

ARMOURY TRAY

FIELD OF THE INVENTION

- 5 The present invention relates to an armoury tray particularly though not solely to a tray for housing and transporting weapons and the like stored in an armoury, and a method of dispensing weapons.

BACKGROUND

10

Most organisations that dispense weapons to their members, store the weapons in an armoury. The armourer has the job of allocating sets of weapons to individuals and recording both their withdrawal from and return to the armoury. In case of a police armoury, this can often involve hundreds of such sets being
15 transferred over a short space of time, as a shift change occurs.

Typically each weapon has a serial number or some other form of identification which is logged against the individual officer in an inventory database, when the weapon is withdrawn and returned. This will usually require either manual entry
20 of the serial number, or automated means such as an RFID scanner to record the whereabouts of each individual weapon.

SUMMARY OF THE INVENTION

- 25 In general terms the invention proposes that an armoury tray has rigid construction that does not flex when fully loaded and the tray is substantially balanced across its longitudinal axis. This may have the advantage that transfer of the set of weapons in the armoury is more efficient, safe and/or convenient. For example as the trays are carried around by the armourer and the officer, a
30 balanced tray may minimise the chance of the tray being tipped and thereby damaging the weapons. Due to the contrast of the receptacles and the weapons, it may also be immediately obvious whether any weapons are

missing or incorrectly accounted for when withdrawing or returning the weapons. This may minimise the chance of an officer going into the field underequipped and/or maximise the chance any lost weapons are immediately identified.

5

In a first particular expression of the invention there is provided an armoury tray as claimed in claim 1.

In a second particular expression of the invention there is provided a method of
10 dispensing weapons as claimed in claim 14.

BRIEF DESCRIPTION OF THE DRAWINGS

One or more exemplary embodiments of the invention will now be described,
15 with reference to the following figures, in which:

Figure 1 is a plan view of an empty armoury tray according to an exemplary embodiment;

Figure 2 is a cross section view of a portion of the tray in Figure 1 in use;

Figure 3 is a plan view of an empty armoury tray according to a further
20 exemplary embodiment; and

Figure 4 is a flow diagram of a method of dispensing weapons according to an exemplary embodiment.

DETAILED DESCRIPTION

25

Referring to Figures 1 to 3 an armoury tray 100 is shown according to exemplary embodiments. The main tray surface 102 is a flat rectangle and has an outer rim 104. A number of receptacles 106 are provided in the main tray surface 102 to house various weapons and the like.

30

The receptacles 106 include a revolver/pistol receptacle 108, a baton receptacle 110, a non lethal/electro-shock weapon receptacle 112, a handcuff receptacle

114, a bullet holder receptacle 116 and an air cartridge receptacle 118. The receptacles are all of a depth to allow easy removal of the items, whilst securely restraining the items during normal transporting of the tray 100. For example the centre of gravity 128 for the item 130 in each receptacle may be below the main tray surface 102 when the tray 100 is held in its normal horizontal orientation, such as 10mm below the main tray surface 102. The tolerance 132 for each receptacle is a snug fit, such that each item cannot move significantly during transport, but permitting easy insertion and removal. For example the minimum tolerance may be 6.5mm.

10

The outer rim 104 provides rigidity to the upper surface, so that there is no significant flexing or bending when the full tray 100 is lifted. For example, when the tray is full, the total weight may be 2.5 kg. On the sides 120, the outer rim 104 also provides a pseudo hand hold for the user to grip the tray 100 while transporting. For example the surface of the outer rim 104 may include a ribbed portion for increased grip and a rounded base for more comfort.

15

To minimise the chance of the tray 100 being accidentally tipped while transporting, the receptacles 106 may be arranged to give an approximately balanced weight distribution when fully loaded. For example, since the tray 100 is normally carried on the sides 120, the weight of the items may be approximately balanced about the longitudinal axis 122. For convenience the weight of the items may be approximately balanced about the transverse axis 124. In the exemplary embodiment, the heavier items such as the non lethal/electro-shock weapon receptacle 112 and the revolver receptacle 108 are near the sides 120 with the lighter items in the middle. For example the balancing moment (that must be provided to hold the tray horizontal) about the longitudinal axis 122 may be less than 0.2Nm and may be less than 0.5Nm about the transverse axis 124. Having the heavier items nearer the outer rim 104 may also reduce the bending moment on the main tray surface 102.

20

25

30

In order to allow the inventory database to be updated with the location of each weapon, whenever the tray contents are withdrawn and returned, each weapon has its serial number attributed to the officer's possession for a given shift. Alternatively a barcode 126, individually identifying each tray may be scanned.

- 5 In the database, each tray barcode may associated the specific weapon serial numbers assigned to that tray. In that case the officer may then temporarily store the tray in his locker during his shift.

10 The tray 100 may be blow moulded from plastic such as hard PVC. It may be transparent and of a colour to make it easy to distinguish the items present in the tray, such as transparent green. The thickness of the main tray surface 102 and relative height of the outer rim 104 may depend on the total weight of the items. For example outer rim 104 would normally be less than 10% of the length of the main tray surface 102 and the thickness would normally be 1mm.

15

Referring to Figure 4 a method of dispensing weapons is shown according to an exemplary embodiment. At 402 the fully loaded tray is stored within the armoury or gun safe. At 404 the tray 100 is withdraw by an officer and the database is updated using the serial numbers of each weapon and the barcode on the officer's ID. As the tray is stored fully loaded, a full tray may be passed to each officer rather than issuing each weapon separately. At 406 the tray is returned with all the items back in the tray 100, a screen displays to the officer what items are being recorded as returned as against which officer (to minimise errors as to officer identity) and the inventory database is updated to reflect the weapons are all securely back in the armoury.

20

25

Many variations of the above exemplary embodiments are possible within the scope of the following claims, as will be clear to a skilled reader.

CLAIMS

1. An armoury tray comprising:
a rigid main surface,
5 a plurality of receptacles in the surface, each receptacle configured to receive separate items including a set of weapons, the receptacles being juxtaposed to provide a substantially even weight distribution across a longitudinal axis of the rigid main surface when the receptacles are fully loaded, and
10 a rigid outer rim surrounding the rigid main surface configured to prevent substantial flexing and/or distortion of the rigid main surface when the receptacles are fully loaded.
2. The armoury tray as claimed in claim 1 wherein one or more receptacles
15 for heavier items are located adjacent the outer rim.
3. The armoury tray as claimed in claim 1 or 2 wherein each receptacle is configured to have an opening above the centre of gravity of the item retained therein when the tray is held horizontally.
20
4. The armoury tray as claimed in any one of the preceding claims wherein each receptacle is configured to have an opening to allow the item retained therein to be closely contained without impeding withdrawal or deposit.
- 25 5. The armoury tray as claimed in any one of the preceding claims wherein the thickness of the outer rim is configured to prevent flexing and/or distortion of the rigid main surface with items of up to approximately 2.5kg in weight.
6. The armoury tray as claimed in any one of the preceding claims wherein
30 a portion of the outer rim is configured to function as a hand hold.

7. The armoury tray as claimed in any one of the preceding claims wherein the weight distribution is substantially even across the transverse longitudinal axis of the rigid main surface when the receptacles are fully loaded.

5 8. The armoury tray as claimed in any one of the preceding claims further comprising an identification on the tray to associate the set of weapons with the tray in a database.

9. The armoury tray as claimed in any one of the preceding claims wherein
10 the items include a firearm and ammunition.

10. The armoury tray as claimed in any one of the preceding claims wherein the items include a revolver, non lethal/electro-shock weapon, ammunition, air cartridge and baton

15

11. The armoury tray as claimed in any one of the preceding claims wherein the tray is semi transparent.

12. The armoury tray as claimed in any one of the preceding claims wherein
20 the tray is moulded plastic.

13. The armoury tray as claimed in any one of the preceding claims wherein the tray is a contrasting colour to the weapons.

ABSTRACT

ARMOURY TRAY

- 5 An armoury tray comprising: a rigid main surface, a plurality of receptacles in the surface, each receptacle configured to receive separate items including a set of weapons, the receptacles being juxtaposed to provide a substantially even weight distribution across a longitudinal axis of the rigid main surface when the receptacles are fully loaded, and a rigid outer rim surrounding the rigid
- 10 main surface configured to prevent substantial flexing and/or distortion of the rigid main surface when the receptacles are fully loaded. Also a method of dispensing weapons.

Figure 1