

# *Skeet-Trap Claymate*



**This Manual covers the “Standard Build” Claymate.**

**For Special Build Options, see the additional sheets.**

**This Claymate is specifically designed to be fully Canterbury Voice Release Compatible and, if supporting a Canterbury installation, a modified Canterbury Power Supply from BLN will ensure a hassle free installation.**

**If your installation is for Skeet only, your 6 pin cable ended Power Supply PLUG will be fitted with a 2 core cable for connection to an external 12 volt supply. Do not attempt to add any more wires to this connector without discussion with BLN.**

**The terms DTL and Double Rise are a typically British nomenclature. The Americans refer to Trap and ATA Doubles.**

**Both English and American terms are used throughout the manual.**

## **Basic Skeet–Trap Claymate Features.**

- **Stuck Button Warning.**  
If any of the 6 user buttons are held for more than 8 seconds, the Claymate will issue a series of equally spaced beeps and silences not created under any other circumstances hence this noise should stand out from the 'normal' beeps and chirps that the shooter will be familiar with.
  
- **High Credit Capacity.**  
The Claymate copes with 10 shooters all 'crediting' 1 round with 3 bonus targets each.
  
- **Target Release Without Counter.**  
Target release will occur without a counter as long as there are 'credits' stored.  
When the credits run out, target release is disabled.  
Removing a counter during the crediting process will allocate only the number of targets that Claymate could count before the counter was removed.  
Additional 'bonus' targets will be added internally when a complete round of 25 is credited successfully.
  
- **Separate Audit Counters.**  
Claymate monitors the targets drawn from each trap and records them in three audit counters.  
The audit is begun in the normal way with the addition of a "separator chirp" to indicate the second counter is to be read, followed by a readout in the normal way.  
The 'readout' outputs High House: Low House: Trap.
  
- **Co-Site Skeet and Trap Fields.**  
This new design eliminates the need for a separate Switch box or an 'Intelligent' Overlay Controller and the associated wiring issues.
  
- **Fully Isolated Skeet & Trap disciplines.**  
Skeet operation has no effect on the Acoustically controller Trap disciplines.

## Installation.

### Caution

Do not connect any release wiring directly to a vehicle battery as this WILL damage the unit, and WILL invalidate the warranty.

When first connecting traps to the System, the launcher may throw a clay.

Certain cabling may differ from that described here dependant on your Build Option.

## Connecting a Power Supply...

Claymate requires an external 12 volt supply.

If you have specified the Claymate for use with an Acoustic Release, you will have been supplied with a 25 metre length of grey cable with 6 pin plug at each end to provide power to the Claymate from the Acoustic power supply (Typically a modified Canterbury Voice Release Power Supply) or from a small grey 'Break Out Box'

### ...Derived from the Acoustic Power Supply.



The picture shows a modified Canterbury Power supply. The black cable at the top of the picture is the 240 volt mains input.

The Grey cable at the bottom of the picture is the trap release cable.

The box on the left shows the 6 pin connection to the Claymate. A 25 metre length of cable is typically provided allowing the Claymate to be sited either behind the Shooters or on one of the Skeet Houses whilst the power supply remains in a covered (dry) trap house, typically the centre Trap.

### ...Derived from the 'break-out-box'.



The WHITE cable should be connected to a 12 volt supply with +12 volts on the Brown Wire and Zero volts on the Blue.

The BLACK cable takes the release command from the Acoustic system. This command is typically a relay contact closure.

The GREY cable should be connected to the trap release wiring using the Black cores. The Green Yellow core is not connected and can be cut back.

## ...Using an external 12 volt supply.

For Skeet only operation, an external 12 volt supply should be connected using the 6 pin DC connector provided similar in appearance to the Bypass Connector shown below.

The WHITE cable carries 2 cores coloured Brown which should be connected to the positive 12 volt supply; and a Blue wire which is the negative or ground return.

Claymate is reverse polarity protected. Please do not exceed 12 volts AC or 24 volts DC.

## The Bypass Plug.

The Bypass plug is used to bypass the Claymate.

It is also a useful tool during installation.

With the bypass connector fitted to the Canterbury Power Supply, the trap can be fired either from the Acoustic Controller or by shorting out the control pins in the silver 3 pin connector if a fault in the Acoustic System is suspected.

With a Break-out-box, shorting the wires in the BLACK cable will fire the trap on the Grey cable.

The white ribbon is used as a high visibility marker.



## Connecting the Traps.

The Skeet-Trap Claymate can be connected simultaneously to three traps.

The Centre trap (for DTL, Double Rise, Trap and ATA Doubles disciplines) is typically connected using the remote Break-out-box or the Canterbury Acoustic release Power Supply.

If that is all that is required, the connections below for the Skeet Traps may be ignored.

It may be that your Built Option does not even have these cables fitted.

## For Trap / Double Trap (DTL / Double Rise).

If using the modified Canterbury Power supply, all that is required is to connect the Grey release cable to the Trap. The bypass connector can be used to test the cabling before the Claymate is connected, at which time Claymate will play the 'BLN' Start-up tune.

Calling for a target will either fire a trap if a valid counter is connected, or cause Claymate to 'chirp' if not.

If two targets are thrown by the Trap, refer to page 7 for instructions on changing the target count.

## For Skeet.

### Skeet with two cables, Grey and Black...

This GREY cable relates to the 'A' trap or 'Hi House' trap.

The BLACK cores should be connected directly to the trap release wiring. Polarity is immaterial.

The GREEN core is not used and should be ignored.

The BLACK cable from the controller has two cores coloured BLUE and BROWN.

This cable should be connected to the 'B' or Low House trap release wiring. Polarity is immaterial.

Unless otherwise requested, Claymate contains 3 relays to fire the traps allowing for extra low voltage (Laporte) and high voltage (110 volt Winchester) Traps to be connected.

## **Skeet with one Grey Cable...**

**This option is convenient if a single 3 pin connection to the Skeet System is required.**

**The GREY cable has three cores, two are BLACK and one is GREEN & YELLOW.**

**The green and yellow cable is the release common and should be connected accordingly.**

**The Black cores are numbered '1' & '2' (you may have to strip 4 inches (100mm) of grey outer to see a cable marker)**

**The wire marked '1' relates to the High House Trap and wire marked '2' relates to the Low House Trap.**

### **NOTE...**

**Some manufacturers provide a Skeet handset that can cause a problem to Claymate if the handset is left connected with Claymate also controlling the traps.**

**The specific problem is highlighted if a single target is demanded from Claymate yet a pair of targets is thrown. This effect is caused by the manufacturers handset wiring and is NOT a fault.**

**Simply disconnect the original handset and allow Claymate sole control over the traps.**

## **System Configuration.**

### **Use Configuration to tell the System...**

- How many 'bonus' birds to allow per round of 25 ( None to 3 )
- To use ISU or English rules Skeet.
- Adjust SKEET throwers cycle timers if the default 2.5 seconds is insufficient.
- Set One or Two target counts for Trap or Double Rise.
- To report the internal audit values.
- To reset the processor, restore default trap cycle timers and to clear any cached targets.

### **To enter Configuration mode.**

The configuration key is inserted into the keyhole underneath the unit.

Turn the key clockwise, gently, very little effort is required. When the key turns, the unit will signal configuration mode with a chirpy warble, and the key will lock into the keyhole.

Once the key is turned and the System has warbled to indicate configuration mode, there will be a short period of silence followed by an audible representation of the number of clays currently allowed for No Birds. These are the 'bonus' targets.

A short 'chirp' indicates that no additional clays have been added.

The beeps indicate the number of clays added for no birds, up to a maximum of 3 (three).

Once in Configuration Mode, leave the key in to perform the following house keeping functions.

#### **How to...**

### **Change the bonus Clay setting.**

A Counter is not required to change this setting.

Pressing and releasing the **DELAYED** button will add one target to the 'bonus' count and the System will respond by sounding the requisite number of beeps. Allow the Claymate time to report the right number of beeps.

**NOTE** that a maximum of 3 clays is currently allowed.

The Claymate will cycle through 1,2,3,0,1,2,3 as the button is pressed and released.

Leave Configuration by removing the configuration key.

#### **How to...**

### **Reset the Claymate.**

Pressing and releasing **INSTANT** whilst in Configuration mode will **RESET** the processor.

This is useful if the System suffers a stroke and thinks it's a toaster.

At this time, the System reverts back to factory cycle timer settings and a cleared clay cache.

Once Claymate has reset and played the start-up tune, if the key is still in place, Claymate will re-enter Configuration and report the bonus targets as explained earlier.

## **How to...**

# **Toggle between English and 'ISU' Skeet release delays.**

Pressing and releasing the **CREDIT** button cycles between English Skeet (1 beep) & 'ISU' (2 beeps).

## **How to...**

# **Change the cycle times of a trap.**

It will help to have sight of the trap or knowledge that the trap has reset and can throw again.

- **Press the button of the trap you wish to adjust.**  
The trap selected will launch.  
The System will now mark time up to the point at which you...
- **Press the trap button again.**  
The System will use the time between the two launches to wait for the trap to cycle.  
A third clay will be launched to confirm that the trap has indeed managed to cycle in the time recorded.

Repeat the above process if you wish to change your original timing, or if you wish to adjust the cycle time of the other trap.

Note these settings are **NOT** stored over a power down.

## **How to...**

# **Select 1 or 2 counts for Trap / Double Rise.**

With an active acoustic System, calling for a target whilst in Configuration Mode will cycle between 1 and 2 targets.

It is important to realise that during Configuration Mode, an active Acoustic System could change the target count inadvertently.

## **How to...**

# **Read the Internal Audit Counter.**

Pressing the **PAIR** button on the **HANDSET** will read the clay count from the internal memory. The count capacity is a maximum of, 9,999,999 clays. In other words, 1 short of 10 Million per trap.

The method used to express the clay count is quite unique and very easy to use.

You will need a pen and paper to write down the numbers down as they appear, like this...

You need a counter. The **ONLY** condition is that the very **LAST** digit **MUST READ '0', ZERO.**

For the purposes of this explanation, a small clay count of **123** will be described.

As you gain experience, you will be able to read the audit by counting the beeps without a counter.

- **Plug in the Counter, noting the LAST digit is ZERO.**
- **Press PAIRS on the handset.**
- **The counter will increment, beeping as it goes, and STOP with '1' displayed in the LAST DIGIT.**
- **The display will remain static for 2 seconds... Write the number down.**
- **The counter will increment silently to zero and then increment and beep to display '2'.**
- **The display will remain static for 2 seconds... Write the number down.**
- **The counter will increment silently to zero and then increment and beep to display '3'.**
- **The display will remain static for 2 seconds... Write the number down.**
- **The counter will then increment silently to zero**

The Claymate has just reported the **HIGH** house audit.

Following a brief pause and a chirp to mark the separation between audits, the LOW house audit will follow.

The Low house audit may be different to the High house audit. This is not uncommon.

Following a brief pause and a chirp to mark the separation between audits, the DTL or Trap audit will follow.

The process is designed to reset the LAST DIGIT to zero on the counter.

You can either read the clay count again, or move to another Claymate to repeat the process.

In the above example you would have written down 1,2,3 which is 123 targets launched.

Note that a zero digit is output as TEN beeps so 1,230 targets would be expressed as 1 beep, 2 beeps, 3 beeps and 10 beeps.

Once you have read the audit a few times, it will become more familiar.

It is now possible to do an audit of the entire ground in slightly more than the time taken to visit each stand. This is a significant advance over earlier (pre 1300 serial numbered) Claymate models.

The system should be allowed to restore the last digit to ZERO. If you remove the counter before the process is completely finished, the last digit on the display may not be zero.

The Counter box will appear to clock up large clay counts as it is always incremented in order to allow the LAST DIGIT to display the number you need to write down.

The number the Counter eventually displays is MEANINGLESS, as the number displayed will not represent targets actually launched.

The last digit is all that is important in this instance and this method is the only way to present a large audit value as the display is only 4 digits long and could never read directly millions of clays. BE AWARE that you might hit the counter Lockout Value during an audit. The Counter may stop incrementing but the audit process will continue 'audio only'. A counter is not actually required.

The internal Audit Counter CANNOT BE RESET other than to launch more than 9,999,999 clays. During Final Inspection and Testing, Claymate is pre-loaded with 9,999,992 clays using test software and test launches are performed to roll the count over to zero and provide a small factory count of 2 or more.

**When you have finished reading the Audit Counter, simply remove the Configuration Key.**

If you remove the key during an audit read process, the process will continue to a satisfactory conclusion.

You should not remove the counter during an audit if you rely on the counter display, otherwise the last digit might not be reset to zero and future audits could be harder than they need to be.

The internal audit counter only records targets LAUNCHED... Not those 'credited'.

## **How to... Leave Configuration Mode.**

When configuration is complete, the key is removed. The System will respond with a chirp.

NOTE that settings for the cycle timers for the traps are NOT stored when the unit is powered down.

# OPERATION.

The Skeet-Trap Claymate can be operated in two ways.

- 1) On a per clay basis.
- 2) On a credit basis.

## Per Clay Operation.

A counter is plugged into the system and clays are counted as they are launched. This is most suitable for the Solo Shooter who may not want to pay for multiples of 25 targets and is also recommended for competitions when it is not necessary to have the participants carry a Counter Box.

## Credit Basis.

This is used when a number of shooters, who would comprise a squad, wish to shoot a round of Skeet and also want 'their clays' added to 'their box' with no messing around between shots.

The group of shooters should present their counter boxes in turn to the Claymate and press the CREDIT Button to add 25 clays to their Counters. 25 clays will also be added to the internal 'cache' PLUS a number of clays allowed by the ground owner for No Birds etc (Bonus birds).

The System detects if the Counter is removed and will simply stop crediting clays and result in only those clays counted being credited to the cache.

Pulling the counter this way will not defraud the ground of clays or cheat the shooters.

- 'Bonus clays' are added when a count of 25 has been completed.

When all members of the squad have credited the Claymate, the shooting can begin.

The MODE of shooting, INSTANT or DELAYED can be changed at any time.

- A counter is NOT required for target release if there are targets in the cache.
- If Claymate does not see any user activity by way of button presses for more than 10 minutes, the internal clay cache will be cleared, indicated by a few seconds of chirps and warbles to indicate the fact.
- If a counter is left plugged in or simply plugged in and removed, the 10 minute timer is reset.
- Likewise the 10 minute timer is reset if any button is pressed.
- During the shoot, the 'Cache' will be decremented for each target launched.
- A connected Counter Box will NOT be incremented whilst clays remain in credit.
- When all the clays in credit have been launched, additional clay launches will be allowed only if there is a Counter to record the launches.
- In the case that one cached target remains and a pair of targets is called for, (without a counter connected), Claymate will not launch.

The credit feature also allows the ground owner to give a round 'free' to a shooter or group by simply using another counter to clock up the 'free' round. The free round does not show up on the group counter but is stored in the Claymate cache.

This is useful if the shooters are expected to 'vanish' with a counter or without paying.

## **Skeet and Trap Operation.**

**Skeet is controlled using the 3 button Claymate Handset provided.**

**Trap or DTL is controlled from the Voice Release System.**

**Users simply use the Handset or the Voice Release Systems as required.**

**An acoustic target followed by a manually launched 'on report' target can be thrown if desired.**

**There is no specific discipline that requires this but it is a fun diversion.**

**The INSTANT and DELAYED buttons on the Controller only refer to SKEET operation. They have no effect on the Trap operation.**

**Likewise, English or 'ISU' release delays have no effect on the Trap discipline.**

## **Stuck Button Detection.**

**If any button is held inadvertently or deliberately in normal operation, the Claymate will respond, after 8 seconds, with equally spaced beeps and silences to indicate that a button is stuck.**

**Control buttons on the main enclosure are rarely damage by water or other effects.**

**If the problem persists and visually no buttons are pressed, removal of the handset at the base of the Claymate will isolate a problem to the handset.**

**Flagging a stuck button in this way does not affect any internal operation or event.**

**If a damaged handset is to be replaced bear in mind the 10 minute inactivity timer that runs in the background. If the swap of the handset is likely to exceed 10 minutes and there are shooters waiting to shoot their 'cached' targets, either plug in a counter to defeat the timer or arrange that one of the other buttons on the main enclosure is pressed occasionally to reset the timer to 10 minutes.**

## **Audit Features.**

**The Skeet Claymate separately audits High House, Low house and Trap targets.**

**Whenever a trap is released, the Audit Counter for that trap is incremented.**

**The audit value is stored in non volatile memory with a retention life of 100 years.**

**The counter has a capacity of 9,999,999 targets per trap before the counter rolls over to Zero.**

**The audit count can ONLY be reset by returning the unit to the factory.**

**Used properly, it becomes possible to detect clay 'shrinkage' wherever and however it occurs.**

**Assuming that the traps are filled to the same degree at audit time, should the sales office log of clays sold not tally reasonably closely with the total audit counter figures then it is possible that clays are being launched but not paid for. Further, the total of audit figures and actual stock of clays should agree with initial clay stock. Any discrepancy would be because targets are not reaching the traps!**

## **Claymate Security Features.**

**Claymate Trap Release Systems will not release clays unless a correctly coded Counter Box is connected to the unit either to count targets as they are launched or to credit targets to the cache.**

**The Counter Box that accompanies the shooter or group around the ground is coded to match the code in all the release controllers on the ground.**

**The initial coding of these units is done by BLN, with a code that will be different to any other ground code.**

**The code is set using two switch banks. One is an eight way switch the other is a four way. An identical set of switches will be found in the hand counter boxes, and the RESET BOX.**

**Because of the losses that could be realised if a craftily retained box goes undetected, BLN has designed Microcontroller driven counters that are designed to 'lock out' at a certain count value. These counters have a flashing right most digit and no leading zeros in the count display.**

**How you manage these security features is of course your own affair.**

## **The Counter Reset Box.**

**Purchased additionally with your Claymate Trap Release System will be a Counter Reset Box.**

**It is important that you take care of this unit.**

**The Reset Box is fitted with 2 buttons on the front face.**

**One button will INCREMENT the counter whatever the security code.**

**The other button will Reset the Counter Box ONLY if the internal security code of the Reset Box matches the code in the Counter to be reset.**

## **GUARANTEE & POLICY STATEMENT**

**BLN Technical Services guarantees the Claymate product described to be free of manufacturing defects for the purpose of clay trap launcher control for a period of one year from date of purchase.**

**This guarantee specifically does not cover wear and tear to cables or enclosures, faults caused by wear and tear, misuse, abuse or application of excessive or inappropriate voltages, including lightning strikes.**

**The owner shall at all times be responsible for the care of the product and shall take steps to ensure that the product is protected from the damaging effects of wind, rain or snow.**

**BLN Technical Services reserve the right to change or amend the specification or software without notice. Software changes as requested by customers become the copyright of BLN Technical Services and such changes may be included in future software releases, or may be offered to existing customers as an option or an upgrade.**

**The software supplied at any time has been thoroughly tested and is believed to be free from bugs or anomalies.**

**Software upgrades may or not be chargeable at the discretion of BLN.**

**BLN Technical Services or agents of BLN will not be responsible for accidents or injury or loss caused by operation of traps or associated equipment under the control of any Claymate System whether the operation of such equipment is desirable or not, is caused by operation of any equipment when it is unsafe to do so, or under any fault condition of any equipment howsoever caused.**

## **Repair policy, and care of the Equipment**

The ground can usually correct units that become suspect or fail in the field after some help on the 'phone. Do not return units to BLN or agents of BLN without a covering letter.

In most cases, it is possible to replace whichever element has failed without returning the entire System.

If a handset is suspected, verify by substitution. A Spare handset is a wise investment.

Counter Boxes can be checked on the Reset Box.

The battery inside the Counter will last for around 2 years.

The Reset Box contains a battery which will last a time in excess of 4 years.

The most current is consumed during a 'reset. If the Reset Box is suspect, verify on more than one counter.

Contained inside the Unit is the Printed Circuit Board.

All connections to the PCB are by multi pin connectors.

Should it be necessary to remove the Circuit Board proceed with care.

Do not turn a warranty replacement into a chargeable repair!

Use a small hook to ease the board away from the mountings whilst simultaneously releasing the board lock.

**DO NOT PULL ON THE COMPONENTS.**

Should a Board be suspected, BLN can usually supply a loan board to verify that a problem exists, reducing down time.

In all cases, BLN reserve the right to repair or replace at the discretion of BLN.

Replacement parts may be new or 'reworked' at the discretion of BLN.

The design of mechanical or electronic components may change without notice.

All Claymate products have been tested and certified to exceed European EMC regulations and specifications including conducted and radiated emissions and susceptibility to external electromagnetic fields.

The software and board designs are the copyright of BLN Technical Services.

BLN Technical Services reserve the right to change a design or specification without notice at any time.

Compatibility between Claymate Systems is guaranteed unless specifically stated at time of purchase.

"Claymate" is a registered trade mark of BLN Technical Services.

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