Medieval Lighthouses
Part 1 - Introduction

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In the first book of this series[1] I presented a thorough account of the origins of lighthouses from the earliest times when humans first left the safety of land to embark upon journeys by sea. I judged that there was a convenient year to end that book at 400 CE, and so this book takes up the history where the first one ended.

The year 400[2] was chosen because it was a watershed year at which Roman civilization seemed (to me, at least, having an English perspective) to change course. Recognizing that there were an increasing number of attacks to their borders, and that they no longer had the resources to keep those borders intact, the Roman empire began a period of contraction instead of expansion: a long phase of retreat and painful transformation. Although it had been the Greeks who had, perhaps accidentally, invented the idea of lighthouses, it had been the Romans who, as in so many other areas, had taken up the concept and created a network of lighthouses around the perimeters of its enormous empire.[3] But from around 400 onwards, no new lighthouse sites were established as the Romans struggled to fight off the inevitable.

This second part of my discourse on Pharology has been titled *Medieval Lighthouses* to distinguish it from the contents of my book about *Ancient Lighthouses*. This study leads into the third and final period when Pharology entered a most successful period of rapid growth caused by the Industrial Revolution, generally considered to have started around 1760 and exemplified by the construction of the Iron Bridge, 1777-1781, in Shropshire UK. I have arbitrarily chosen to end this volume and start the final volume, *Industrial Lighthouses*, at 1700 when lighthouse construction entered its new phase with the building of the world's first tower on a sea-swept rock at the Eddystone. Using such a broad time period for the middle centuries allows this book to fall naturally into three more conventional periods of history - the *Dark Ages* (400 - 1000), the *Medieval* period (1000 to 1600) and a *Pre-Industrial* period (1600-1700).[4]

Objectives

The objectives of this chapter are:

1. To specify the time periods used in this volume that relate to the re-development of lighthouses and other lighted aids to navigation.

2. To outline the changes in the structure of Western Europe that led to a new paradigm of safety at sea.

The Timeline

The timeline for the years covered by this work is presented in the graphic below. There is no universally agreed definition of "The Medieval" Period, or "The Middle Ages." Such descriptions depend entirely upon the viewpoint of the narrator who may have an entirely different perspective from a different country. Inevitably, my perspective is one from Western Europe. Specifically, I have chosen the timespan of 400-1700 CE as my definition of the Medieval Period.

As I will propose later, the changes discussed in this book pre-date any other improvements to the provision of lighted aids to navigation elsewhere around the world, most of which fall into the history of the third period - the industrial revolution when lighthouse technology was exported around the world by the Imperial nations. Those details will be part of volume 3.

In my previous volume I discussed the ways in which there were indications of prehistoric aids to navigation.[5] (The use of the term prehistoric is commonly used to refer to times before the existence of written records.) In the well documented time commonly called the Classical Period, which covers both the Greek and Roman cultures, we can be sure that lights onshore - almost exclusively fires - were used to aid mariners. This was best illustrated by the wonderful structure called the Pharos of Alexandria in Egypt, which was Greek inspired - probably

Timeline for the Development of Lighted Aids to Navigation in the Pre-Industrial Times of the Common Era.
Medieval Period: 400-1700 CE

1700 CE	**Industrial (Modern) Period**	Eddystone: The first lighthouse of the industrial era	1700 CE
1600			1600
1500	**Late Medieval (Pre-Industrial) Period**	Early lighthouses constructed as private businesses	1500
1400			1400
1300			1300
1200	**Hanseatic Period**	Growth of business activities around the North Sea promote the use of fire-lights in ports and harbours	1200
1100			1100
1000	**Guilds Brotherhoods & Fraternities**	Co-operatives and self-help groups form in seafaring communities	1000
900			900
800	**Ecclesiastical Period**	Ecclesiastical Period: lights shown from Christian sites	800
700			700
600	**Dark Ages (Post-Roman Period)**	No known lighted aids to navigation	600
500			500
400		Roman lighthouses fall into disuse	400
300			300
200	**Roman Period**	Extensive network of Roman lighthouses and other aids to navigation exists	200
100			100
0	**Classical Period**	Lights (fires) shown from pagan religious sites assist mariners	0
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---	**Pre-History**	Some evidence of prehistoric aids to navigation	---

because the Greeks had already begun to use the fires from pagan religious practices as navigational aids. Out of the Greek culture came a network of early lighthouses such as we would recognize today, developed by the Romans to assist their extensive use of sea travel in the expansion and support of their Empire.[6]

The decline and fall[7] of the Roman Empire from around the time of the early fifth century led to the gradual destruction of their extensive network of lights, and the western world entered the period of the "Dark Ages" around 400 onwards. This significant hiatus in the progress of navigational aids has no clear beginning or end.

However, I believe there is no doubt that the emergence from this anarchical time was associated with the spread of Christianity. Perhaps that is a *non sequitur*, but this is the main argument of this book. These times have been called by others the Ecclesiastical Period and will form an extensive presentation of material in later chapters.

Somewhat in parallel with the actions of church men, we see the development of co-operative groups of seamen whose self-interest in improvements to their safety are clear. We discuss this under the heading of Guilds, Brotherhoods and Fraternities.

As the critical mass of European communities grew so that they begin to expand centres of commerce, the co-operative nature of the growing economies resulted in many shared practices, including the showing of lights in ports and harbours to facilitate the mercantile activities of international trade. These years are commonly referred to as the Hanseatic Period. It is arguable that the stimulus for the re-establishment of a new network of lighthouses was initiated by this.

The growth of shipping and the increasing awareness that productivity is inextricably linked to safety leads to the realization that the exhibition of lights can be a business activity. In these years prior to the industrial revolution, there is a growing number of locations where early lighthouses are built to make profits for their investors.

Finally, as the full benefits of lighthouses are appreciated by governments, we see the development of formal management organizations for the planning and construction of lighthouses using current best practices. This story will be the subject of volume 3 in this series.

The End Of Rome

Today, we are all too familiar with the effects of the demise of a long-term regime. Countries that have been established in a certain way and under a certain style of government such that its citizens cannot remember any other way of doing things suffer what is known as a *power vacuum* when the system collapses. After an initial euphoria that comes with the release from the reins of (often oppressive)power, there is a sudden realization that the structures and machinery of government in the old style no longer exist. The uncertainty gives rise to arguments about what should take its place and, in the end, fighting usually results as prospective leaders jockey for position.

The Roman Empire was, arguably, the most successful in history, its influence and government affecting 70 million people - some 20% of the world's population, and covering 5 million square kilometres at its height under Trajan.[8]

At the end of the first volume in this series, I presented a summary of the status of lighthouses in the year 400. It was quite clear that, although the concept of lighthouses had been well-established by the Greek culture at Alexandria in Egypt, as evidenced by the awesome structure known as the Pharos, it was the Romans who had taken that idea and converted it into a material element of civilization. They considered that a lighthouse, in the form that all of us would recognize today,[9] was an important feature of every port and harbour. It had a utilitarian purpose, for it aided the vital processes of shipping food and other goods safely around the Empire. At Ostia, for example, the imported foodstuffs were needed to sustain the population of Rome, by then the world's largest city, and the building of lighthouses was vital to ensure as few losses as possible.

I also described how there is a large void of archaeological data relating to the many lighthouses that must have been built in Roman times, for, though we can be confident about the building of many Roman lighthouse structures, there is little left to confirm their existence. A likely explanation for this paucity of information is the extensive damage to Roman infrastructure suffered during the period when the Empire was in its final phase. After their destruction, the materials of which they had been built were re-used.

A second factor is the well-known rise of sea levels that has occurred since then, as well as the great changes to the shape of coastlines brought about by both erosion and the deposition of silt - the famous lighthouse of Ostia described in volume 1 is an excellent example. There is good reason to anticipate the discovery of new information about ancient lighthouses as more sub-sea archaeological investigations take place.

In view of the extensive passage of time and the many violent events and natural changes, perhaps we should not therefore be surprised that there is so little that remains of the Roman lighthouse heritage around the coastlines of Europe and North Africa.

The little hard evidence that we do have regarding Roman port and harbour lighthouses is precious, but firm, and the designs were presented in volume 1.[10]

Rather less well-known is that the Romans also employed the idea of waypoint structures that could act as ocean signposts.[11] An example is to be found on the island of Capri (Roman: Capreae) in the Bay of Naples where at least one structure was used in this way, rather than to indicate the entrance to a port. The characteristic feature of such structures is that the light was shown from a great height - not just atop a tall tower, as was the case at Alexandria, but on top of a high geographical feature. Although clearly valuable in a commercial sense, there is a greater sense of humanity attached to this activity, for the placement of such ocean signposts provides valuable information to navigators in their knowledge of position at sea, as well as of the position of potential life-threatening hazards.

A second avenue explored in volume 1 was the association of lighted aids to navigation with religious practices. I described how it became an essential part of ancient cultures to make sacrifices to the relevant gods, both on departure and arrival. Consequently it became commonplace for sites of religious activities to be established on high points and other prominent geographical features close to the places where sea journeys began and ended.[12] This practice probably began in civilizations prior to the Romans and was not a practice that we can specifically associate with the Romans, although it cannot be said that they did not engage in these activities. Associated with polytheism, it is probable that this activity inspired the entire idea of built structures to act as navigational aids, but the Romans certainly did not invent this.

Here we arrive at a most important point in this analysis. As the Roman Empire slowly passed through its period of decay as a unified political entity, we can argue that the built network of lighthouses (as well as many other structures) was gradually destroyed in varying degrees for the simple reason that it was intimately associated with the machinery of government from which the attackers were liberating themselves.

On the other hand, it was in the attackers' interests not to interfere with established churches and temples from where lights may have been shown, even for the most irregular periods. Even as religious structures were damaged or simply decayed, the sites themselves continued to be used for navigational advantage to the extent that they provide excellent clues for investigation today. Once the appropriate ground had been consecrated, the sites retained their religious uses and buildings were either repaired or rebuilt, whilst retaining their function as marks for seamen.

Thus, in the most general sense, I shall argue here that the practice of exhibiting lights for the benefit of mariners did not cease in parallel with the ending of Roman government. Indeed, it seems probable that the practice continued throughout the centuries that followed, but erratically and inconsistently. It did not require the building of dedicated towers as used by the Romans, and remained subject to prevailing conditions in each location, that is, during times of relative peace, locals probably found it most useful - indeed desirable - to show lights, but in times of war, the exact opposite situation prevailed. The chapters that follow will examine this theory in detail.

So, by 400, the Romans had established an efficient and effective network of lighthouses, the like of which had not been seen before. Structures built to Roman designs by local labour, were constructed all around the Mediterranean Sea, and beyond. However, the Roman Empire was coming under increasing attack from many quarters by 400, such that a certain amount of restructuring of its administrative framework became necessary. There were signs that perhaps the Roman model was suffering from overstretch. Whilst the citizens of its Empire remained quiescent, the Roman leadership could maintain stability and a successful economy.

However, once unrest was initiated and organized into forces of resistance, the Romans found it increasingly difficult to continue in the ways they had done in previous centuries. After 400, the strategy became more about limited withdrawal and consolidation, but even this policy eventually became unsustainable.

The conversion of Roman Emperors to Christianity caused additional changes to the ways in which the Empire was governed. In some ways, we might say that it was transformation rather than extinction. Now, it was the Roman Catholic Church that, through its Bishops of Rome in the west, and its Orthodox clergy in the east, at first working in parallel with the Roman Emperors, came to rule much of Europe.[13] These priests offered direct mediation with God and were accorded such respect that nominal chiefs of clans and rulers of fledgling nations often followed the guidance of the holy men who acquired enormous power and wealth, the residue of which is still seen in Europe today, especially in the Vatican.

As an Englishman, I must admit to some bias about the year 400 because my education marked it as the year the Romans left Britain for good.[14] The long period of stability was replaced by centuries of realignment of governance that was replicated across the many European regions that were now allowed to rebuild their societies based upon ethnicity. These centuries of adjustment lasted for different amounts of time in the different regions, and are often referred to as the Dark Ages.

The use of this name for a long period of history is interesting for its ambiguity. In the sense that it refers to a retardation in the progress of civilization, it implies regression from order to anarchy, from law to disorder, from peace to war and there is no doubt that this was true across much of Europe. Freed from the shackles of Rome, there was an enormous amount of restructuring to be done.

We might also say that it was a transition from light into darkness: its literal meaning of the absence of light is especially relevant to our discussion. There is a strong interpretation that the network of lighthouses established so efficiently by the Romans was extinguished in the chaos and wars of the centuries that followed the fifth century. It is as if the fledgling polities that formed during the twilight of the Roman military machine needed to rebuild their structures, and that lighthouses were at the bottom of the priority list.

This reformulation of civilized society was naturally land-based at first, and only once new networks of peaceful existence had been established on land could the sea-based networks of travel and trade be rebuilt. This process took a long time. Existing lighthouse structures had often been modified into fortified buildings and extensively used for military signalling purposes during times of war, a factor that complicates the analysis of their later use as lighthouses.

The building of new lighthouses was much less important in the grand scheme of things. Far more important was resistance to frequent attacks by hostile forces from competing societies. Such military activity was a feature of the Dark Ages that was to carry over into the many centuries that may be called, by some, the Middle Ages. Indeed, as we shall see, the Holy Wars, begun first between Christian and Barbarian forces, and later between Christians and Muslims, put huge pressure on the peaceful aim of providing safe passage to mariners.[15] If there was ever any attempt to provide navigational aids, it was localized, random, inefficient and spasmodic.

Thus, we find very little evidence of lighthouses being used in the centuries after 400, but can we be sure that this was the case? Obviously, we must derive our conclusions from written records and artifacts, and there is a distinct possibility that lights were indeed shown throughout the period, but that it is the lack of written accounts that explains the missing evidence.

Another aspect of the term Dark Ages is that, in the sense that civilization was regressing, there were fewer scholars to record the complex histories that were taking place. It is a simple fact that, following the rich period of history that today we call the Classical Period of Greek and Roman scholarship, the western world did indeed enter a period when it lacked the educational infrastructure to develop the same kinds of minds that had populated it previously. Writing, record-keeping and scholarship became almost entirely restricted to the activities of the holders of the holy orders, and it is of great benefit to us that it did for we might today be far poorer in our knowledge of history. It would not have been the first time that a greatly civilized people flourished but left behind almost nothing of their activities.

Notes

1 Trethewey, Ken: Ancient Lighthouses (2018).

2 More precisely, the Romans are considered to have left Britain around 410 AD. This is when Emperor Honorius supposedly told the Britons to look to their own defence in response to increasing threats from Saxon, Pictish, and Irish raiders.

3 For a detailed catalogue of these ancients lights, the reader is referred to Volume 1, pp265-290.

4 The precise definition of the period known as the Middle Ages is a matter of opinion. Middle Ages are defined as 600-1500 (Cambridge Dictionary) and as 476-1500 (Collins Dictionary). Medieval is derived from *medium aevum* meaning middle age. It was a time between the Roman Period and the re-birth of culture with the Renaissance.

5 Trethewey, Ken: Ancient Lighthouses, chapter 4.

6 A great deal of valuable research has been carried out on Ancient Coastal Settlements, Ports and Harbours by Arthur de Graauw and published at https://www.ancientportsantiques.com. Such data is priceless in helping to determine the possibility of the presence of a lightstructure or lighthouse.

7 We have become used to referring to the "decline and fall" of the Roman Empire, but perhaps it is more appropriate to think of it as a transformation into a different kind of political structure based around Christianity? It is better described as, first, a division of the Empire into two parts - one in the west and the other in the east. The western empire was subject to severe disruption, whilst the eastern part was transformed into a functioning Holy Roman Empire described as Byzantine since it was centred on Byzantium aka Constantinople aka Istanbul. See also note 13.

8 Wikipedia, Roman Empire, 20181031

9 There is considerable argument today about the definition of a lighthouse. I would direct the enquiring reader to my extensive arguments on the subject. I prefer to reserve the word lighthouse for an enclosed structure that exhibits a light for navigational purposes. Open fires and other lights should preferably be called lightstructures. Such a definition conforms to what most ordinary people would call, in English, a lighthouse. All this is described in detail at www.pharology.eu, in the early pages of this book, and in Volume 1, pages x and xi.

10 The most systematic study of Ancient Ports, that includes significant information about the existence of ancient lighthouses, has been published by de Graauw.

11 Once again, we note that Romans were often adopters of earlier ideas rather than inventors of new ones, and the idea of using marks onshore as ocean signposts may have originated with Phoenician mariners.

12 It is noteworthy that even today, many European ports and harbours have small shrines or Christian icons at their points of entry and exit that remind mariners of their placement in the arms of their Lord Jesus Christ, the origins of the act stemming directly from the time of the ancient Greeks.

13 The last Western Roman Emperor, Romulus Augustulus, was deposed in 476 by the Germanic general Odoacer. This traditionally marks the end of the Western Roman Empire. However, the Eastern Roman Empire (Byzantine Empire) continued for nearly a thousand more years, with its emperors still calling themselves "Roman Emperors." The Eastern Roman (Byzantine) emperors continued to rule from Constantinople until 1453 when the city fell to the Ottomans. The last Byzantine emperor, Constantine XI Palaiologos, died defending the city. These emperors viewed themselves as the legitimate continuation of the Roman tradition. In 800 AD, Charlemagne was crowned Emperor of the Romans by Pope Leo III, reviving the imperial title in Western Europe. This Holy Roman Empire was a complex, often fragmented polity mostly centered in what is now Germany, Austria, and parts of Italy. The last Holy Roman Emperor, Francis II , abdicated in 1806 during the Napoleonic Wars, formally dissolving the Empire. The clearest end to the Roman imperial tradition as a meaningful, continuous political role is in 1453, with the fall of Constantinople ending the Byzantine line of Roman emperors. Alternatively, we could say it was in 1806 with the dissolution of the Holy Roman Empire, ending the Western attempt to revive and maintain the Roman imperial title under Christian auspices.

14 The commonly accepted year is 410. We should remember that it was not a time of actual defeat, but of tactical withdrawal by the military. Many Romans remained behind, retaining their villas and land as what we would today call 'ex-pats'. The civil society that had been established by the Romans remained in place and was continued in an anglicized form for a long time after 410.

15 Curiously, I shall argue later how the lighthouse at Genoa may have been built *because of* participation by the Genoese in the First Crusade (see p220).