TAIPA FORT AND A NINETEENTH CENTURY CANNON

RICHARD J. GARRETT

Taipa Fort

Throughout Macau’s long history, many forts and batteries were built to protect it from aggressors. The fort on Taipa, an island forming part of Macau, is one of the territory’s lesser fortifications although, unlike most of the others, it survives largely intact.

Taipa Fort was built in 1847 after the island’s population petitioned the governor, Ferreria do Amaral, to station military forces there to provide better protection from pirates. The islanders’ main livelihood was fishing and a large fleet anchored there. The governor agreed to the proposal and Pedro Jose da Silva Lourerio was put in charge of constructing a fort. The islanders themselves funded the cost of the building.

The fort was built to guard the straight between the islands of Taipa and D. João and to protect the fishing fleet that used the inlet between two islands which formed Taipa. (These two islands and another very small one are now joined by reclamation.) Located on the western shore, the fort is built on the side of a slope, and before reclamation, the front walls were washed by the sea. Figure 1 shows a plan of the fort dating from the early twentieth century.

The main building of the fort is a single storey brick built structure, with the arms of Portugal and the date, 1847, on the side. (Figure 2) Sometime before 1900 the fort was adapted to provide a summer residence for the Governors of Macau. A veranda, supported on six columns that sit directly on the front wall of the fort, was added some time after the governor had adopted the fort as a residence. (Figure 3) This extension shows that by then the fort had no military pretensions.

The plan in Figure 1 shows the other internal buildings and indicates the location of the principal cannon. Apart from some small conventional buildings around the fort, there is a small circular building.
the gunpowder store, on one of the uppermost platforms. (Figure 4) Today it is kept locked, but is no doubt empty. Photographs from about 1900 show there was another building alongside the fort. This has been demolished to make room for the road that now skirts this side of Taipa.

Reclamation was instigated to provide for a pier which is now situated besides the Fort. Today the land in front has been filled in and a pleasant garden occupies the area. (Figure 5) On the slope at the side of the fort is a memorial to the victims of an explosion on the frigate D. Maria II in 1850. This is inscribed A MEMORIA DAS VICTIMAS EXPLOSÃO DA FRAGATA D. MARIA II EM 1850. ERECTO EM 1880. It is a sad reminder of the dangers to which seafarers were exposed in those days.

Security of Taipa Island was eventually taken over by the police and the fort was used as a police station until 2000. It is now a base for the Scout Association of Macau. Its continued official use has meant that there has been no pressure to change the facilities and there are no signs of any major modifications to them.

A Nineteenth Century Cannon

Although there are a number of old cannon within the fort, most have been placed there in recent times. However, an original one, dating almost from the time of the fort’s construction, is at the front corner nearest to the pier.

This gun is an interesting example from the middle of the nineteenth century, a period of great change in the design of cannon. Similar guns quickly became obsolete and were replaced, so it is very unusual to find such a piece still in place, complete with the original mounting. Figures 5 and 6 show the cannon, still pointing out across the straight between Taipa and the island belonging to mainland China.

The cannon is marked ‘C.A. & Co. Boston,’ and dated 1855. The maker was Cyrus Alger and Company, a firm founded in the U.S.A. in 1809. Their foundry was on Dorchester Avenue, Boston and they supplied the United States with cannon balls in the war of 1812 and later in the Civil War. They made both cast bronze and cast iron cannon, the basic alternatives for cannon up till the middle of the nineteenth
cannon. Both were smoothbore and muzzle loading.

The cannon at Taipa Fort is classed as coast artillery. It is smooth bored with a calibre of 163 mm (6.4 in.), thus, in the terminology of the day, it is a 32 pounder. When it was put in place, the 32 pounder had only recently replaced the 24 pounder as the normal size, though larger pieces soon came into service. It would probably have fired balls of cast iron although explosive shells were starting to become more popular at that time. These would have been loaded at the muzzle and sent on their way by a charge of gunpowder.

Contemporary sources\(^8\) show that a U.S. Ordnance 32 pounder had a barrel weight of about 7,200 lbs (3,300 kg). The overall length of the barrel of this cannon, including the end ring, is 94 inches (2.38 m), shorter than the U.S. Ordnance standard; hence its weight is likely to be a bit less. With a charge of 8 lbs (3.64 kg) of powder, and at an elevation of 5°, a standard gun would have a range of about 1,920 yards (1,750 m). Greater elevation and bigger charges could increase the range to 4,000 to 5,000 yards (3,600 to 4,500 m), although with greater range the accuracy would decrease. Its location on Taipa meant the range could easily cover the surrounding sea passages.

The mounting on this cannon is termed a “barbette” mount, meaning it is mounted to fire above the parapet. This allowed it to be swivelled round to give a wide angular field of fire. The mounting is in two basic parts. The barrel is mounted on a compact carriage of timber, bound with iron straps, and with iron wheels which allow it to move backwards and forwards on a lower carriage that provides a traversing mechanism. This apparatus consists of a grillage of timber beams mounted on iron wheels and able to rotate about a fixed pivot.

The wheels run on granite tracks that form arcs around the pivot. The rear wheels are connected via a sprocket and chain to a manually operated mechanism that rotates the mounting. A screw attached to the rear of the barrel adjusted its elevation. This screw would be turned by means of a spike inserted into holes in its shaft.

The mounting had one other function. As can be seen from the illustrations, the gun’s primary carriage sits on top of the main rotational framework. It is apparently separate from it and the small iron wheels
run on iron plates inlet into the lower fame. The two do, however, have some connection. Three vertical iron plates are mounted between the two main timbers of the frame, running from front to back. A mechanism, known as a compressor, attached to the gun carriage is designed to grip these plates. (Figure 7) The levers on either side of the carriage adjust the amount of pressure applied to the plates.

The purpose of this seemingly complicated mechanism is to control the recoil of the gun. The friction between the plates and the clamp absorbed the recoil energy and limited the backward movement. After firing and reloading, the clamp could be loosened and the carriage run forward, reclamped, and made ready to fire another round. All in all, a very ingenious solution, although not very efficient in practice as the action was rather harsh.

The cannon was obviously up-to-date when it was installed but the world was experiencing an arms race at the time. This was particularly true of coastal defences. Ships had thicker armour plating and bigger and better cannon. They were not only more difficult to sink but they constituted a serious threat to the forts. Coastal artillery had to respond and it too became bigger and better. Breech loading and rifling were introduced to increase the rate of fire and improve the accuracy.

The advance in technology meant that cannon like the one at Taipa Fort soon became obsolete and were usually replaced. Fortunately Taipa was not attacked and Taipa Fort was never tested. Its strategic significance was less important as pirates could be more easily controlled with modern ships, hence there was no pressure to update its defences.

Although similar cannon and mountings were in position in other forts in Macau, the Taipa Fort gun is a lone example left with a barbette mount in its original position. Not only is it a reminder of Macau’s past, but it also bears testament to the engineers of the nineteenth century and their never ending quest for better weapons, a quest that continues to this day.
NOTES

Although nothing remains of the fleet's presence in the 1970s the homes of fishermen built on stilts over the water lined the then waterfront at Taipa village.

The pediment of the porch is also decorated with the Portuguese Arms.

The road passes through a tunnel cut into the hill immediately behind the fort.

1. The pier was built some time after 1947.

2. The timber of the mount has possibly been replaced, but the fittings appear to be the original and there is no reason to doubt that its form is as it was originally.

3. The marking is on the trunnion, but is now partly obscured by paint.

4. The iron round shot that it fired would weigh approximately 32 pounds (14.5 Kg).

Fig. 1. A plan of the Fort dating from the early twentieth century.
Fig. 2. The Portuguese coat of arms on the left side of the main building.
Fig. 4. The gunpowder store.
Fig. 5. The situation of the cannon, still pointing out across the straight.
Fig. 7. The mechanism, known as a compressor, attached to the gun carriage to absorb the recoil.