



HEADLESS SLOTH

THE THIEF OF LIVERPOOL

GAME DESIGN DOCUMENT



Ash Denford ~ Dylan O'Shea ~ Jamie Scobbie
Kristian Pearson ~ Stuart Black

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1: GAME OVERVIEW

1.1 GAME CONCEPT

The Thief of Liverpool is a game following the fictional story of a robbery committed by an individual in the Albert Docks of Liverpool in the 1880's. The game allows the player to take on the role of the thief during this heist.

The player also takes on a second character following the story from the point of view of a visitor to contemporary Liverpool on a guided tour.

This duality permits the implementation of a change state between the past and present, which is a core feature of the game. It allows for dialogue driven narrative to be utilised in the present state, while the past state focuses on action driven and emergent narrative as the player makes their choices on how to complete the in game objectives. An example of this being used in a game is in *Assassin's Creed* (Ubisoft 2007).

1.2 GENRE AND THEME

The game's focal point is its stealth mechanics

as the player's role as the thief on a gloomy night as they avoid the dock's guards - the watchmen. This takes place in the past state, which will be characterised by adorning the location with items and objects of the time period.

It's important to note that, unlike some of the games that *The Thief of Liverpool* takes inspiration from, combat is not an intrinsic part of this game. In order to succeed, players must approach their objectives in a covert manner as alerting the watchmen to their presence will increase the difficulty of the game as they become more vigilant.

2: ENVIRONMENT AND STATE CHANGE

2.1 CHOICE OF LOCATION

The Albert Dock in Liverpool possess a range of attributes which make it suitable for this project. The primary reason for choosing this site is that the buildings can be reconstructed very easily using a modular approach, as the same features and structures are repeated around the dock, with only a handful of places breaking this pattern.

The other reason for choosing this location is that it is relatively enclosed and there are 'choke points' which can be used to prevent access to the other areas of the dock. These include small arched doorways, large cast iron gates, stone gate posts and a rotating bridge which can be opened and closed.

The Albert dock is surrounded by the waters of several other docks, providing it with a degree of seclusion and reaching other locations requires crossing bridges.

The walls of the buildings themselves encircle the dock's water and provide a visual barrier to the cityscape beyond.

2.2 AN OVERVIEW OF THE SITE , BOUNDARIES AND PLAYABLE SPACE

Figure 1 is a visitor site map which has the playable exterior space highlighted, whilst areas unreachable by the player are in shadow.

The walls of the structure and the water of the docks will provide barriers against the player leaving this area.

The point marked with an **A** on the map denotes the location at which gameplay will begin, for both present and past states. It is also the location of an alcove at the end of the pavilion in which a door will be placed in order to create a boundary.

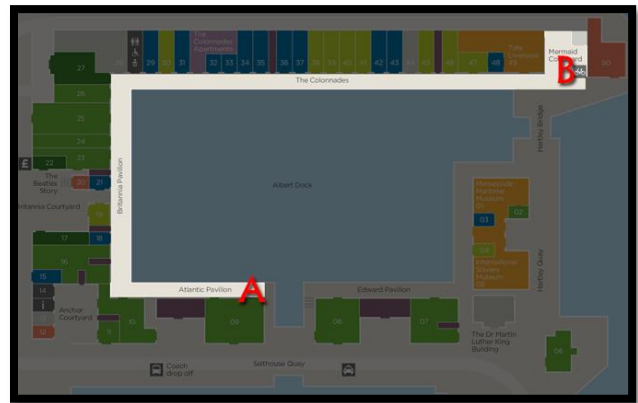


Figure 1

Point **B** is the location of the end of gameplay. Another boundary will be situated here in the form of a large gate between two stone gateposts, preventing access beyond the courtyard.

Present State

In the present state, the player will be led along the route, with next to no opportunity to deviate from the path. Some control will be permitted in order to grant the illusion of agency and the player will have the capacity to meander in the direction that they are being taken, foreshadowing the route that they will later follow in the past state.

This is preferable to relying on simple camera tracks which may not be as engaging and instead permitting the player to explore the environment while the narrative is being delivered, potentially providing more immersion than a standard cut scene.

Past State

In the past state the player will also follow the same path, but will have more options as to what approach they take. Similar to *Dishonored* (Arkane Studios, 2012), a game which partially sold itself on player choice; puzzles and challenges will be designed with the intention of allowing the player to tackle them in more than one manner.

It will have to be considered that, in this project the variety of action mechanics available to the player will be far more limited than *Dishonored* due to the scale of the project and so less combinations of actions will be available to utilise.

2.3 HISTORY OF THE SITE

The Albert Docks were opened in 1846 by Prince Albert (SOURCE) and were constructed with the intention of allowing ships to moor and to load and unload their cargo directly into the large warehouse buildings. They were designed with non-combustible materials as warehouse fires posed a huge risk. This made the Albert dock suitable for more precious goods such as tobacco and spirits, such as the kegs of whiskey shown in *Figure 2*.

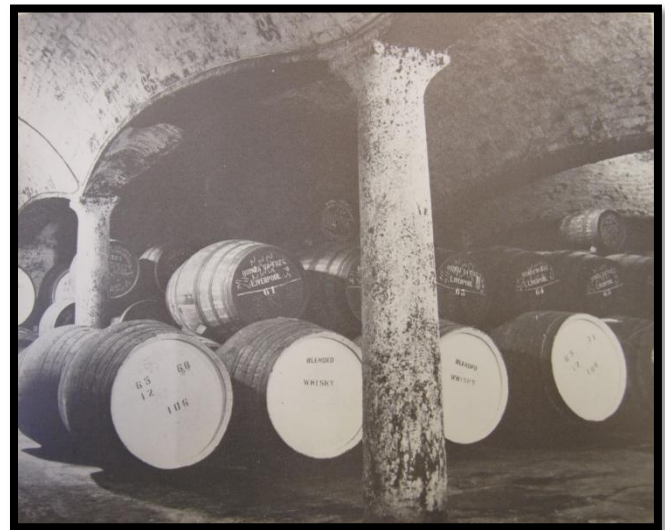


Figure 2

Housed in the archives of the Maritime Museum was a collection of proposal blueprints for the dock buildings including top down drawings of the ground floor (pictured in *Figure 4*), second floor and vaults. A series of technical drawings of the clocktower, an example of which can be seen in *Figure 5*, were also present in the collection. This

aspect of the structure is of particular interest as it was constructed in 1848 (Liverpool World2009) but is no longer present. After some research it was discovered that, according to Richard Pollard (Buildings of England 2006) it was removed c.1960. This means that it is required in the past state but not in the present state.

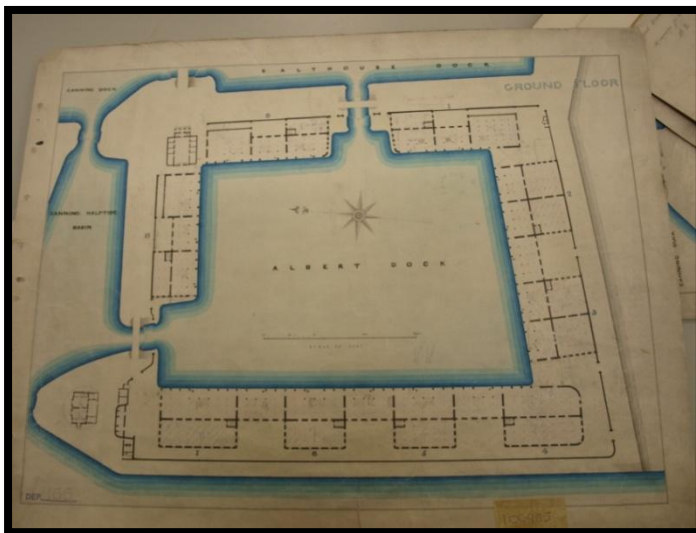


Figure 3

The more contemporary history of the site, including its decline and eventual closure led the warehouses and other buildings into disrepair. But in the

In 1980 a renovation of the waterfront area began with the opening of the Maritime Museum (Tansley 2015) which leads into the game's present state. Following the dredging of the dock and reconstruction of the buildings, the location became a prime tourist attraction and the Albert Dock's website itself advertises walking tours. The game uses such a tour to weave its own imagined narrative in the form of dialogue presented by the tour guide.



Figure 4

2.4 THE WATCHMEN

The watchmen are the level's 'enemies' who will attempt to thwart the player's attempts to succeed in completing the objectives.

While we failed to find explicit evidence on the subject regarding the Albert dock-Birkenhead dock employed watchmen and

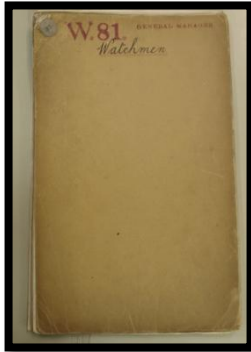


Figure 6

constables in order to provide security and regulate loading and unloading of cargo. Evidence of this was found in a collection of memos and committee meeting minutes (pictured in *Figure 5*) Mersey Docks and Harbour Board collection of historical documents held in the archives of the Liverpool Maritime Museum.



Figure 5

The watchmen in the game perform a similar role to that of night watchmen, which were members of the community enroled in keeping the peace prior to the establishment of official police forces across the United Kingdom. While we are embellishing the truth to a degree, it's not beyond imagining that the owner of a dock containing valuable goods would employ men to keep guard.

It would appear that they did perform a similar role, and an article in an issue of the American newspaper, *The Spokesman* from 1953 discusses the confrontation between dock watchmen and thieves. While this article was written over half a century after the events in the game, it does support the argument that part of the watchmen's role is to 'halt thievery'.

The archive material did present some insight into the role and, most importantly the appearance of watchmen of Birkenhead docks in 1882.

A memo (pictured in *Figure 6*) disclosed a list of items of clothing worn by the dock watchmen. *Figure 5* shows the uniform worn by a dock employee of Liverpool docks and, judging by the list provided by *Figure 7*, it's not difficult to imagine that the watchmen wore similar attire.

This information will be useful if we have the opportunity to create our own character model or alternatively for sourcing a previously created character model.

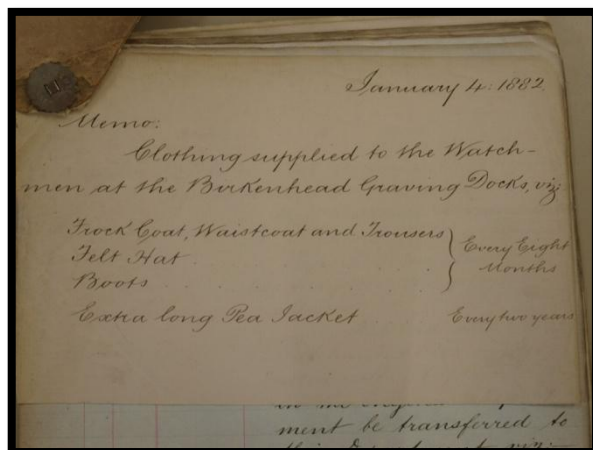


Figure 7

The uniform includes:

- Frock Coat
- Waistcoat
- Trousers
- Felt Hat
- Boots
- Extra Long Pea Jacket

3: GAMEPLAY AND MECHANICS

3.1 CONTROLS AND SPATIAL MECHANICS

Table 1 shows the keyboard controls intended to be used for player control.

Table 1

Input	Event
WASD Keys	Controls movement along the X and Z axis. Also used when in the hanging state for climbing up and dropping down
Space Key	Triggers the jump action.
Right Mouse Click	Enters aim mode for the purpose of using the throw and camera shot mechanics.
Left Mouse Click	Triggers the throw and camera shot actions.
Shift Key	Toggles the player state between run and walk.
Control Key	Toggles the player state between crouched and stood up.
E Key	Interacts with objects in the environment.

Present State

Movement in the present state is restricted to a walking pace as the player is led along by the tour guide. This prevents the player from straying too far away from the guide delivering the dialogue. A mobile invisible wall will also prevent the player from falling behind too far by applying movement to the player controller in the direction of the guide when the player is within the wall's trigger box.

While this could be a potential cause for irritation for some players, we decided that allowing some control over spatial movement and camera angle could mitigate this for the most part. It is possible that a skip scene function could be implemented, though this could allow players to miss out on potentially important gameplay instructions.

Past State

Movement in the past state is, by contrast much more free and the default walk speed is slightly higher than that of the present state. The player is able to toggle between **walk** and **run** using the shift key, changing their movement speed and thus how detectable they are by the watchmen.

Crouching is used to break the line of sight between the watchmen and the player character, raising concealment, while also applying a small movement penalty. It is toggled with the left control key.

Jumping using the space bar allows the player to reach areas and ledges above them. The jump height will be just under one unit, or waist height of the character. It will also provide a penalty to concealment in the form of increased movement speed.

Hanging is instigated when the player is jumping and a collider above the character's head enters a climbable ledge's trigger box. While in this state pushing the W key will

cause the player to climb while the S key will cause the player to drop down. Hinging will also be triggered should the player character walk off a ledge that is below their feet. As they begin to drop, a check will be made for the presence of a ledge.

Climbing is entered from the hanging state. This causes the player character to climb up and over a ledge which they have been hanging from. Climbable ledges are defined by the level designer using a blueprint object.

3.2 CAMERA CONTROL

The game will be played primarily from a first person perspective, with the mouse controlling the facing direction. A third person camera may be implemented in certain situations should it be deemed necessary, for example when the player is hanging, the camera will zoom out to a third person perspective, looking over the character's shoulder. Dropping or climbing up will return the camera to first person.

This allows the player to see above and below them before they decide to move. It also prevents the entire screen being taken up by a close up shot of a texture.

A third person camera may also be used when the player is carrying barrels in section 3. This is used to grant the player more situational awareness when they are in a compromised situation.

3.3 ACTION MECHANICS

Present State

The **Camera Shot** mechanic is used to progress the story by instigating the change to the past state at key locations. By holding right click while in the present state, the player character will hold a camera up to eye level. Pressing left click while in this view will take a photograph, causing the screen to flash white momentarily.

If the player is currently located at one of the key locations, then a change state will occur while the game world is hidden by the flash of the camera.

Past State

Extinguish Lantern is used to reduce the light in an area allowing the player to stay hidden in the shadows and move undetected. The player is prompted to extinguish a lantern when they are adjacent to it by the press of the 'E' key.

Wet Rag is used as a way to create a projectile which can be used to extinguish lanterns. Located around the environment there will be water containers which, when approached can be used to soak a rag of fabric.

Throw Rag uses the wet rag item as a projectile in order to extinguish lanterns. Throwing mechanics behave similarly to the camera shot mechanic in that the right mouse button is held whilst aiming the throw and the left mouse button is clicked to launch the projectile.

Throw Bottle behaves like the throw rag mechanic. It is used primarily in order to cause an audible distraction for luring the watchmen away from their current position. The bottle creates a sound at the point of impact. If the sound is created within the

audible range of a watchmen, then they will move to investigate. It requires a bottle projectile to be held. Striking a watchman with the bottle will not damage them, but only serve to increase their alert level.

Pickup Bottle is used to collect a bottle item found in the environment or from a crate of bottles. When adjacent to the bottle, the player will be prompted to pick it up if they're not already carrying one as only one bottle can be held at a time.

The **Carry Barrel** mechanic is used in section 3 of the level.

It is required for the completion of the final objective in which the player must transport barrels of whiskey past the guards and onto the quayside to a boat. While carrying the barrel, the player moves at a slightly reduced speed and is also unable to perform other actions, requiring the player to drop the barrel before using another action.

3.4 STEALTH MECHANICS

The stealth mechanics are implemented entirely in the past state.

At the core of this mechanic is how well concealed the player character is from the watchmen. This is measured in the **concealment** metric.

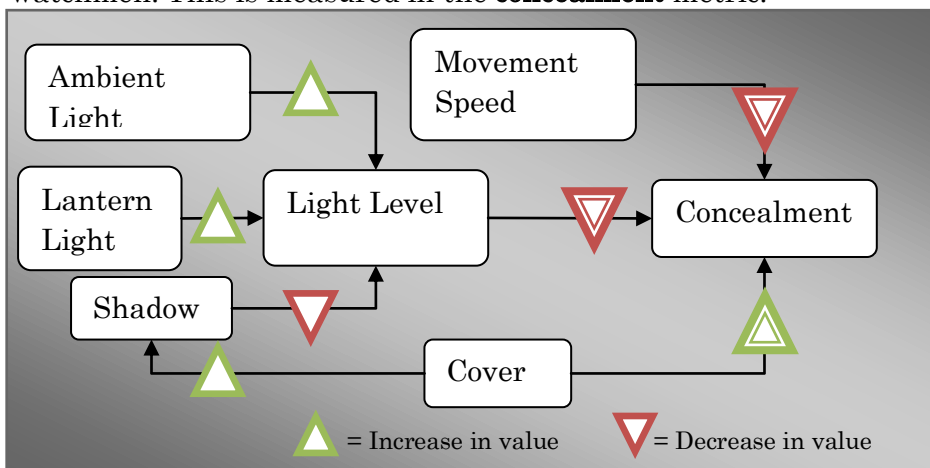


Figure 2 shows how elements in the environment and the player's input affect the concealment of the player character.

Figure 9

The **light level** and positive **movement speed** will cause a reduction in concealment while **cover** increases concealment by providing a line of sight (LOS) blocker, but also by creating **shadows**, which lower the light level. Conversely, **lantern light** increases the light level and the **ambient light**, which is the light level when not in shadows or lantern light also reduces concealment.

In engine - concealment will be calculated by variables fed in from trigger volumes attached to placed shadows and illuminated lanterns.

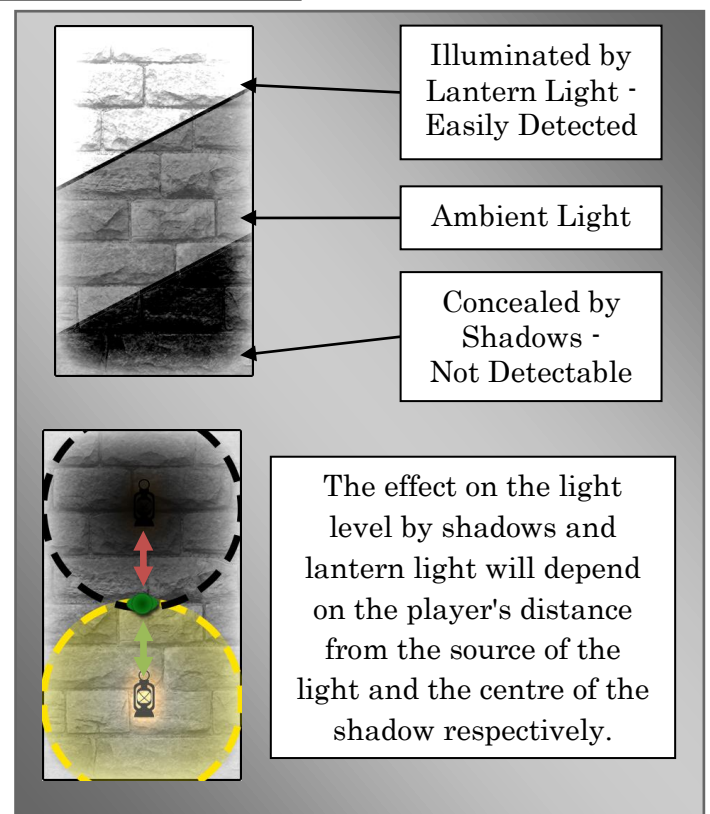


Figure 8

When the player character is within the volume, the distance from the centre of the volume will be passed to the player code and applied to the calculation. Shadow volumes will be placed manually by the level designer and the bonus to concealment can be adjusted to balance and change difficulty.

3.5 WATCHMAN MECHANICS

Figure 5 is a flowchart depicting the watchmen's behaviour and the logic gates which control their actions. It is demonstrated how watchmen take different actions depending upon their alert level. Table 2 summarises the behaviour of the watchmen at each alert level and also supplements Figure 10 in explaining how the watchmen transition between alert levels. This system takes inspiration from *Metal gear Solid* (Konami, 1998) in which feedback makes players aware of the guard's alert phases.

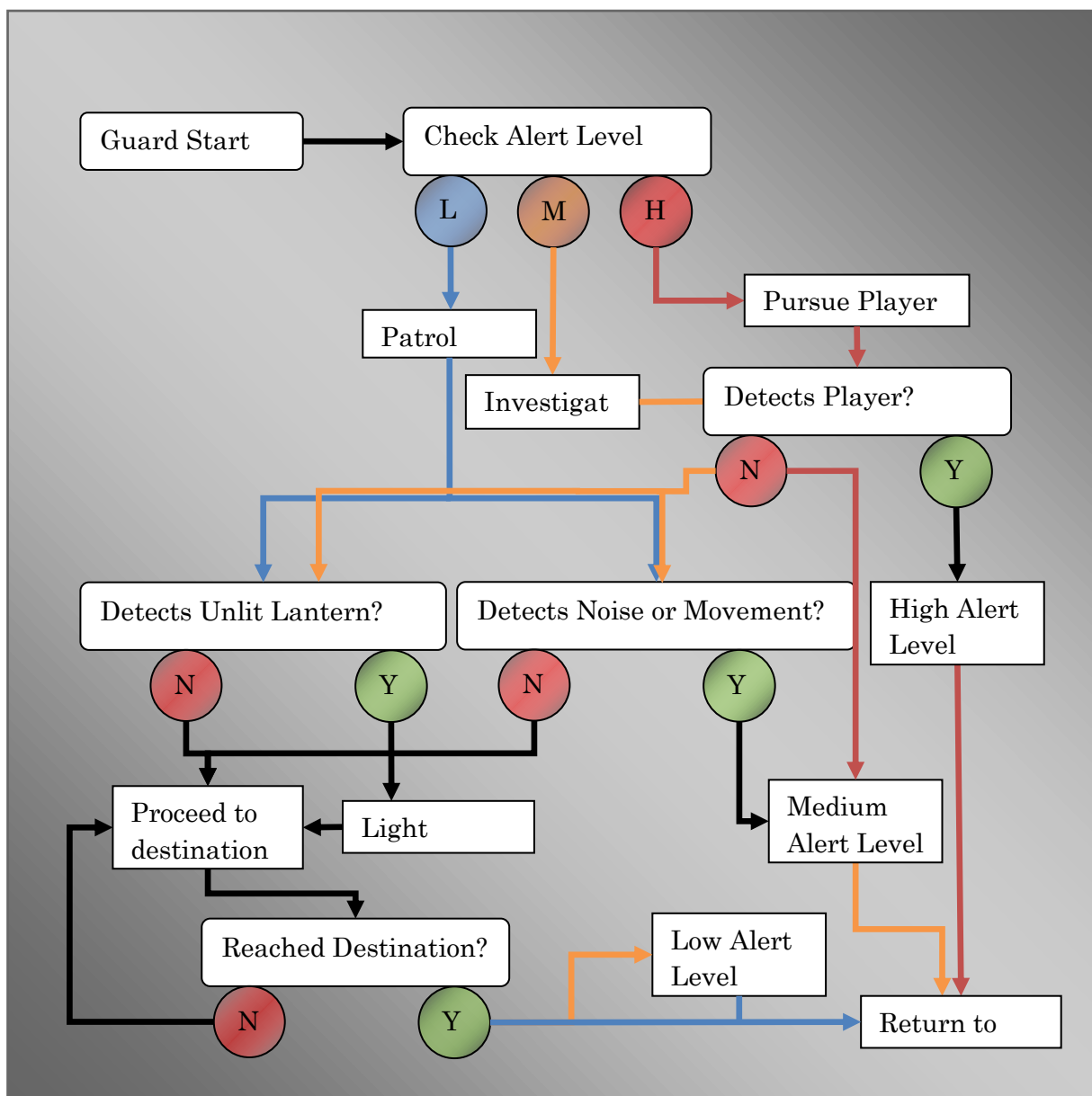


Figure 10

Watchmen Alert Levels	
Low Alert	By default, watchmen are at low alert level. If a watchman is in medium alert, then they will return to low alert after a timer has expired. At low alert, watchmen will : ➤ Stand guard at assigned positions. ➤ Patrol along assigned routes. ➤ Re-light any extinguished lanterns.
Medium Alert	When in medium alert, watchmen will : ➤ Stray from their patrol routes. ➤ Have slightly extended sight and sound detection ranges. ➤ Re-light any extinguished lanterns. Watchmen will enter the medium alert stage when : 1. They hear a sound, such as something being thrown by the player character. 2. Another watchman within their sight range is at medium alert. 3. After the player has escaped them, the watchman will return from high alert to medium alert.
High alert	When in high alert, watchmen will : ➤ Chase after the player. ➤ Have slightly extended sight and sound detection ranges. watchmen will enter the high alert stage when : 1. The player character enters their cone of vision 2. Another watchman within their sight range is at high alert. After the player has left their line of sight, the watchman will return from high to medium alert once a short timer has expired.

Table 2

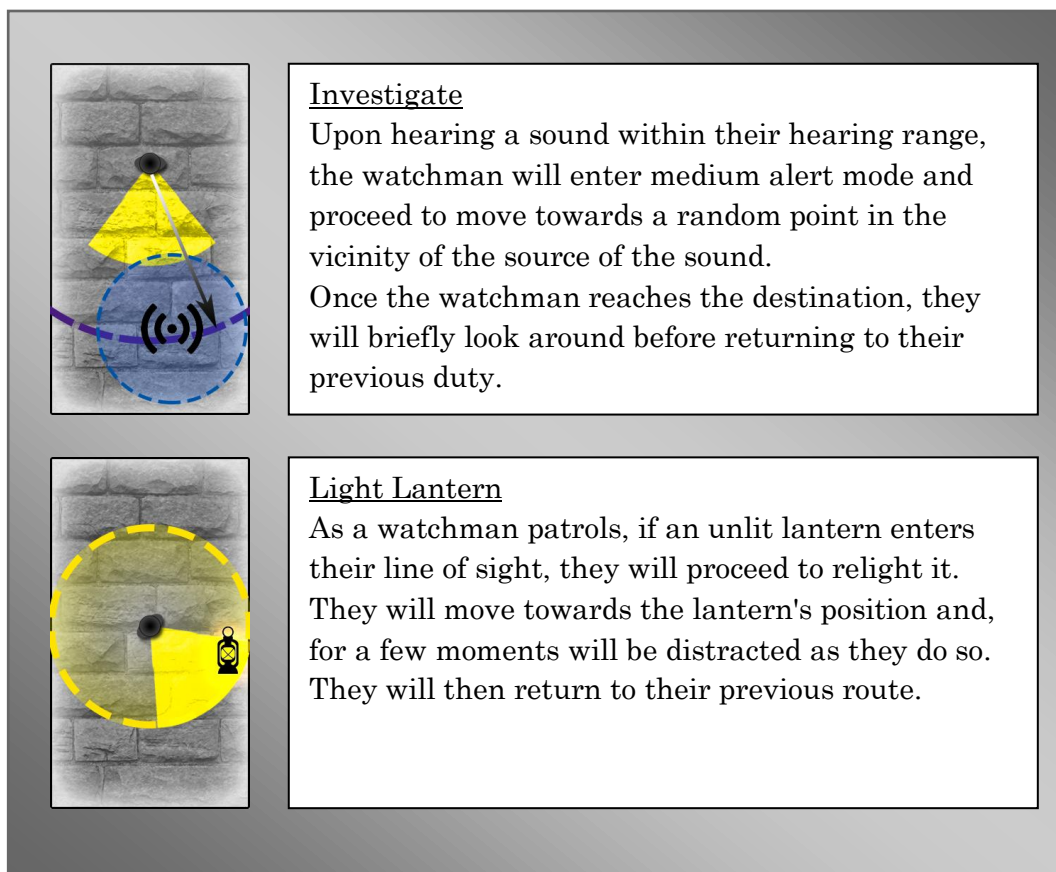


Figure 11

Figure 11 illustrates the actions taken by watchmen and how they respond to elements in the environment within their detection ranges and Figure 12 shows the detection ranges of watchmen.

Guard Sight and Hearing Radii								
	Start Radius		Bonus from Medium		Bonus from High		Maximum Radius	
	Sight	Hearing	Sight	Hearing	Sight	Hearing	Sight	Hearing
Low	1.8m	3.5m	0.1m	0.1m	0.2m	0.2m	2.6m	4.5m
Med	2m	4m	0.1m	0.1m	0.3m	0.3m	3m	5m
High	2.2m	4m	0.1m	0.1m	0.3m	0.3m	3.2m	5m

Table 3

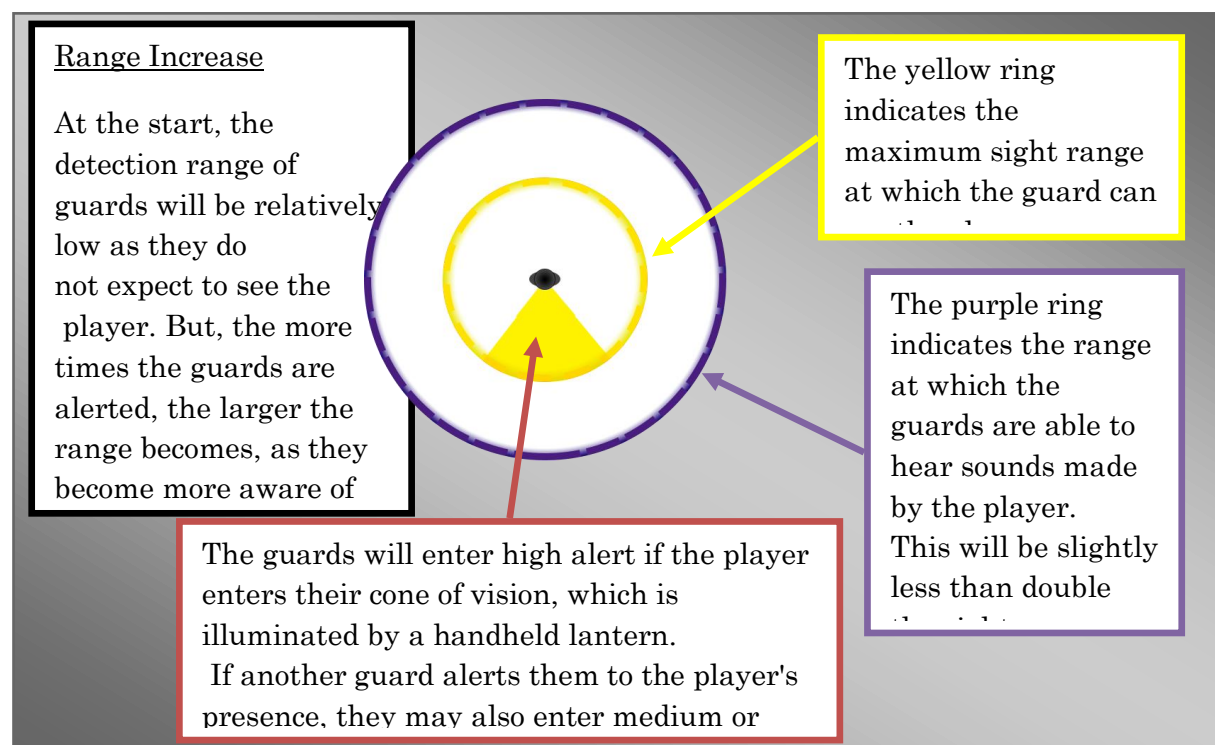


Figure 12

3.6 LOSE STATE

A lose state is triggered when a watchman in high alert comes into close proximity with the player character. This causes the player to return to the previous checkpoint in that section while also resetting the watchmen's detection radii to the start radius. This is necessary to prevent a deadlock situation where the player's skill level renders them unable to get past watchmen with boosted detection radii.

5: NARRATIVE AND PROGRESSION

5.1 NARRATIVE OVERVIEW

The player is given control immediately upon starting the game from the main menu and begins in the present state. The game is at its slowest pace at this point as the story is revealed to the player through the tour guide. Upon reaching the first point of interest in the tour, the player is prompted to take a photograph of the location using the camera shot mechanic. This causes the change to the past state to occur while also providing the player with a checkpoint at the point of entering the past state.

In the past state, the player gains much more control and action as pacing is gradually increased.

Progression through the level is determined by the player's completion of each objective. Completion of an objective in the past state will return the player to the present state, with the exception of the final objective which constitutes as a win condition.

This pattern is repeated three times throughout the level, with a step up in the complexity of what is being asked of the player each time they return to the past state.

Objective 1– Gain access to the office and take the key

Objective 2 – Reach the warehouse

Objective 3 – Carry barrel from the warehouse to the boat
(can be completed multiple times)

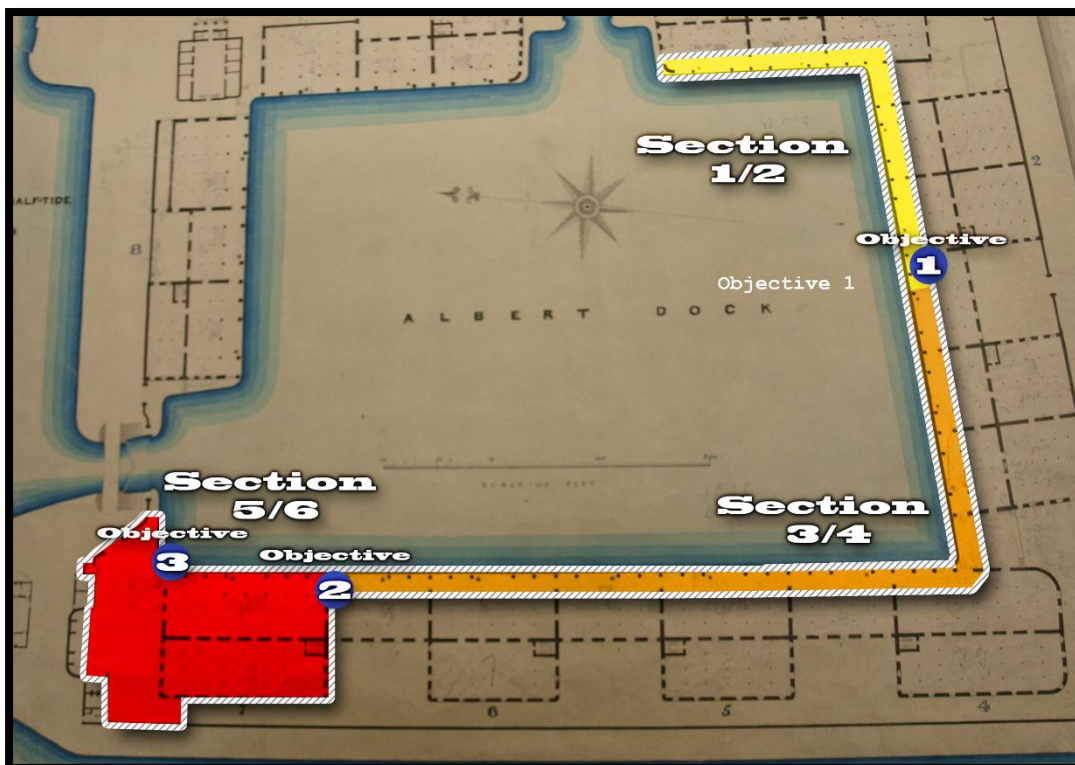
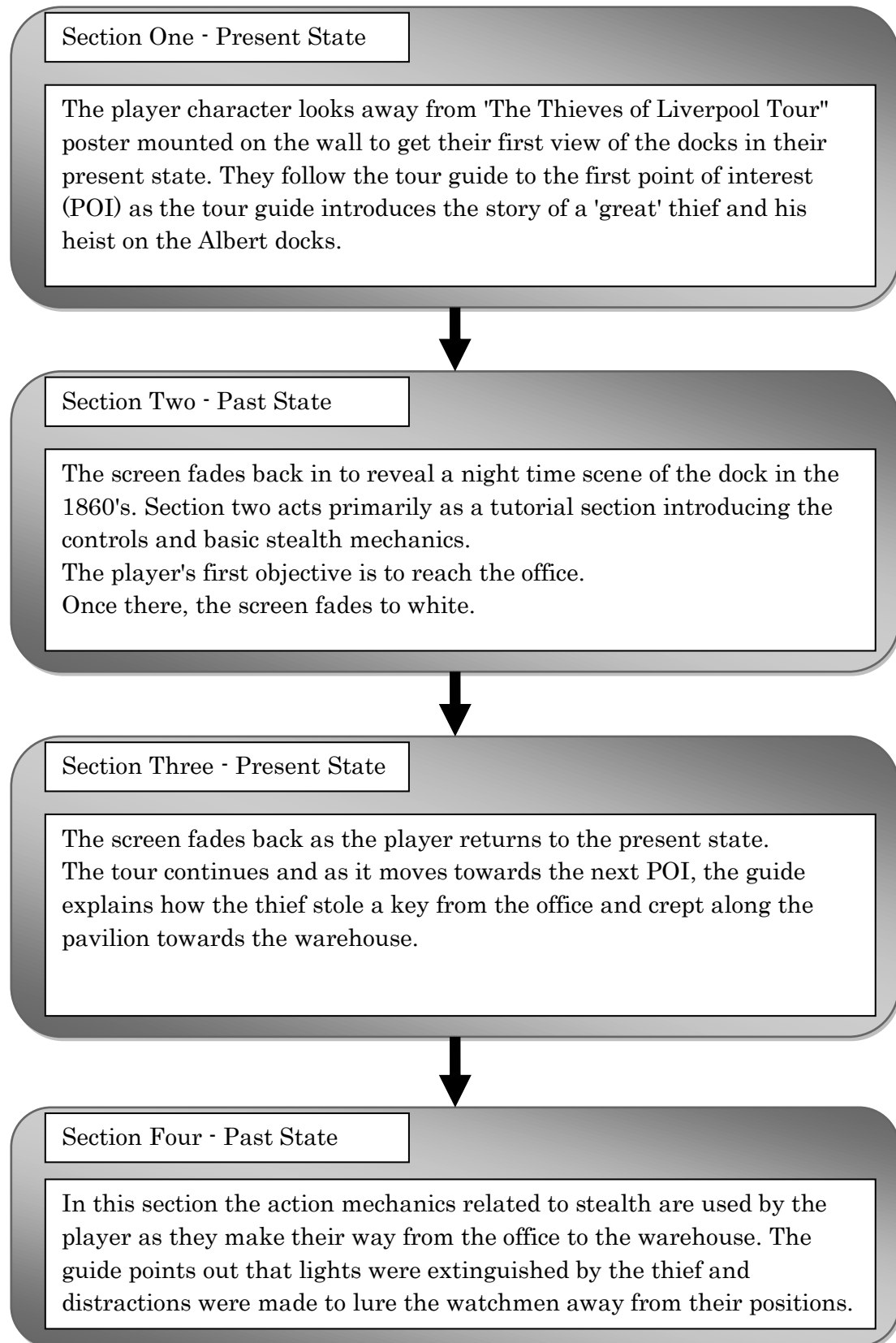
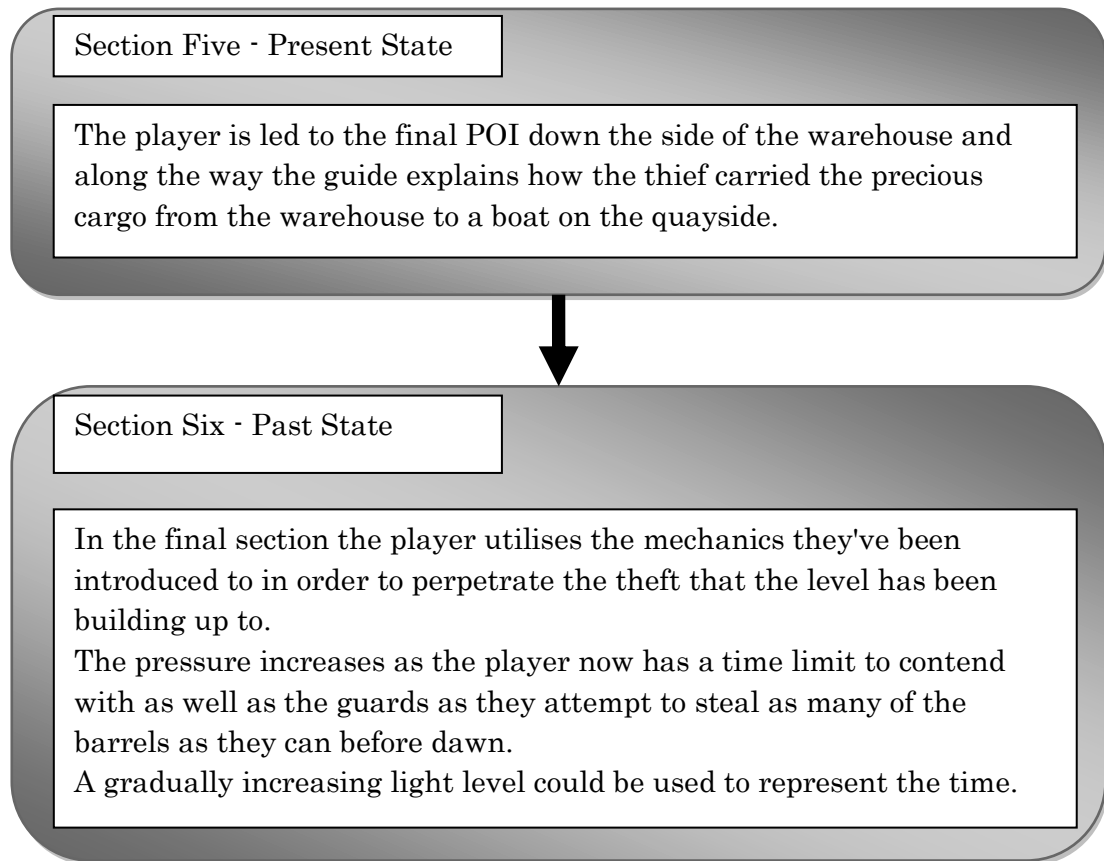


Figure 13

The following flowchart summarises the events that take place in each section of gameplay.





5.2 SCRIPT

The camera

Pan to the right from the menu poster to look towards the

Section One

Tour Guide:

Good morning everyone and welcome to the Albert Dock's 'Thief of Liverpool' tour. If you could follow me, we can begin.

Guide turns and walks towards POI 1 while talking.

Tour Guide:

The Albert Docks opened
high boundary walls
fire proof and theft proof, but that didn't stop this thief.

Once he had gained access to the dock, his main problem would have been remaining hidden from the watchmen guarding the warehouses at night. He used the shadows to his advantage, staying out of the lantern light.

Feel free to take photographs before we move along.

The player is prompted to take a photograph with on screen instructions.

Section Three

Camera fades in.

Guide walks towards POI 2 while talking.

Tour Guide:

[fade in] ...so after taking the key, the thief made his way along the quay. Along the way he distracted the watchmen guarding the docks by throwing bottles to lure them away from their posts. He also extinguished lanterns using rags soaked in water by throwing them over the flame.

The player is prompted to take a photograph with on screen instructions.

Section Five

Camera fades in.

Guide walks towards POI 3 while talking.

Tour Guide:

[fade in] ...He managed to singlehandedly get away with cargo worth £10,000 in today's money by carrying the barrels of whiskey one at a time from the warehouse to the boat.

The player is prompted to take a photograph with on screen instructions.

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