

ASB – Active Signal Box - CROSSOVER (July 2013)

ASB Crossover is designed to provide secure control of trains at isolated diamond crossovers. It stops train-through-train events, SPADS and blocked signals.

It does NOT provide control of points/turnouts so double track junctions will not benefit from ASB Crossover. ASB 'Turnout' is specifically designed for this feature. Details of that can be found at www.boatztrainz.co.uk/turnout.html

The latest version of ASB Crossover is now Trainz Build 2.9, (TS 2009 and up). Links to earlier versions that will work in TRS 2004, TRS 2006 and TC can be found on the ASB Crossover page on my website. Note that these earlier versions may have minor bugs and less features. All assets will work up to and including TS12 (SP1). Always use the latest version you can!

NOTE 1) Not all Trainz signals will work with ASB! Most will, but some have their own internal script which conflicts with the ASB program. See '[Signal Choice](#)'.

NOTE 2) The user must ensure that no trains are placed in-between Triggers at Session start-up. They *must* approach crossovers from afar. However this does not apply if an ASB Crossover Corrector is used. See '[ASB Corrector Trigger](#)'.

The ASB Crossover Kit comprises two main assets and 2 add-on optional assets.

The main assets are...

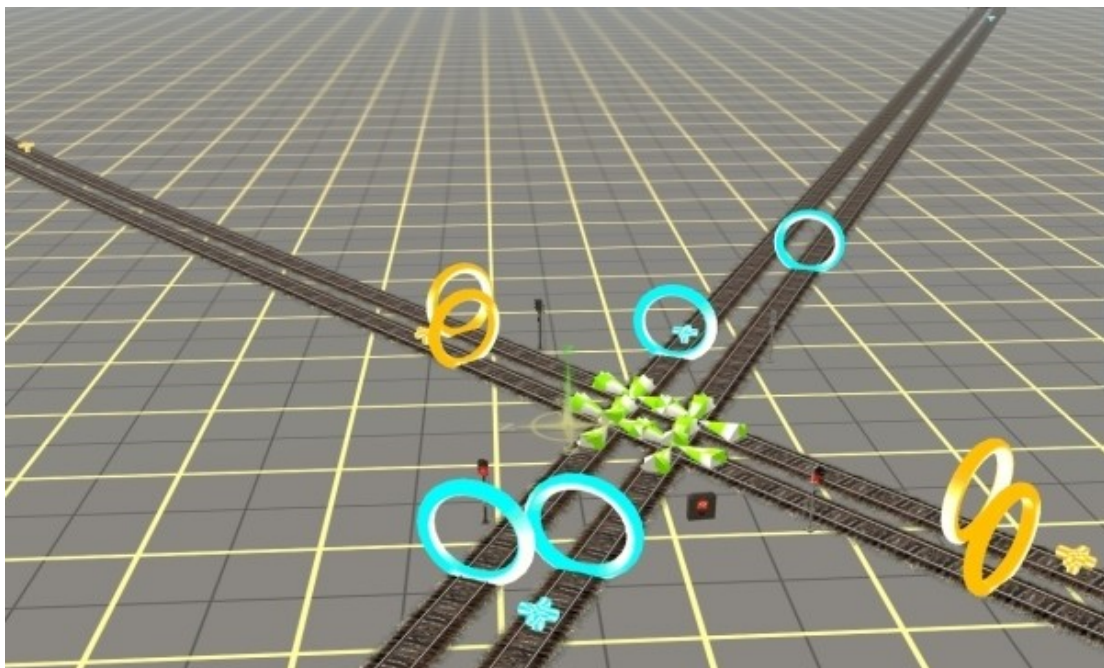
- 1) [ASB Crossover Controller](#) (kuid:76656:70001) [page 2](#)
- 2) [ASB Crossover Trigger](#) (kuid:76656:70002) [page 4](#)

The optional assets are...

- 1) [ASB Corrector Trigger](#) (kuid:76656:70003) [page 6](#)
- 2) [Clickety Clack Trigger](#) (kuid:76656:70004) [page 7](#)

(The Crossover Controller can be found in Objects/(buildings) in Surveyor, the other assets are in Tracks/trackside in Surveyor)

[Layout Plans](#) [page 8](#)
[Signal Choice](#) [page 10](#)



The ASB Crossover Controller



This is the 'brain' of the system. It controls the signals after receiving instructions from the Triggers. The Crossover Controller is the first asset you should set-up as it will automatically choose a free Channel for you.

You should use a different Channel and a new Controller for each Diamond Crossover on your map!

(For ATLS users, ASB works on a different 'band'. So it's OK to have ATLS and ASB on the same Channel. They will not interfere.)

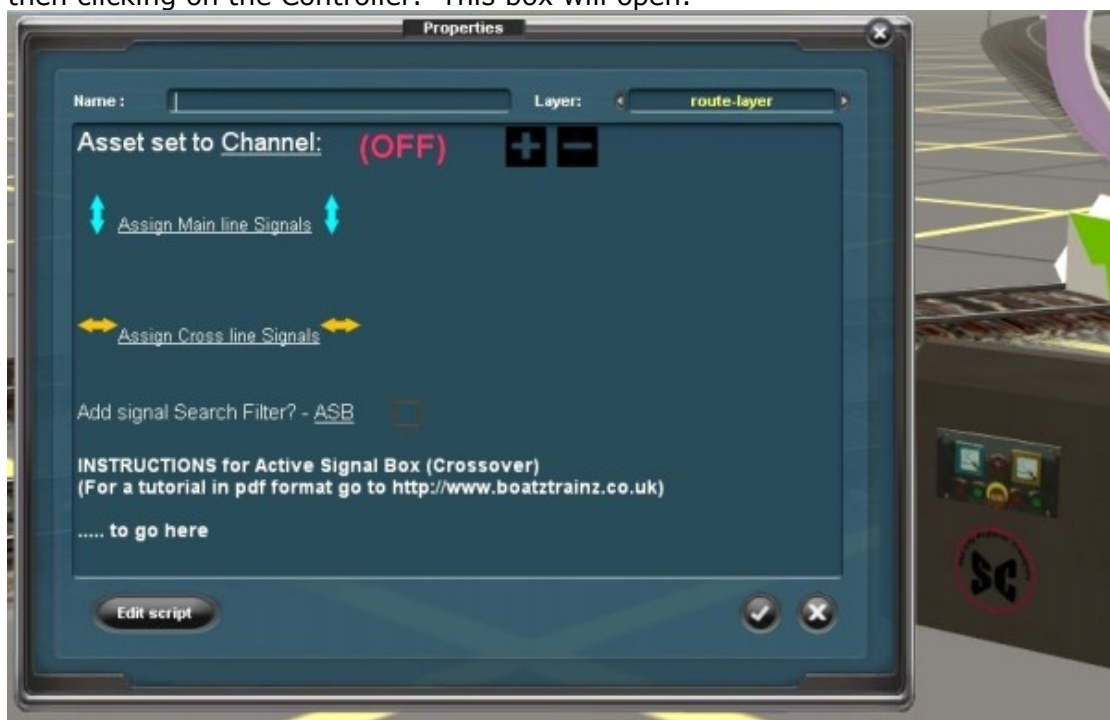
The Main & Cross Concept

We need to distinguish between the two intersecting routes, so call one the 'Main' line and the other the 'Cross' line. It doesn't matter which is which as there is no priority difference between them but you must make a choice and stick to it!

To aid clarity, all 'Main' line features are coloured **BLUE** and all 'Cross' line features are coloured **YELLOW**. See [Layout Plans](#) for more information.

Setting Up the Controller

Open the Controller's Properties Dialogue Box by clicking on the '?' in Surveyor, then clicking on the Controller. This box will open.



First you need to set a free Channel. Experienced users may click on the word Channel and type in a Channel number directly, (maximum 9,999,999 Channels).

Alternatively click on the + symbol and the Controller will automatically jump to the first free Channel. It's not possible for two Controllers to operate on the same Channel. (ATLS and ASB Channels do not interfere with each other) In this case it's the first ASB on the map so Channel 1 has been selected. Note the 'on' light is now lit on the Controller model.

Assigning Signals

Having previously placed and NAMED the signals you have chosen to protect the intersection, (see Signal Choice and Asset Layout Plans), you now need to tell the Controller which they are and 'assign' them accordingly.

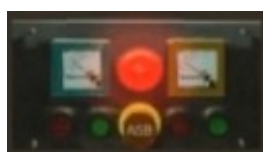


Click on 'Assign Main Line Signals' and a 'pick-list' of all the named signals on your map will appear. Choose the 'Main Line' signal (or signals) you have designated and they will be added to the list. Click 'remove' if you make a mistake. There needs to be a signal to control trains on all of the approaching lines intersecting your crossover. Multi track routes and 2 way running are possible. (See Crossover Trigger for more information.) Now do the same for the 'Cross Line' signals. That's it!

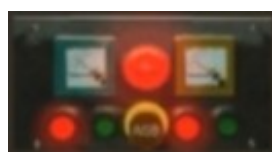
Search Filter

Once a signal has been selected by any ASB Controller, it will disappear from the Pick-List. However, if you have lots of signals on you map it still may be difficult to find the ones you want. A Search Filter has been included to limit displayed signals to those whose name starts with certain letters. Click the 'tick-box' to turn this on. By default, if ticked it will only display signals starting with 'ASB', however the filter characters may be changed to your specification by clicking on 'ASB'.

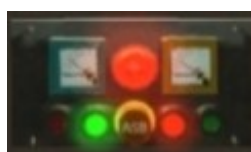
In Use Indicators



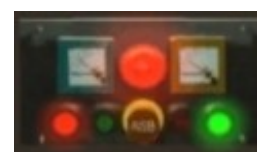
On but not yet used in Driver



Rest State.
No trains in area
All signals red



Main Line cleared to auto.
Cross Line red



Cross Line cleared to auto.
Main Line red

The ASB Crossover Trigger



This Trigger tells the ASB Controller when a train is approaching. The Controller will then clear the train to proceed but only if the Crossover is clear of other crossing trains. The Trigger is mauve in colour when placed in Surveyor but will light-up **Blue** or **Yellow** when allocated a Channel.

Setting Up the Trigger

The Trigger should be set to the same Channel as that allocated by the Controller for this crossover. The 'route' should then be set so the Trigger becomes **blue** when placed on the 'Main' Line or **yellow** when placed on the 'Cross' Line. To do this, after setting the Channel, simply click on the appropriate icon for the track.



or



Train Priority

By default, the Trigger will react to all trains. However, you may make it invisible to trains of a specified Priority. This may be useful for example, if you have a local shunting train which may hit a Trigger but will not be going through the crossover. Trainz trains are normally set to Priority '2'. You can change their priority via the train's own properties box.



Trigger Method

By default the Trigger Method will be set to '1 or 2 Way Running – Basic'. This is adequate for most track layouts, either multi track or single two-way running tracks. Two Triggers per track are required; one as a train approaches the crossover and another after it has cleared the crossover. (See [Layout Plans](#)).

Trigger set for (1 OR 2 WAY RUNNING - BASIC)

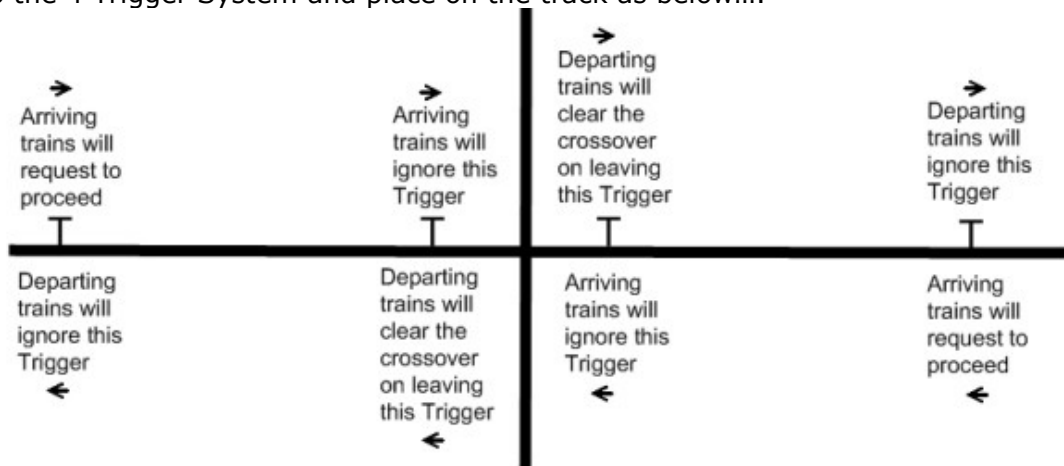
Advanced Users

However, advanced users running two-way lines, (trains in both directions on a single line), may wish to use the Four Trigger System.

Trigger set for (2 WAY RUNNING - 4 TRIGGER SYSTEM)
(Advanced users)

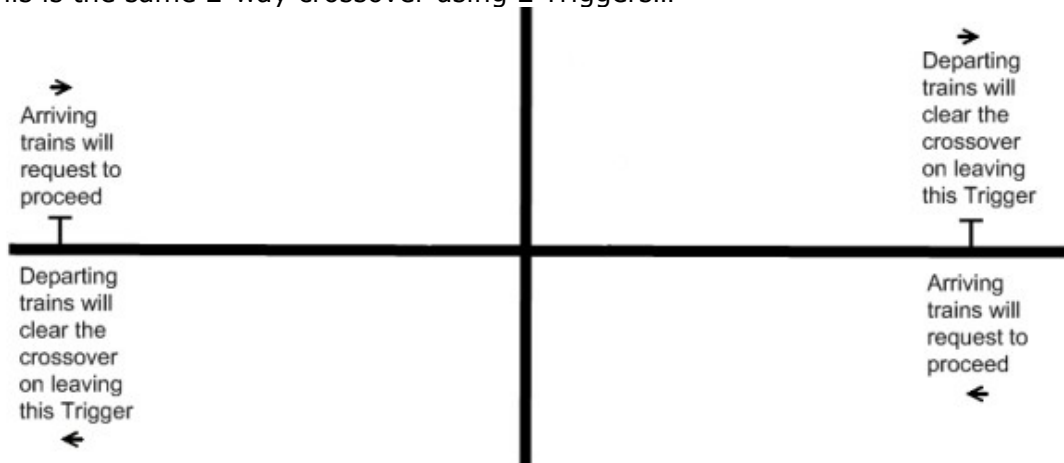
[Click to change](#)

As its name implies, this method requires 4 Triggers and is only an advantage for two-way lines. If you choose this method, set all 4 Triggers on your chosen line to the 4 Trigger System and place on the track as below....

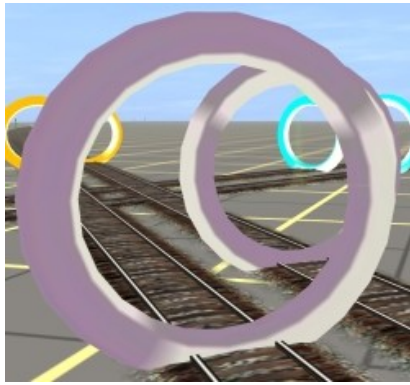


The only advantage of the 4 Trigger system is that the crossover will clear more quickly than if using the 2 Trigger system for two-way tracks. If you are not running trains in both directions on the same track or if the Triggers are very close to the crossover anyway, there is no point in using the 4 Trigger method!

This is the same 2-way crossover using 2 Triggers...



The ASB Corrector Trigger



This is an optional asset that may be used to clear-out trains that have started a Session in-between Triggers.

Without the Corrector Trigger, trains must not begin a Session in between Triggers, (even from a saved Driver session) or they will become stuck.



If you add ASB Corrector Triggers then this no longer applies.



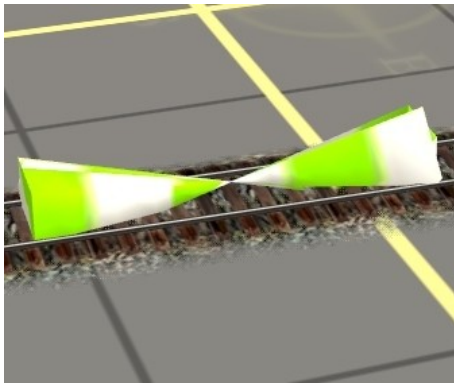
Note that the Corrector Triggers should be set up for Channel and 'Main' or 'Cross' in a similar way to a normal ASB Trigger.

Also, this is a method of 'clearing-out' trains that are in the wrong place. These stuck trains will not wait at the Crossover so train-through-train events are possible at the beginning of a Session. Corrector is not 100% effective but should clear most trains, depending on where they begin the Session!



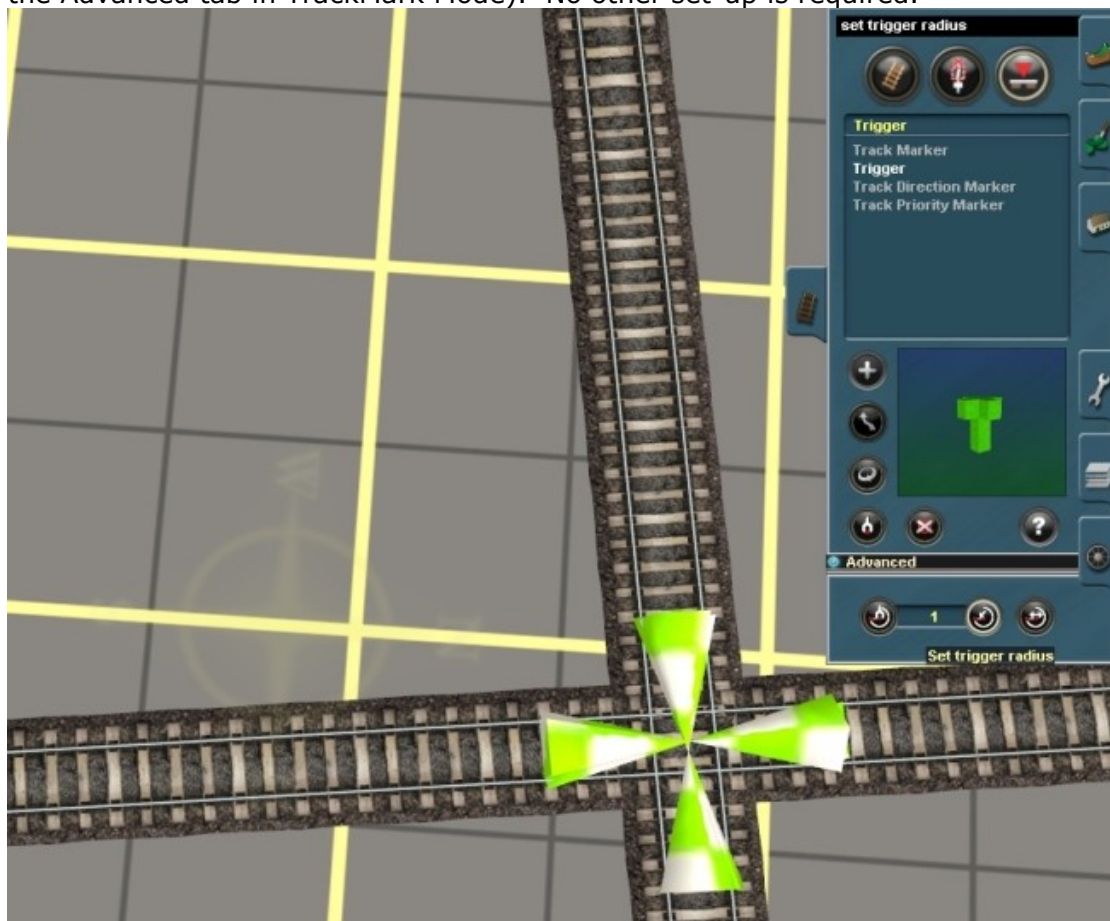
For correct placement of the Corrector for different set-ups, see [Layout Plans](#).

The Clickety Clack Trigger



This is an optional asset which provides a 'clickety clack' sound when a train passes over it. It is similar to the sound made when a train runs over points, (turnouts).

It may be used at a crossover, one asset placed on each track. It is recommended that the Trigger Radius is reduced to '1' as shown below. (Click the Advanced tab in TrackMark Mode). No other set-up is required.

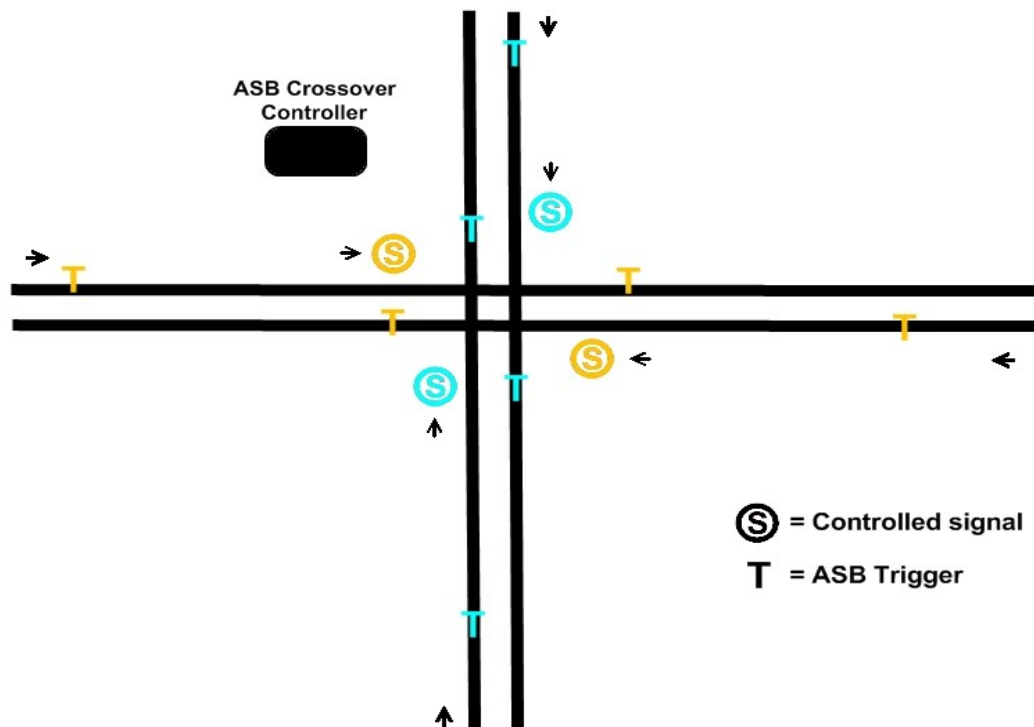


NOTE – As a normal rule, if you can hear a noise when a train passes over a set of points, (turnouts) then you *should* be able to hear the Clickety Clack Trigger. However, there are 'sound issues' in some versions of Trainz which may mean Clickety Clack will not be heard. I know of no way to remedy this. Just place the trigger, it will either work or it won't!

Layout Plans

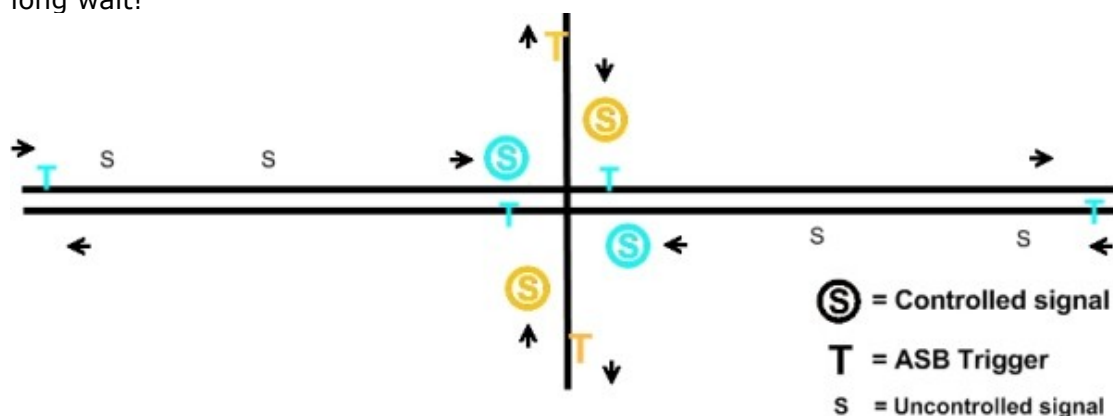
The placing of the ASB Trigger, relative to the Crossover and the signals to be controlled is fairly straightforward. However, manipulating the exact placement correctly will allow for some control of priority at the crossover.

The basic layout for a double track crossover using ASB Triggers and controlled signals could look something like this...



The first Trigger on approach will request permission to proceed. The second Trigger clears the train from the area. The Triggers here are quite close to the crossover. In fact the approach Trigger could as far ahead of the crossover as desired. As a general rule, the more trains on the line ... or the slower the trains, the closer the Trigger should be to the crossover.

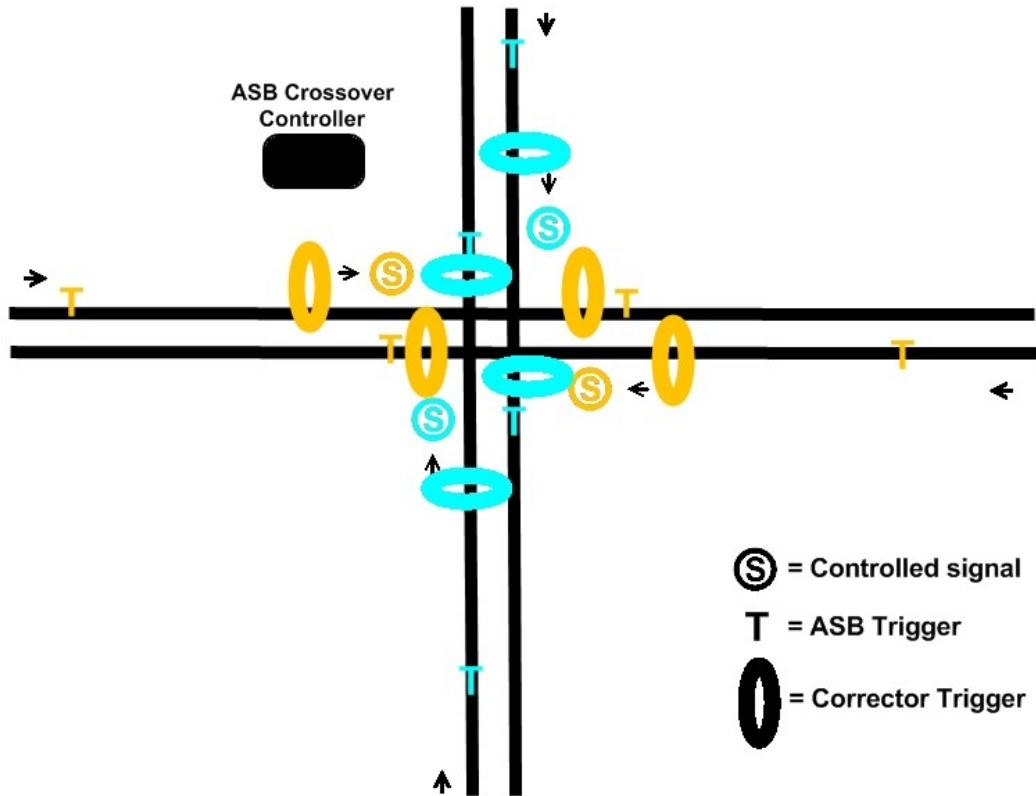
The layout below shows a double track 'Main' line' being crossed by single track 2-way 'Cross' Line. The 'Cross' line Triggers are just before the crossover but the 'Main' line Triggers are a mile away. Therefore the 'Main' line has priority. Be aware though that the 'Cross' line will not clear while *any* trains are between the Triggers on the 'Main' line.... So if it's a busy line, the 'Cross' train may have a long wait!



The above are placed for trains driving on the left. Just reverse everything for right hand drive trains.

Placing Corrector Triggers

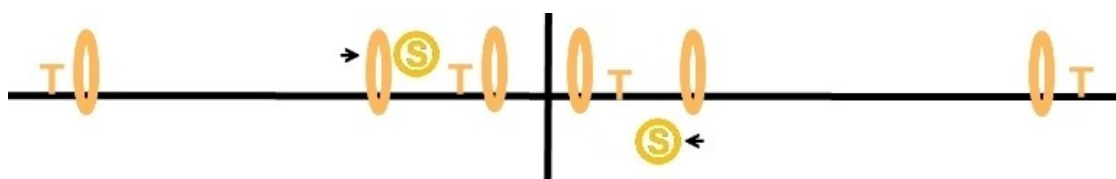
The picture below shows how the basic double track layout should look if you are planning to use the optional ASB Corrector Trigger. This Trigger should clear trains that are stuck in-between ASB Triggers at Session Start-Up. One Corrector must be placed in front of the controlled signal and another in front of the final ASB Trigger



Corrector Triggers on a 2-way line should be placed as follows... On the inside of each departing Trigger and also just in front of the controlled signals. If the Triggers are placed immediately in front of the signals then only one Corrector either side will be needed. If they are more than a train length apart then place as shown.



For advanced users using the 4 Trigger Method for 2-way lines, 6 Correctors will be needed for optimum avoidance of stuck trains. Place as follows...



Use of the Corrector is not 100% guaranteed, but it should work in most cases!

Signal Choice

ASB was originally planned to work with all Trainz signals. However it is apparent that not all signals will work with ASB.

This is because the local script in some signals interferes with the ASB script. There is really nothing that can be done to remedy this, other than change to a different signal. If your signal won't go red this may be the problem.

At the moment, most Trainz signals should be OK but exceptions, (signals that do NOT work) include some of the semaphore signals from TC3 onwards and notably, Bloodnok's excellent VSR range. There may be others!

As a replacement for Bloodnok's VSR range I have produced a small set of British Rail style signals that will work with ASB. See [Sen City Signals](#). (If you use one of these signals for ASB, do NOT enable ATLS on the same signal!)

Note that the script clash only happens with the ASB 'Controlled Signals'. Other signals placed in your map will not interfere with ASB or vice versa.

Note that the ASB Crossover Controller, Trigger and Corrector should not be confused with the ASB Turnout Controller, Trigger and Corrector which are separate payware assets.

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