	A	QA - Bus Alternative Location
Transaction Type	1 (3)	A	N = New D = Delete R = Revise
Location	12 (4)	A	Short code form of location
Full Location	48 (16)	A	Alternative full text form of location used for publicity (including supplemental information to ensure uniqueness of location)
Gazetteer Code	1 (64)	A	User code to indicate type of location entry

3. Cluster Record	Indeterminate number of records		
Record Identity	2 (1)	A	QC - Bus Cluster
Transaction Type	1 (3)	A	N = New D = Delete R = Revise
Cluster Code	12 (4)	A	Short code form of cluster
Cluster Name	48 (16)	A	Full text form of cluster name for identification (Optional)
Location	12 (64)	A	Short code form of location contained within cluster

4. Operator Records One pair of records per operator

4a. Operator Record 1

Record Identity	2 (1)	A	QP - Bus Operator
Transaction Type	1 (3)	A	N = New D = Delete R = Revise
Operator	4 (4)	A	Short code form of operator identifier
Operator Short Form	24 (8)	A	Short form of operator name used for publicity
Operator Legal Name	48 (32)	A	Full form of operator name
Enquiry Phone	12 (80)	A	Phone number of travel enquiry service
Contact Phone	12 (92)	A	Phone number for other enquiries

4b. Operator Record 2

Record Identity	2 (1)	A	QQ - Bus Operator Continuation
Operator Address	78 (3)	A	Operator contact address in comma separated form

5 Interchange Records Indeterminate number of records

5a. Location Interchange

Record Identity	2 (1)	A	QG - Bus Location Interchange
Transaction Type	1 (3)	A	N = New D = Delete R = Revise
First Location	12 (4)	A	Short code form of location
Second Location	12 (16)	A	Short code form of location
Interchange time	3 (28)	I	Minimum recommended interchange time from first location to second location
First Location	12 (31)	A	Short code form of location
Second Location	12 (43)	A	Short code form of location
Interchange time	3 (55)	I	Minimum recommended interchange time from first location to second location
First Location	12 (58)	A	Short code form of location
Second Location	12 (70)	A	Short code form of location
Interchange time	3 (82)	I	Minimum recommended interchange time from first location to second location
First Location	12 (85)	A	Short code form of location
Second Location	12 (97)	A	Short code form of location
Interchange time	3 (109)	I	Minimum recommended interchange time from first location to second location

5b. Cluster Interchange

Record Identity	2 (1)	A	QJ - Bus Cluster Interchange
Transaction Type	1 (3)	A	N = New D = Delete R = Revise
Cluster	12 (4)	A	Short code form of cluster
Interchange time	3 (16)	I	Minimum recommended interchange time within cluster
Cluster	12 (19)	A	Short code form of cluster
Interchange time	3 (31)	I	Minimum recommended interchange time within cluster
Cluster	12 (34)	A	Short code form of cluster
Interchange time	3 (46)	I	Minimum recommended interchange time within cluster
Cluster	12 (49)	A	Short code form of cluster
Interchange time	3 (61)	I	Minimum recommended interchange time within cluster
Cluster	12 (64)	A	Short code form of cluster
Interchange time	3 (76)	I	Minimum recommended interchange time within cluster
Cluster	12 (79)	A	Short code form of cluster
Interchange time	3 (91)	I	Minimum recommended interchange time within cluster
Cluster	12 (94)	A	Short code form of cluster
Interchange time	3 (106)	I	Minimum recommended interchange time within cluster

5c. Cluster Walk Links

Record Identity	2 (1)	A	QW - Cluster Walk Link
Transaction Type	1 (3)	A	N = New D = Delete R = Revise
Origin Cluster	12 (4)	A	Short code form of cluster
Destination Cluster	12 (16)	A	Short code form of cluster
Interchange time	3 (28)	I	Minimum travel time from origin cluster to destination cluster
Origin Cluster	12 (31)	A	Short code form of cluster
Destination Cluster	12 (43)	A	Short code form of cluster
Interchange time	3 (55)	I	Minimum travel time from origin cluster to destination cluster
Origin Cluster	12 (58)	A	Short code form of cluster
Destination Cluster	12 (70)	A	Short code form of cluster
Interchange time	3 (82)	I	Minimum travel time from origin cluster to destination cluster
Origin Cluster	12 (85)	A	Short code form of cluster
Destination Cluster	12 (97)	A	Short code form of cluster
Interchange time	3 (109)	I	Minimum travel time from origin cluster to destination cluster

6. Vehicle Type Records

Indeterminate number of records

Record Identity	2 (1)	A	QV - Vehicle Type
Transaction Type	1 (3)	A	N = New D = Delete R = Revise
Vehicle Type	8 (4)	A	User code for vehicle type
Vehicle long type	24 (12)	A	Description of vehicle type

7. Route Description Records

Indeterminate number of records

Record identity	2 (1)	A	QD - Route Description
Transaction Type	1 (3)	A	N = New D = Delete R = Revise
Operator	4 (4)	A	Short code form of operator identifier
Route Number	4 (8)	A	Route number used as public identifier
Route Direction	1 (12)	A	User code for route direction
Route Description	68 (13)	A	Text description of route to distinguish one direction from another

8. Bank Holiday Dates

Indeterminate number of records

Record identity	2 (1)	A	QH - Bank Holiday
Transaction Type	1 (3)	A	N = New D = Delete R = Revise
Date of bank holiday	8 (4)	I	Date of bank holiday (yyyymmdd)

9. Association Records

The two types of association record allow journeys on particular routes to be associated with each other, or allow two identified journeys to be associated. The form of association can be journey splits, journey joins, journey changes route number, journey is linked to a journey in another database (cross border) or journey has a guaranteed connection with another journey.

9a. Route Association Record This type of association is applied to all journeys on the route(s) defined by a pair of operator, route and direction codes.

Record Identity	2 (1)	A	QX - Route Association
Transaction Type	1 (3)	A	N = New D = Delete R = Revise
Operator 1	4 (4)	A	Short code form of first operator
Route Number 1	4 (8)	A	First route number
Route Direction 1	1 (12)	A	Direction code of first route
Operator 2	4 (13)	A	Short code form of second operator
Route Number 2	4 (17)	A	Second route number
Route Direction 2	1 (21)	A	Direction code of second route
First date of operation	8 (22)	I	Start date of operation of association (yyyymmdd)
Last date of operation	8 (30)	I	Last date of operation of association (yyyymmdd)
Operates on Mondays	1 (38)	I	} 0 = does not associate on day
Operates on Tuesdays	1 (39)	I	} 1 = associates on day
Operates on Wednesdays	1 (40)	I	}
Operates on Thursdays	1 (41)	I	}
Operates on Fridays	1 (42)	I	}
Operates on Saturdays	1 (43)	I	}
Operates on Sundays	1 (44)	I	}
Location	12 (45)	A	Short code form of location of association
Association Type	1 (57)	A	J = Routes join – route 1 should be through route S = Routes split – route 1 should be through route B = Routes cross border G = Guaranteed connection C = Vehicles change route number

9b. Journey Association Record This type of association is applied to a pair of journeys defined by a pair of operator and journey identifier codes.

Record Identity	2 (1)	A	QY - Journey Association
Transaction Type	1 (3)	A	N = New D = Delete R = Revise
Operator 1	4 (4)	A	Short code form of first operator
Journey Identifier 1	6 (8)	A	First journey identifier
Operator 2	4 (14)	A	Short code form of second operator
Journey Identifier 2	6 (18)	A	Second journey identifier
First date of operation	8 (24)	I	Start date of operation of association (yyyymmdd)
Last date of operation	8 (32)	I	Last date of operation of association (yyyymmdd)
Operates on Mondays	1 (40)	I	} 0 = does not associate on day
Operates on Tuesdays	1 (41)	I	} 1 = associates on day
Operates on Wednesdays	1 (42)	I	}
Operates on Thursdays	1 (43)	I	}
Operates on Fridays	1 (44)	I	}
Operates on Saturdays	1 (45)	I	}
Operates on Sundays	1 (46)	I	}
Location	12 (47)	A	Short code form of location of association
Association Type	1 (59)	A	J = Journeys join – journey 1 should be through S = Journeys split – journey 1 should be through B = Journeys cross border G = Guaranteed connection C = Vehicles change route number