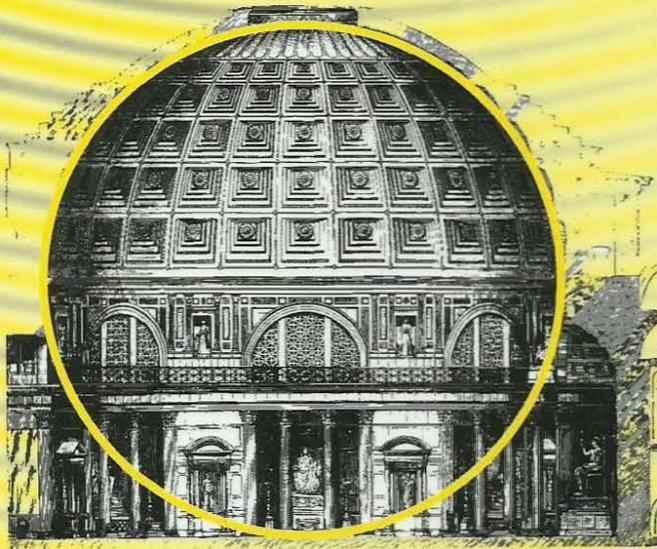


Konstantin Meyl

Broadcasting of the Gods



Constantine the Great gets the secrets of the ancient transmitter and receiver technology by his teacher Lactantius, Nicomedia, 304 AD

historical science fiction

Broadcasting of the Gods

historical science fiction

by

Prof. Dr. Konstantin Meyl

- Did God Apollo from Delphi broadcast with 5,4 MHz ?
- Have the Greek temple been transmitters for telegraphy ?
- Has a temple priest been amateur radio operator ?
- Has Homer been radio reporter on behalf of the Gods ?
- Have the oracle been receiver stations ?
- Did oracle interpreters translate the transmission code ?
- Which bridges the Pontifex Maximus has built ?

We are witness in 304 AD how the later Roman Emperor Constantine the Great is introduced by his teacher in the secret transmission technology of the gods. It is an exciting time of change, because the old telegraphy is obsolete. Instead voice radio should be introduced, which has been tested successfully by Emperor Hadrian in Rome. But a new dispute is in the offing: Is a wireless or a cellular telephone to be introduced? But those who transmit without license, are hunted like at all times and are fought.

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historical science fiction

Professor Dr.-Ing. Konstantin Meyl

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Preface

It concerns the oldest technology of mankind and one of the most adventurous and exciting chapter in world history.

Actually, this circumstance can only be satisfied by an adventure novel. However, the broadcast technology is also about science which is why a nonfiction book would be the right presentation. Ultimately, it is about the history and the roots of our culture which are described in a history book.

The current book should be all together and also still a science fiction novel while looking to the future from the past with the nowadays knowledge of the reader about the habitual broadcast technology.

This is particularly reflected by the use of modern technical terms to describe the secret knowledge of the ancient transmitter and receiver technology, e.g., short wave (SW) or medium wave (MW), amplitude modulation (AM) or frequency modulation (FM), wavelength or frequency.

We know exactly what is meant by the technical terms and through the lecturer in professional studies at the latest. The definition of terms is a prerequisite in order to be able to do science, and that has always been so. However, notations and connotations can change over

time and then it is a question of the translator whether he chooses the correct terms.

Just how can an archaeologist, who has learned Latin and Greek but does not have the slightest basic technical knowledge, translate a historical text on ancient broadcast technology properly? In principle, he can not have even understood it. Therefore, he speaks about oracles, mystery cult, augury of the earth and certifies the Romans a poor sense of time because their couriers could not just travel the long distances across the Roman Empire so fast.

In Latin texts, it always says,^{<1>} "They sent someone to the emperor in Rome and got the answer...!" Hard to believe that in a highly civilized society, such as the Roman, every time a courier started to run with sandals on the hard pavement of the Roman roads.^{P.1}

The texts leave also hardly any doubts that the answer of the emperor arrived immediately at the troops but at the latest already during the following night. As a result, the correct translation should be, "They phoned" or, "They telegraphed to the Emperor in Rome and got the answer...."

Admittedly, I feel entirely as an engineer and also look at the past from this perspective. Maybe it is a consolation for my critics that I am not a professional historian, and my own humble knowledge is enough for a novel. I also see that the purpose of the book is already satisfied if my suggestion should bear fruit to look at history from a different technical perspective.

However, if my imagination find recognition and entry in textbooks, must remain open. I will not be able to affect this personally in any way. Independently of the result, the judgment will be delivered by others.

I have written an own textbook to answer the technical questions related to the feasibility of transmitter and receiver technology in ancient times. About the German book series of "Electromagnetic Environmental Compatibility" appeared three parts. In the first part are the physical foundations laid, in the second part is the energy technology covered and in the third part the information technology aspect. Therefore, the third and last part leads inevitably to the use of broadcast technology. Also the second part provides important background information about the energy source of the ancient transmitters. The English version is called "Scalar waves".

According to this threepart textbook, the broadcast technology in the ancient world was not only possible, it also worked without any transistors, diodes and other electronic components. Nevertheless, it was still extremely powerful, amazingly well developed and optimized. No one would ever think today to use the waveguide technology in the known microwave range, for example, in satellite receiving equipment, also in the shortwave range. Therefore, this technology is used at high frequencies because of the better efficiency which really matters!

According to the half of the wavelength with waveguide in shortwave range, a huge dimensions of up to 50 meters is needed, but the engineers in the ancient world did not stop to put appropriate buildings into the landscape. Finally, they wanted to get the most out of the broadcasting station which only the cavity resonator enables.

However, we let an antique teacher speak who actually must know it.

INDEL-publishing department
Professor Dr.-Ing. Konstantin Meyl
Villingen-Schwenningen in December 2000

Note on preface:

P.1: E. Horst: Konstantin der Große, Eine Biographie, Classen Verl. 1985, Düsseldorf, 2nd ed., p. 89:

"Today, we are spoiled by direct communication of news ... forget too easily the distance generating period of transport of messages by horseback couriers. How much time passed until a message reached from Eboracum, northern English York, to the imperial court in Sirmium in what is today the Serbian Sremska Mitrovica? Furthermore, how much time passed until the response of Galerius reached Constantine over the reverse route?

The time measurement is particularly complicated because the ancient reporter require a different sense of time. They described important events, listed in sequence and skipped weeks and months in the sequence of events...."

(typical example of historical misinterpretation).

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Introduction

We dive deep into the history in the year 304 AD. In Asia Minor at that time, a Roman imperial palace is located in the town of Nicomedia. From here, the Roman emperor Diocletian ruled the east of the empire. He is in constant telegraphic communication with his three co-emperors and Caesars in the other parts of the Roman Empire. One of them is Constantius Chlorus who ruled from Trier and York the north and the west. His son still lives with his mother in the Palace of Diocletian in Nicomedia (in the Turkish Izmit today) to give him a proper education. It is the young Constantine and later Roman emperor who is called the Great.

His teacher and later advisor is the wise Lactantius. He is responsible for questions concerning the cult of the gods, and he exerts a noticeable formative influence on his students. The later exploits of the Emperor Constantine, e.g., the agreement of the Roman Empire, the introduction of Christianity and the sanctification of Sunday are probably affected by Lactantius in the same way as the necessary decision for the broadcast technology to want to conquer the Far East with its shrines. The decision probably costs the life of the emperor because the army is already in place as an infection killed Constantine. Similarly, Caesar was murdered just three days before his departure to the East!

The Asian region seems to influence the Roman Empire, and even the emperors can not escape the impact.

Supposedly, it should be a cult of the gods against which they are defenseless, but still many questions remain unanswered.

Constantine the Great is the successor of Alexander the Great in the effort to organize the new East like Caesar. Accordingly, the teacher Lactantius acts also in the tradition of Aristotle. What was the perception of the famous Aristotle for the reorganization of the pantheon? Furthermore, what new technology did he want to implement? Why his student Alexander had to penetrate to the Indus for this purpose and subdue all the people of the East?

We have to assume that Lactantius knows the answers and explains the motives to his student. Let us assume that he granted Constantine individual lessons and introduces him to the sacred broadcast technology of the ancient times which is his task in his role as divine teacher towards his students.

I choose a free rendering because we do not know the words that Lactantius has chosen nor their former importance. My concern is more about the meaning of the lessons that Lactantius teaches his student. In this book, the reader may be secretly involved and listen unnoticed when the eminent teacher Lactantius speaks to his student Constantine and teaches him the secret knowledge of the broadcast technology of the gods.

Lesson 1

Socrates and the Secret Knowledge of Gods

As you have heard, my dear Constantine, from now on, I am one of your divine teachers.^{1.1} This honorable task is fallen to me as your teacher. I shall give you divine assistance just like the others who you have got to know. We were very pleased with your performance at our last meeting. We are convinced that you will follow in the footsteps of your father someday to be Roman Emperor yourself.

If you now think about why you had needed to take all oaths in front of Jupiter and the other gods, you will understand this better with each new lesson. Representatively for the other divine teachers, I have got the task to teach you the secret knowledge of gods and priests as your intimate teacher.

Please do not believe now that I am a god or godlike. I am merely informed as divine teacher over all the details. It is about a big secret, the oldest technology of mankind, and there are only a few who know the functionality. Believe me, this is a good thing, too!

Just imagine that the whole humanity would like to use some technique, such as the broadcast technology, to talk mindlessly with some friends over long distances just because they are too lazy to visit the friend. The result would be only chaos in the ether and a terrible burden for humans and animals by annoying interference. Any technical use pollutes our environment. Therefore, it is good if only a few possess

the knowledge of the technology, its application and the right for the practical use. We owe the success and the survival of this technology over a thousand years only by this circumstance.

In addition, knowledge is power. If we give the power of a technology to all the people, there are always those who abuse this power. We must expect that any technology which has fallen into the wrong hands is sooner or later addressed against ourselves. Therefore, we do not become victims of our own technology if we keep the number of confidants small and strictly ensure that no talks and no document is written. I want to give you two examples.

There have always been keen observers and clever scholars who have uncovered the secrets of our sacred transmitters. Of course, such disasters happen and are also unavoidable. Normally, the affected people will promise secrecy to the chief priests to maintain absolute confidentiality and integrate their knowledge accordingly as functionaries in the system to remain in the service of the gods.

For example, Socrates was a particularly difficult case. We had to destroy his writings immediately. Therefore, Socrates has decided to draft no more writings. He has gathered the youth around him and recited to them his findings about our secret knowledge without the required divine order. For this reason, he is publicly charged with the seduction of the youth.

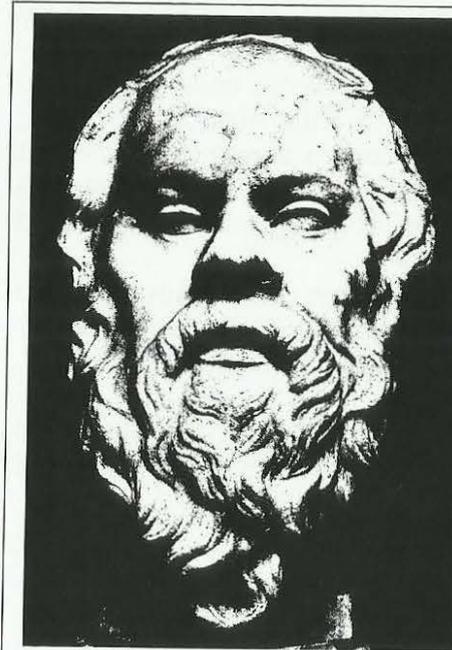


Fig. 1.1: Socrates^{1,2}

Socrates had to take the cup of poison to prevent further uncontrollable proliferation and to warn his students. He has taught ethically correct action, but I ask you, do you think that also the students of his students and even their students would have had the high expectations of Socrates to equate knowledge with virtue?

One single black sheep could bring danger to our defense strategy for the secret knowledge,

the belief in gods and in the end also our whole world order.

The college of priests have sentenced Socrates to death and charged him that he has allegedly introduced new gods in addition. Unfortunately, I can not explain this to you at this point because more lessons would be necessary to understand it. I may take you up on it some time if you remind me, please.

Another example is the well-known seer Tiresias from the story of the Oedipus who had lost his eyes at the age of seven years because he had looked into the world of

the gods^{1,3} and had betrayed the secrets of the gods as far as we know from the stories.

Your question why a blind man can be called a seer is certainly valid. We will need to talk also about what signals have the many famous seers received in ancient times. It is reported to us anyway that they knew the deepest secrets of nature, the language of the birds and usually operated its own oracle.

The oracle of the seer Tiresias was in Orchomenus in Boeotia. The artists tended to portray him with a scepter in his hand in the portraits which we have about him.

I would like to give another example for the comprehensive obligation of secrecy from our Roman history in my next lesson.

References and notes on lesson 1:

- 1.1: E.Horst: Konstantin der Große, Eine Biographie, Classen Verl. 1985, Düsseldorf, 2nd ed., p. 39
- 1.2: K. Schefold: Die Griechen und ihre Nachbarn, Propyläen Verl. Berlin, Bildnis 109, Bildniskopf des Sokrates, um 340 v.Chr. römische Kopie, Rom.
- 1.3: Otto Seemann: Die Götter und Heroen der Griechen, (1869), Fourier Verl. Wiesbaden 1989, p. 363

Lesson 2

Augustus and the Office of the Pontifex Maximus

I am convinced, dear Constantine, that you will be Roman Emperor at once, and then you accept automatically the office of the high priest. Thereby you outrank the whole college of priests and are allowed to call yourself Pontifex Maximus which means something like "supreme bridgebuilder".^{2,1} Apparently, there are some people who believe that this title has something to do with the fact that we have built so many bridges over any rivers in our great empire. I assure you that this has absolutely nothing to do with it. Nevertheless, we should not take the faith of the people away. Finally, we must not tell them what kind of bridge it really is!

The bridges for which you are responsible as the Pontifex Maximus have a technical nature for broadcasting. You will establish the wireless connections as the supreme broadcast engineer between a temple as a broadcasting station and an oracle or just an altar as a receiving station.

However, what is between the transmitter and the receiver? Your question was to be expected. It is the ether which connects both together. Just take the air we breathe, and imagine a carrier pigeon who carry a message from one place to another through the air. It works only much faster as fast as the speed of light. I admit that it is not easy to understand, but I will try to explain everything exactly.

Initially, I want to tell what happened in the Ancient Rome. The consuls of Rome were originally no broadcast engineers. They were purely secular leader and had no place in the college of priests. Their chance to be included in this chosen council was approximately equal to zero. Every priest knew about the dangers that would result from a combination of the secular and the divine powers in a personal union. Therefore, the priesthood stuck together, offered their services to the government and were rewarded handsomely for their information.

You must take into account that the broadcasting system is a brutal business, an economic factor and even a power factor. Who would want to hold all the power in the Roman Empire, also had to master the broadcasting system and to lead the priesthood. Therefore, many people have strived it, but only Caesar and Augustus were successful. The last one was the first Roman Emperor and Pontifex Maximus at the same time. Unlike you, he had no technically trained teacher who could exactly explain everything to him.

On the other hand, only those have been included in the college of priests who know it. Augustus had to get into the possession of this secret knowledge. For this purpose, he hired some workmen and scholars to collect all their knowledge and to submit it to him. Of course, the priesthood are not allowed to know about it. Otherwise, the lives of these men would have been in danger.

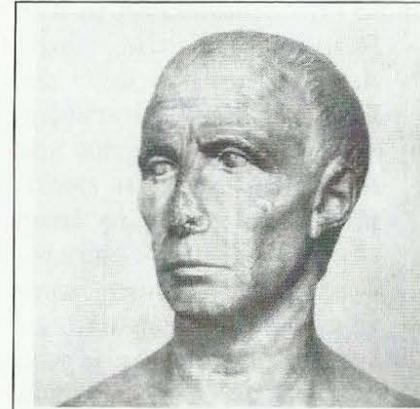


Fig. 2.1: Julius Caesar^{2.2}

Much preliminary work had been done by the writer and the scholar Varro. He was particularly committed to Caesar because he had been personally pardoned by Caesar after the Battle of Pharsalus.

This particular fact has certainly contributed that the outstanding scholar has put his enormous wealth of knowledge into the service of Caesar. Nevertheless, Caesar was not able to implement this knowledge. He was murdered shortly before. Perhaps it is no coincidence that Varro had been outlawed by Antony after the assassination of Caesar and could barely escape his execution. We do not know.

We must assume that Cleopatra was an bearer of the secret knowledge, and that she has had a finger in every pie. She even sat on the Egyptian throne of pharaohs and was worshiped as a goddess. Actually, it was logical that the efforts of Caesar and Antony were a hopeless task to get the old secret knowledge by using a relationship with this dame. In fact, they were completely at the mercy of Cleopatra. She let all feel who is the bearer of secrets and has the power over whom with it. Even from Egypt, she could influence the events in Rome at any time via radio technology, and as a goddess, she probably order that a disliked person, who perhaps knew too much, is beheaded.

Augustus was the new hope if he should succeed to free

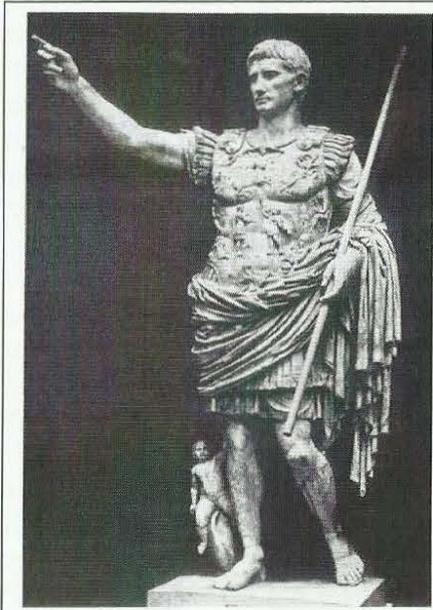


Fig. 2.2: Emperor Augustus^{2.3}

Rome from the radio dependency of the Egyptian pharaohs. Therefore, Augustus has requested written documents in order to keep them under wraps. Additionally, there were the scrolls which he inherited as an adopted son of Caesar. He established his expertise in all aspects of the secret knowledge with it. A drawerful of these documents could prove to the priesthood and the augurs that he is one of them, and they would include him into their ranks.

Augustus was actually successful with this calculation. For example, a very important document has the Roman architect Vitruvius delivered to him. He has not only described exactly where and how to build temples as transmitters but also taken approaches to explain how it works. He writes in the 1st book in Chapter 6: "You can reproduce the truth of the divine workings in regard to the hidden laws of atmospheric phenomena by artfully contrived instruments." However, the text interrupts just at the point at which he becomes more precisely: "So you can gain the knowledge and the judgment of the

great and immeasurable causes of celestial phenomena and winds from a small and very short sight...."^{2.4}

Unfortunately, what you need to realize is that Augustus has ripped out all passages and collected chapters and essays which related to the secret knowledge in order to make it clear to the augurs that he is also a bearer of the secret knowledge now. Subsequently, Augustus acceded the role of the Pontifex Maximus and was consistently worshiped as a god whether he liked it or not.

Vitruvius has been rewarded for his faithful service. Augustus made him to a very rich man who lived with a new identity under the name Mamurra in a luxury villa on the Caelian Hill.^{2.5}

References and notes on lesson 2:

- 2.1: E. Horst: Konstantin der Große, Eine Biographie, Classen Verl. 1985, Düsseldorf, 2nd ed., p. 17
- 2.2: W. Andreas (Herausg.) Band 1, Propyläen Verl. Berlin, Marmorbüste um 45 v.Chr. des G. Julius Caesar
- 2.3: W. Andreas (Herausg.) Band 1, Propyläen Verl. Berlin, Marmorstatue um 17 v.Chr. des Augustus, Vatikan
- 2.4: Vitruv (Marcus Vitruvius Pollio): Zehn Bücher über Architektur, Übers. von Dr.K.Fensterbusch, Wissenschaftl. Buchges. Darmstadt 1987, 4th ed., p. 61
- 2.5: and Vitruv, page 1 and page 3.

Lesson 3Nero and the Secret Documents
for Broadcast Technology

Do not believe that any participants in the technology of the transmitter and the receiver possess also the whole secret knowledge at the same time. Most priests know only as much as they need to perform their necessary duties. For instance, a temple priest who should broadcast a received ciphertext is not necessarily familiar with the contents of the text or the code. Certainly, the same holds true for the working sacrificers in the receiving station. For example, the Vestals have to show the received text to the augurs who supervise and control them. This specialization is appropriate and it protects the insiders.

However, who wants to introduce a new god in our pantheon and maybe even wants to be worshiped as a god himself, must really know everything and equally dominate the technology of the transmitter and the receiver. The pharaoh in ancient Egypt had to prove that he still mastered the technology at least once a year. Otherwise, he was replaced and it was at the same time also his death sentence as a bearer of the secret knowledge. Although this was hard but a quite successful custom.

As already mentioned, Augustus has received it in writing and has kept the papyrus scrolls into his palace under wraps. As an outward sign, he has built a forum in the heart of Rome that is based on an Egyptian model to make clear for the people who is the absolute ruler in

the ether now. His successors have retained this custom. They were also worshiped by the Romans as a god.

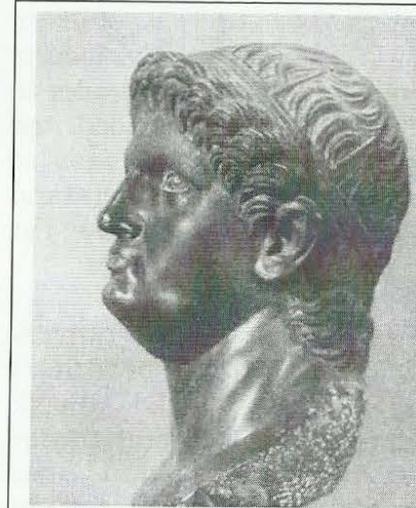


Fig. 3.1: Emperor Nero with the radiant crown, Uffizi^{3.1}

In the time of the regency of the Emperor Nero was the terrible fire of Rome in the year 64. It has been said to us only as a rumor that the augurs had placed the order to get the secret documents in the imperial palace and to burn the leftovers. Since you did not know all the hiding spots you had to incinerate the private apartments of the Emperor at least.

Accidentally, the fire got out of control with the known devastating effect on the city. Even Nero himself was a suspected arsonist because the fire came from the palace. Such targeted misinformation spread extremely rapidly in Rome while no one seems to care about the truth. There were also no differences at that time, and so they still believe in the same rumors.

A god can not be discharged. Therefore, the Roman emperors reigned absolute before Nero. The loss of the documents put an end to this claim to power. Without adequate technical knowledge, Emperor Nero was suddenly vulnerable, could be deposed and even driven to suicide by the Roman Senate. Of course, he was

aware that he had to die anyway as the last bearer of the knowledge.

You have to know that such a great empire like the Roman Empire is only governable by an efficient communication. The expression was coined by Cicero: "We have conquered the peoples of the earth thanks to our broadcast technology...!"^{3.2} He has described the term broadcast technology with piety and godliness so that his technically illiterate listeners can understand him better. Although not all were able to follow the words of Cicero, but he was right in any case.

Just look at the enormous expansion of our current empire which stretches from the Nile to the Hadrian's Wall in Britain and from the Black Sea to the Atlantic coast. The real backbone of the imperial administration are the numerous military transmitters. You often witnessed that our Emperor Diocletian bows over the altar in front of his temple.^{3.3} If he reads the important information from the rhythm of the contractions of the intestines of freshly slaughtered animals and sends already only a short time later its orders back to command the troops through the ether, you have to acknowledge that this fascinating technology ensures an unattainable superiority for us Romans.

You are certainly right that the slaughter of animals leads to a terrible massacre, but such human feelings count for little at military installations. It is all about a reliable and failsafe data transmission.

You have seen it already that our Emperor Diocletian rails against Christians.^{3.4} He claims that they would constantly interfere his transmissions. He can not know

exactly who bothers his radio communication in reality. Eventually, we have no direction finder with which we could track the culprit. I am of the opinion that he makes his life perhaps too simplistic because he always

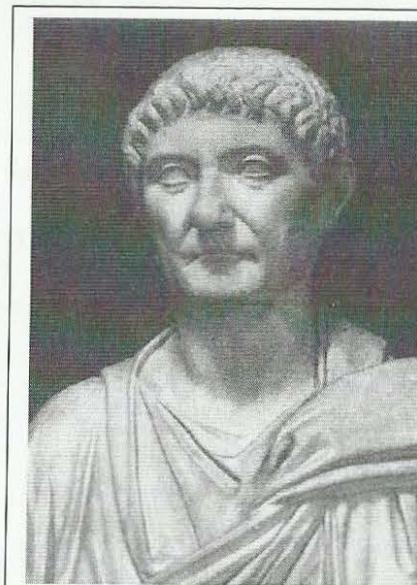


Fig. 3.2: Diocletian^{3.6}

blame the Christians if he is disturbed during his important conversations with his co-emperors. Diocletian has asked the gods and the oracle of Miletus for advice which only intensify the enmity against the Christians.^{3.5} They are seen as a troublesome competition. Since then, it is rumored that the Christians would operate broadband local stations.

The only problem of our technicians is truly that they do not even know where they get so many animals for slaughter sometimes. I already know how we could improve this situation. Aristotle originated the idea. His student Alexander the Great has tried to put it into action. The signs are very good today, and I firmly believe that you can enforce the ideas of Aristotle with a new start.

Very loosely speaking, it is the transmission of spoken words. It is like someone speaks to you over many hundreds of kilometers. You must admit that this is a fantastic idea. A technology that works without the

ghastly slaughter of innocent animals. This is an entirely new religion for all the people! The telegraph signals are completely incomprehensible to most people. However, they understand the spoken word. They can hear the angels sing and receive the word of the particular god directly and immediately.

I see that you like the idea. However, it will be very difficult to implement this technology and to enforce this revolutionary idea through the entire Empire. All technical problems have also not yet been solved. Our experimental transmitter in Rome is already working to our full satisfaction, and that is for sure. I will speak about it soon anyway. It is a personally matter because Aristotle is my secret idol.

References and notes on lesson 3:

- 3.1: W. Andreas (Herausg.) Band 1, Propyläen Verl. Berlin, page 348, Kaiser Nero, Basalt, Florenz, Uffizien
- 3.2: E. Horst: Konstantin der Große, Eine Biographie, Classen Verl. 1985, Düsseldorf, 2nd ed., page 33
- 3.3: another citation from the book, page 65
- 3.4: another citation from the book, page 67
- 3.5: another citation from the book, page 66
- 3.6: W. Andreas (Herausg.) Propyläen Verl. Berlin, p. 359 Diokletian, Marmorbüste, Kapitolisches Museum Rom

Lesson 4

The Gods and Their Representatives,
the Technicians on Duty

Many eulogists like to use on festive occasions the usual speech, "You seemed to have flown here not by mail but by a vehicle of the gods."^{4.1}

This image is intended to say, "You were as fast as a broadcasting wave." The sender are called gods. They are always in communication to the broadcasting station. Therefore, each temple is dedicated to a god. A transmitter is operated by a temple priest who is the technician on duty. Naturally, he is mortal and can be replaced. This is why his name is not important. If he broadcast, he does not announce his name but the name of the immortal god. Strictly speaking, the technician on duty is merely the representative of a god on earth. The vanity of the people has always meant that this circumstance was disregarded, and the technicians signified himself as the god for whom they were actually only responsible.

An example of this bad custom is Emperor Augustus and especially the later emperors who allowed others to worship them as a god. If you once will be Roman Emperor, so you should refrain to allow others to worship you as a god. It would only bring a disaster; take it from me as your experienced teacher.

The population and even some specialized priests for subordinate tasks know nothing specific about the connection between the technician on duty and his

representation of his god. They also should know nothing about it because it would not be good for the belief in their god. However, this circumstance has led to really funny and witty episodes in the traditional Greek sagas and stories.

Do you know the story which is told about the city Pedasos next to Halicarnassus? "If some misfortune threatens the local residents of the city, the priestess of Athena grows a long beard. This has actually happened twice."^{4.2} It is quite natural that the priestess has got into safety out of fear and passed the official business to a bearded man. Funny is just the thought that a man had to masquerade himself as the goddess Athena when he broadcasted. It came to his aid that you could not distinguish in the receiving stations whether the person on duty was actually a man or a woman anyway.

According to the stories of Herodotus,^{4.3} it has already happened in Athens that the goddess has left the Acropolis for fear of the Persian army. You could describe the state as godless and thereby as very understandable.

It is even more personal in Greek mythology. According to the stories of Homer, the Greek gods are supposed to have been a family clan. Although the family members are considered to be gods as omniscient and omnipotent, they are entirely of human nature with their passions, concerns and moral weaknesses. The recognizable contradiction in their double lives seems to be a result of the total fusion of official duties and private lives of the persons on duty.

Such fusion is normal for individuals who are the focus of public interest. The media has shown at all times a particular fondness for the private lives of important personalities, and Homer was always a welcome and very successful broadcaster. His audience was thrilled when he was able to report disputes of the gods and the family quarrel.



Fig. 4.1: Homer^{4.4}

You can see it for yourself, the more larger and significant a ruling family, the more fuel they supply to the media and the curious public. The family dispute of the Greek gods resulted even in a war of the gods. The members of the warring family of gods stood face to face in the Trojan War and inflicted painful wounds, despite their immortality.

Even the god of war Ares went whining to his father Zeus and showed him the dripping blood from a wound. Therefore, he sent his son to Paeon who is the physician of the gods^{4.5}—the family physician as we would say today.

The wound of the god of war was inflicted by a spear of Diomedes on order of Pallas Athena who had Zeus also as a father. However, you have to know that it was

rather the exception if the gods personally took part in combat.

Usually they just watched and let the "mortal" mercenaries do the bloody business. For example, Phoebus refused the fight because he would not fight his own uncle Poseidon in the role of Apollo and preferred to endure the ridicule of his sister Artemis.^{4,6}

The journalistic prepared, published and handed down conflicts between the gods on duty has always been about broadcasting licenses today. It was about the stipulation of broadcasting hours, transmission codes and transmitting frequencies.

We still need to discuss these three problem areas more precisely one by one because it will be of particular importance especially for you. Nowadays, you have to know that only the Pontifex Maximus is authorized to issue broadcasting licenses. Therefore, there can be no war of the gods anymore today.

References and notes on lesson 4:

- 4.1: E. Horst: Konstantin der Große, Eine Biographie, Classen Verl. 1985, Düsseldorf, 2nd ed., p. 85
- 4.2: Herodot: Historien, Kröner Verl. 1971, Stuttgart, 4th ed., Taschenausgabe Band 224, Übers.v. Horneffer, p. 564
- 4.3: again Herodot: Historien, p. 540
- 4.4: W. Andreas (Herausg.) Band 1, Propyläen Verl. Berlin, page 192, Homer, Boston Museum
- 4.5: Gustav Schwab: Sagen des klassischen Altertums, Ueberreuter, Wien 1974, p. 283
- 4.6: again Sagen des klassischen Altertums, p. 338

Lesson 5

The Wavelengths of the Sanctuaries of the Apollo and the Artemis

Today's lesson is about the allocation of broadcasting frequencies and their wavelengths. Finally, the lesson has to do with the spatial dimensions of the cella which is the innermost sanctuary of a temple.

Perhaps you have noticed that every broadcast station owned multiple broadcasting frequencies in many cases, or simply put, you can say it like this: several temples are often dedicated for each god. Every single temple oscillates at a certain frequency. This allocated band has been assigned to him usually before construction begins because it determines the shape and the size.

We take the view that all frequencies are given by nature. They are only managed and distributed by us humans. Therefore, they are the real reason for the immortality of the gods.

For example, an urban community decides to worship a different god, so the temple also must be rebuilt, or a new one is built next to the old one. Therefore, several differently sized temples are located often side by side in a temple district today. If all the temples are still functioning, it means that several gods are worshiped there at the same time, or a god claims several frequencies.

For example, we consider the group of temples of the Sanctuary of Apollon on the Greek island of Delos. Two temples are located there side by side. On the one hand,

the first temple of Apollo is constructed with the very simple design from the mid-6th century BC as an antae temple which has worked at a frequency of 15 Mhz.

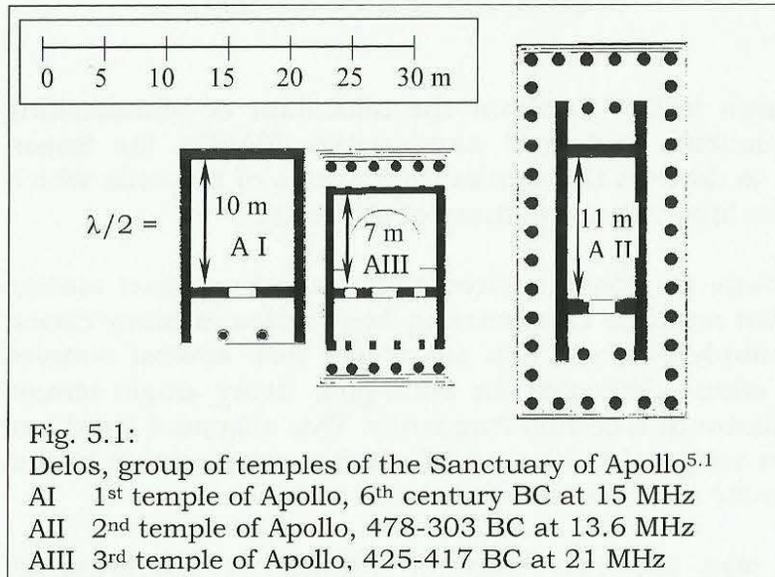


Fig. 5.1:
Delos, group of temples of the Sanctuary of Apollo^{5.1}
A I 1st temple of Apollo, 6th century BC at 15 MHz
A II 2nd temple of Apollo, 478-303 BC at 13.6 MHz
A III 3rd temple of Apollo, 425-417 BC at 21 MHz

On the other hand, the second temple of Apollo is built as a Peripteros at 13.6 MHz and the third temple of Apollo at 21 MHz between them. The Apollo of the Naxians was heard at 8 MHz. From the 2nd millennium BC comes the tiny Cycladic temple with a transmission frequency of 25 MHz which was only usable in the near field for communication from one island to another. The smaller a temple and the higher its frequency is, the less terrestrial radiation can be used as excitation power, and its transmit power is correspondingly lower.

A particular curiosity is the experimental station which is built by the Athenians on Delos and is referred to as the Hall of the Bulls. This temple is dedicated to no

specific god because its frequency is variable and a sort of adjustable. You have to imagine the cella as a 50 meter long tube. We call that a cavity resonator as technicians. The length of the cella determines the frequency, and the same applies for all the temples. As usual, the mostly iron and holy barrier in the Hall of the Bulls can be moved. As a result, on behalf of various gods can be sent. It was mostly only used to disrupt unpopular broadcasting stations specifically. In this way, it was possible to weaken the influence of foreign deities.

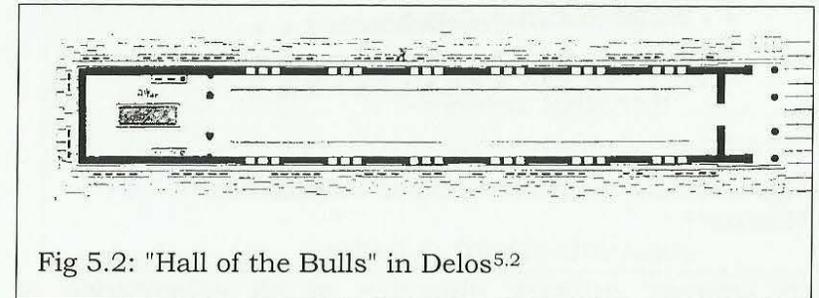
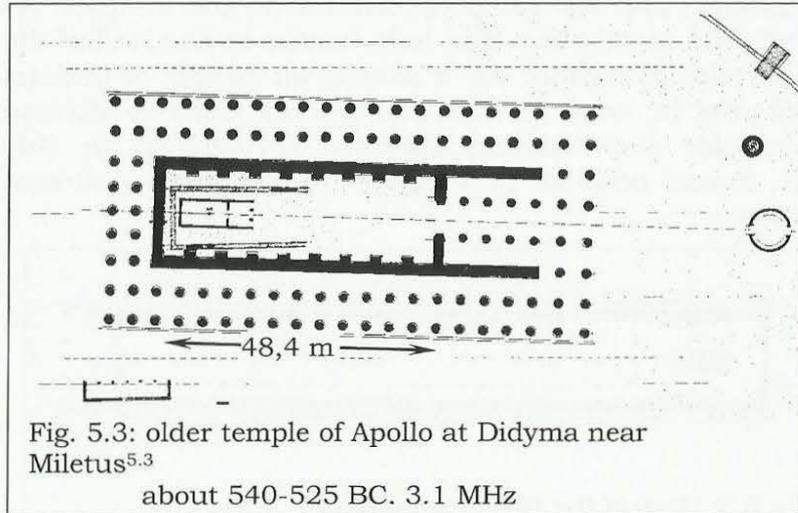


Fig 5.2: "Hall of the Bulls" in Delos^{5.2}

The experimental station did not have to be built longer than 50 meters because a transmitter, as far as we know, does not exist with a frequency lower than 3 MHz. The ancient Greeks had to compile first that the technical characteristics of wave propagation deteriorate further from this limit which was very expensive and has given us numerous unfinished buildings.

For example, such a limited power transmitter was the older temple of Apollo at Didyma near Miletus. The transmit frequency of 3.1 MHz was very close to the limit of 3 MHz without the operator at that time could have known how close it was and that such a limit in the transition from shortwave to medium wave

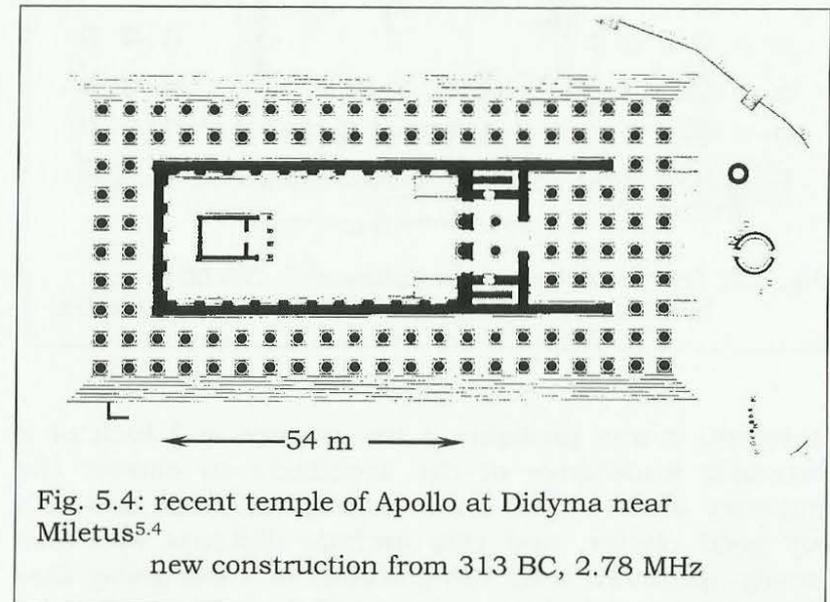
frequencies even exists. It is certain that the inhabitants of Miletus were proud of their technical marvel because they were able to demonstrate technical superiority with it.



The primary military objective of all adversaries of Miletus was the destruction of the temple because of its great performance. When the ionic revolt against the Persians had collapsed, the destroyed sanctuary had to be rebuilt again. The new temple of Apollo should be even bigger and gorgeous than the old one, and so they first chose the unfavorable medium wave frequency of 2.78 MHz. This fact was probably the real reason for the sad fate of this mammoth building.

Once the constructors had learned that their transmitter was designed too large, they and especially the investors and principals have immediately stopped all construction. It was not until 163 years later after the current research results were known from Agrigento in Sicily that Alexander the Great had receive a favorable

verdict from the competent god Apollo. The approval to continue the construction with its 120 pillars was linked to structural changes. The frequency should be increased to 3.2 MHz by separating the cella. The conversion was certainly not a very good compromise. As a bitter but logical consequence, the construction remained unfinished to this day, although the construction project was even promoted by some Roman emperors such as Hadrian who had even taken over an office of a prophet for this purpose.^{5.3} You are bound to have heard that the Romans prefer the pseudodipteros which requires fewer columns and thus is much cheaper.



Another limited power transmitter to compete was the Temple of Artemis in Ephesus which was designed at

3.3 MHz. The construction was started too early as well and thus no one would be able to pay attention on the cutoff frequency which was fateful for many other plants. Furthermore, according to Pliny, they had spent 120 years for the completion to shadow also the exciting developments of the competitors constantly.

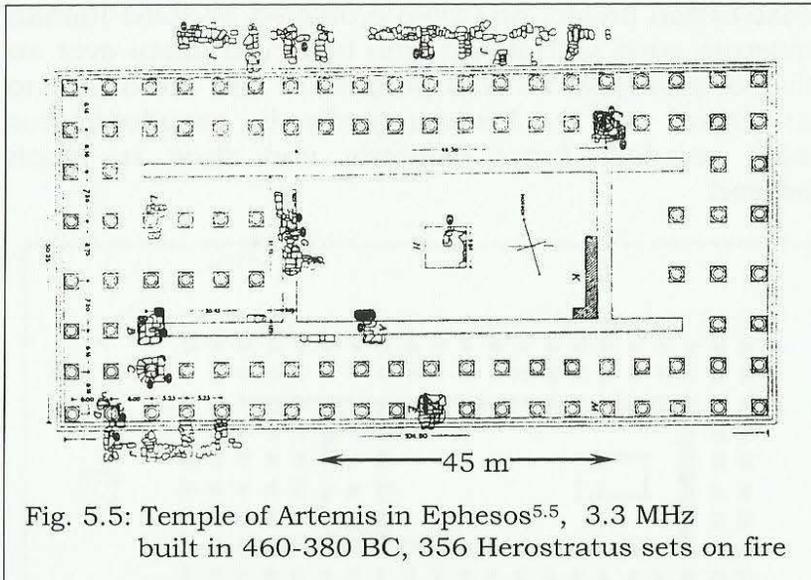


Fig. 5.5: Temple of Artemis in Ephesos^{5.5}, 3.3 MHz
built in 460-380 BC, 356 Herostratus sets on fire

Therefore, it was probably a coincidence and luck or a particular knowledge of the architects to choose the frequency at 3.3 MHz. As it later transpired, it was a very good choice, and this archaic dipteros was also already optimized with 106 columns in such a way that other temples only had a chance if their frequency was lower and at the same time not less than 3 MHz. Not much fitted really here in between.

When the Temple of Artemis in Ephesus has been designated as a world wonder, there are convincing reasons for it which I deduce soon in detail to you. You will not find the reasons in Ephesus where the success has been achieved but on the abandoned construction sites in Didyma, on Samos or in Athens. The ruins of technical misplannings are everywhere. Just look at them; you can only learn from the mistakes.

References and notes on lesson 5:

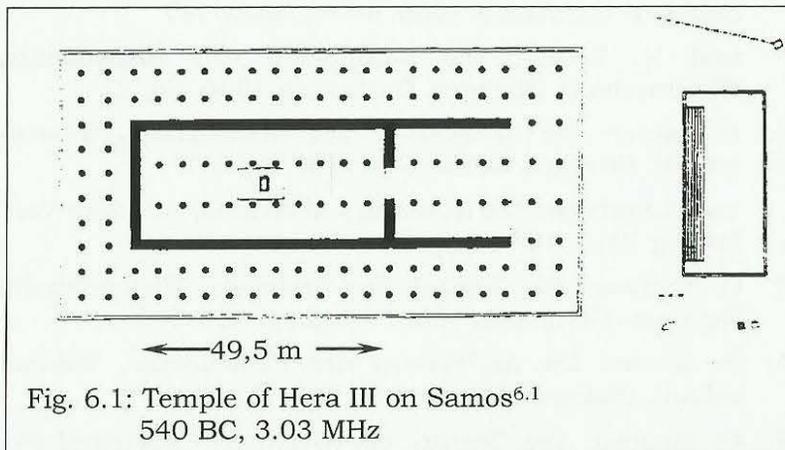
- 5.1: G. Gruben: Die Tempel der Griechen, Wissenschaftl. Buchges. Darmstadt 1986, 4th ed., page 147
und H. Lauter: Die Architektur des Hellenismus, Wissenschaftl. Buchges. Darmstadt 1986, fig. 21
- 5.2: H. Lauter: Die Architektur des Hellenismus, Wissenschaftl. Buchges. Darmstadt 1986, fig. 67b
und A. Springer: Die Kunst des Altertums, A. Kröner Verl. Leipzig 1915, 10th ed., p. 354
- 5.3 G. Gruben: Die Tempel der Griechen, Wissenschaftl. Buchges. Darmstadt 1986, 4th ed., p. 364-366
- 5.4: H. Lauter: Die Architektur des Hellenismus, Wissenschaftl. Buchges. Darmstadt 1986, fig. 61
- 5.5 G. Gruben: Die Tempel der Griechen, Wissenschaftl. Buchges. Darmstadt 1986, 4th ed., p. 353

Lesson 6

The Heraion (Temple of Hera) as Model for a Limited Power Transmitter

Believe me, dear Constantine, it was really one of the most exciting chapters in the history of broadcasting as we technicians found out in countless experiments that the short-wave range above 3 megahertz prevails much more favorable conditions in respect of the wave propagation than below of it in the range of the medium wave.

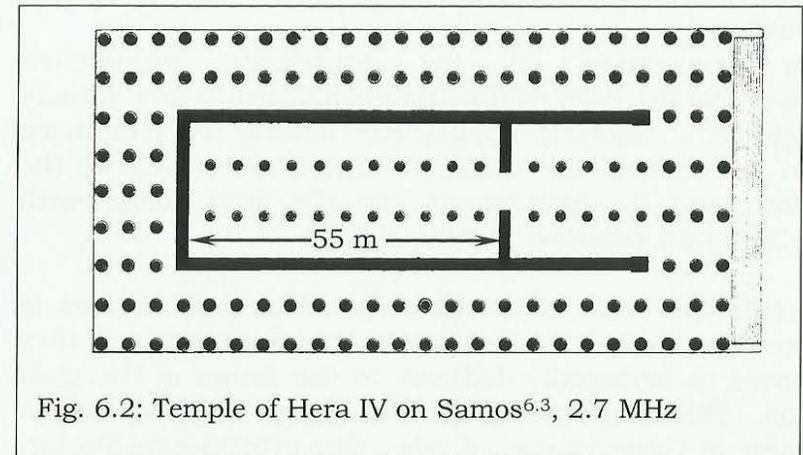
The model for all limited power transmitters was the Temple of Hera on Samos. Hera I and Hera II were still at 4.9 MHz and above. Hera III, a dipteros with 134 columns, had broke new technical ground and was also very successful with its 3.03 MHz as expected. It was probably the most powerful short-wave transmitter in its time (540 BC)!



Therefore, it is absolutely no coincidence that the Milesians began to build their Didymaion in the same year of the successful commissioning of the Heraion. The small island of Samos was the hub of the world among the technicians for a short time. All came and were astonished about the technical achievement.

Unfortunately, the envious have also been lured to the peaceful island. Therefore, the just completed temple in even partial timber construction was shortly destroyed again.^{6.2}

Polycrates came to power as the winner. He also began immediately with a new building which should exceed the wantonly destroyed one in splendor as well as in size. As a typical work of a tyrant, the temple of Hera IV was with 2.7 MHz too large, got too expensive with 155 columns and remained forever unfinished.



The fact that this gigantic makeshift was not completed is probably above all due to the unfavorable frequency. The goddess Hera has apparently used it in a test operation for a little while which has probably brought

the bitter realization. Apparently, they had left the short-wave range in ignorance and delusion of grandeur and had slipped into the range of the medium wave which no longer guarantees a reliable distant reception! As a result, the goddess Hera has moved out from the giant ruin certainly not without frustration as a comparatively modest dipteros with 17 columns had been constructed for her.^{6.4} This Temple of Hera V worked on a frequency of 15 MHz. It was surely enough for their "telephone calls" with other gods of an island in the Aegean Sea.

As we see, only one could win in the competition for the biggest and strongest transmitter, and that was the Artemision at Ephesus. The Didymaion of Miletus and the Heraion of Samos were useless. The list of limited power transmitters are not finished yet with the three mentioned.

The fascination of the previously unmatched transmission power of the Temple of Hera III has initially triggered a euphoric atmosphere among the technicals and just affects the world at that time as well as the subsequent disillusionment and the fatal failure with the new and enlarged Temple of Hera IV.

To ride the crest of a wave, the Athenians wanted to have also such a limited power transmitter which they wanted to personally dedicate to the father of the gods Zeus. This Olympieion is considered as the largest temple in Greece today. It owes this attribute to the fact that both the Heraion and the Didymaion had remained unfinished. Just why should the Athenians fare better than the priests of Samos or Miletus?

Initially, they suffered the same fate because their temple was simply too large. The temple was only completed to the stylobate as the Athenians expelled the tyrant Hippias and discontinued the building activities immediately (510 BC).

The four builders had made the same mistake and designed the Temple of Zeus at 2.8 MHz. They had also experienced that the noise level rises so much in the range of the medium wave that the useful signal is hardly to receive.

The work on the ruin of the Olympieion was continued not until 350 years later.^{6.5} Cossutius, a Roman architect, was commissioned by the Syrian king Antiochus IV to rebuild the dipteros in Corinthian order. Since he used the old foundations, he had to use a trick. He shortened the length of the cella to exactly the extent of the width and thus could increase the frequency to 4 MHz.

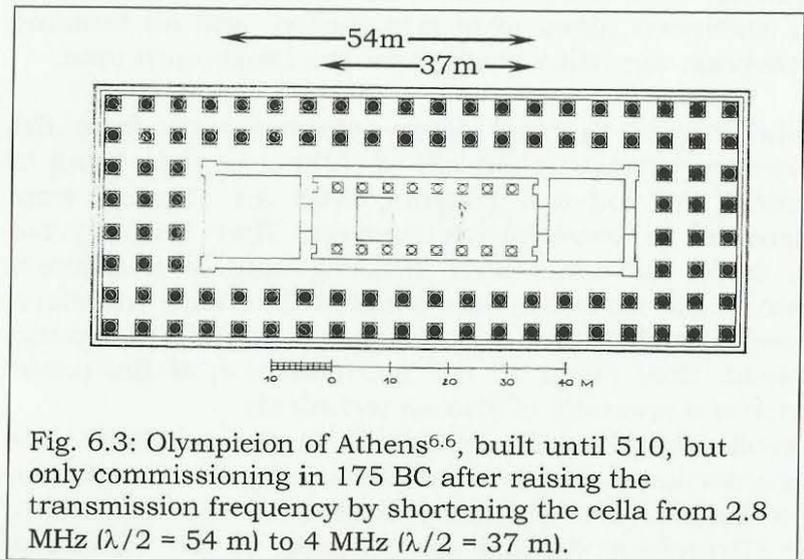


Fig. 6.3: Olympieion of Athens^{6.6}, built until 510, but only commissioning in 175 BC after raising the transmission frequency by shortening the cella from 2.8 MHz ($\lambda/2 = 54$ m) to 4 MHz ($\lambda/2 = 37$ m).

Since neither the width nor the height of the cella had been adapted to the new length ratios, the common harmonics were only emphasized. The Temple of Zeus was no longer a limited power transmitter simply because of the choice of the fundamental frequency. I would describe it as a "unrivaled catapult of harmonics." This corresponds exactly to the self-conception of the father of the gods Zeus who claims all frequencies for himself.

The Syrian king of the Seleucid Empire needed this temple in order to realize his ideas. He had the plan that the whole religious fragmented east would only worship the Olympian god Zeus who should also include the old gods Baal and Yahweh with each one harmonic.

He wanted to personally perform the tasks of the technician on duty as Zeus-Antiochus himself and to be worshipped as a god as his coins show us.^{6,7}

However, with the sudden death of the ruler (164 BC), his ambitious plans were also buried, and all building operations were discontinued for the umpteenth time.

Sulla ordered to carry some columns away from the abandoned construction site in Athens and to bring to Rome.^{6,7} As you can imagine, even the Romans were interested in powerful transmitters. They certainly did not build the same poor building only in a different place in the same way but broke the mold. Therefore, it was decided not to exhaust the cutoff frequency. Instead, they relied on the multiplication of the power which is a specialty of Roman technicals.

A good example is the Temple of Venus and Roma. The transmission power is doubled here by the installation of a double cella. However, Sulla used the columns of the Olympieion for the construction of the Temple of

Jupiter on the Capitol, and this guarantees a triplication of the transmission power with its three resonators! As you know already, this is right and proper for the god of all gods because the Roman Jupiter is no one other than Zeus.

Finally, the Roman Emperor Hadrian had completed the huge building of the Temple of Zeus in Athens in exact accordance with the plans of the Cossutius. Without him, his affection for Athens and his great interest in the technology of the Greeks, the Olympieion would have remained unfinished as well as the Heraion and the Didymaion.

References and notes on lesson 6:

from: G. Gruben: Die Tempel der Griechen, Wissenschaftliche Buchgesellschaft, Darmstadt 1986, 4th edition:

- 6.1: page 327 and 331 Heratempel III auf Samos, figure 278
- 6.2: page 333 citation
- 6.3: page 335 Heratempel IV auf Samos, figure 279
- 6.4: page 339 citation
- 6.5: page 232 citation
- 6.6: page 234 Olympieion von Athen, figure 188
- 6.7: page 233 citation

Lesson 7The Experimental Transmitter of Agrigento,
the Olympieion (Temple of Zeus)

As you can see, a large amount of technical knowledge about radio waves and their frequencies is necessary when it comes to building an optimal transmitter. Therefore, our priests have worked long to acquire all the knowledge that I can now pass on in my lessons to you personally.

The Temple of Artemis in Ephesus was probably the strongest transmitter of its time without the multiplication of the power which was only worshiped because of its size and splendor as a world wonder. Its recipe for success was the favorable selection of the frequency at the lower end of the short-wave range. Logically, all dimensions and thus the frequency have also been retained after the old Temple of Artemis was destroyed by sabotage. Herostratus had set the holy temple on fire. Therefore, the manufactured interior paneling of cedarwood, the coffered ceilings and the entire roof construction were completely burned out.(356 BC).

Perhaps you have wondered why they built and tinkered at the temple in Ephesus for entire 120 years, and thus this was four times as long as the Hera III on Samos and eight times as long as the older Didymaion of Miletus. Now, I think the general insecurity was the culprit that the new Sami building of the Hera IV had caused.

No builder would or could take the risk to realize a gigantic technical object which does not fulfill its function sufficiently afterwards. Not even the gods knew what to do, and the rulers collected their funds immediately. Eventually, they wanted a superior technology and no senseless prestige objects. The building activity has slowed or stopped on all four mentioned large construction sites. It is now about 800 years ago.

Accurate information and scientifically based insights of the gods were claimed to continue the expensive building. There was no certainty but only the vague suggestion that the size of the temple and thus the choice of the frequency could be the culprit for failure. The gods consulted with their builders and made a decision to create an experimental transmitter especially for the threshold. It should be built on Sicily where Theron planned the building of a monument for his victory over the Carthaginians. 25000 Carthaginian prisoners of war were available for him, and it is likely that some were among them who understood something about the construction of the temple.

Another reason for the choice of the location was the Greek colony of Selinunte on Sicily. The construction of a gigantic temple had done its own contribution to the unfinished building ruins here as well. After the completion of the adjacent and successful Temple of Athena (530 BC Temple F), the mammoth project had proceed by using the so-called laws of growth with doubling almost all dimensions such as width (50 m), length (110m) and height (30m). The race for the biggest and most powerful transmitter corresponded perfectly to

the spirit of the time, but it should end here in an illusion as a medium-wave transmitter.

Therefore, this project was also unfinished and all eyes turned now to Agrigento where the experiments with the different frequency and wavelength should provide the decisive answer. It should be consecrated to the god Zeus himself because of the adjustable frequency of the experimental transmitter.

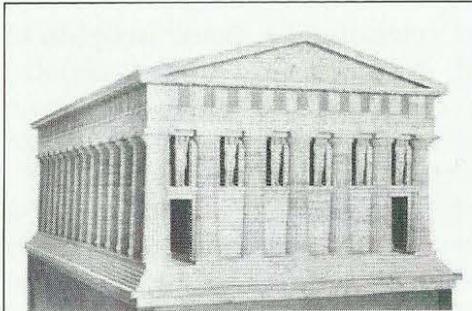


Fig. 7.1: Olympieion of Agrigento (Agragas) reconstruction, Museum of Agrigento^{7.2}

The Time pressed, and they immediately went to work and built the Olympieion of Agrigento (Temple B). To be sure, the stylobate for the overall dimensions was chosen from the previously successful measurements, and these were the Temple of Hera III on Samos.

The length of the cella could be moved from the inside in freely chosen fixed segments through iron railings, the holy barrier.

Four frequencies were particularly adjustable which were the two medium-wave frequencies at 2.3 MHz and 2.64 MHz as well as the short-wave frequencies at 3.09 MHz and 3.7 MHz. Higher and lower frequencies could also be generated in a pinch (up to 1.7 MHz). However, the interest is focused on the two central frequencies above and below the mark of 3 MHz.

It did not take long after the completion of the Olympieion in Agrigento, and the assumed cutoff frequency found a scientific confirmation by systematic research. The transmitter had a considerable transmitting power at 3.09 MHz in addition with which

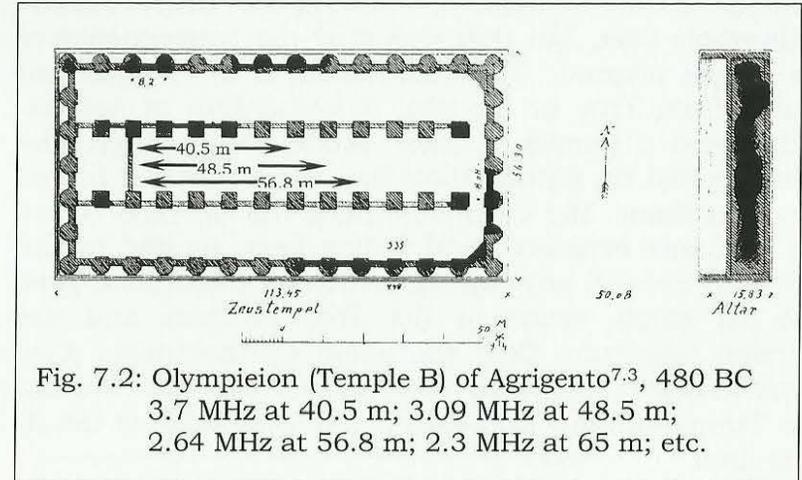


Fig. 7.2: Olympieion (Temple B) of Agrigento^{7.3}, 480 BC
3.7 MHz at 40.5 m; 3.09 MHz at 48.5 m;
2.64 MHz at 56.8 m; 2.3 MHz at 65 m; etc.

it could dominate over all existing facilities particularly in the western Mediterranean. The concern and the claim to power of the Carthaginians was directly affected here, and they immediately ended the activities of the Greeks and all other experiments by the conquest of the sanctuary and the destruction of the city. Agrigento was reconquered after a short time to just drop away to the Phoenicians again. 65 years later, the city was liberated again, repopulated and taken to new magnificence. Everyone, including the enemies of the Greeks, came in the possession of the research results because of the constant change of owners within a few years while each one undertook own trials and gained experience. The efforts were made to just quickly destroy the experimental facility before the temple was lost again to

the other side. According to the motto even at that time: knowledge is power, and there was also a severe fight for this objective.

Segesta had sown the seeds of discord on Sicily by an ominous shuttle diplomacy. It should cost the Athenians their whole fleet, but that was only the consequence of the temple dispute. The technicians of the temple had settled from Troy in Segesta, a foundation of Aeneas, and placed a temple in their familiar technology. The columns had no fluting, therefore, the water had flowed down on them. The cella was made out of wood where the roof was attached, and it has been limited to the technical needful anyway. Their financial situation gave also no ample scope to the Troy refugees and the Elymian residents. Only the allied Carthaginians gave them enough scope after their victory over the Greeks. The Temple of Zeus and with it the knowledge of the 3-

MHz-limit were transferred by capturing Agrigento to the Carthaginians who thus had also achieved their war objectives.

The Carthaginians quickly ground the temple precincts before the Greeks were able to recapture Agrigento and Selinunte. They expended special effort with the destruction of the gigantic buildings, the Temple of Zeus in Agrigento and the Temple of Apollo (Temple G) of Selinunte. You can find

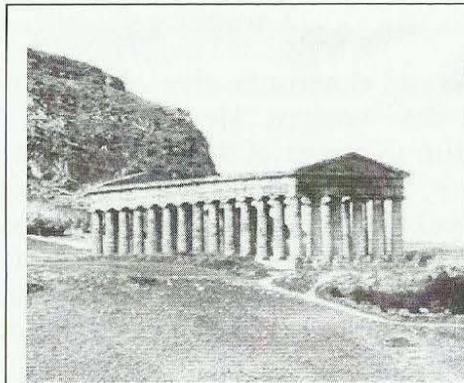


Fig. 7.3: Segesta^{7,4}, ca. 416 BC

at the places today only a heap of ruins which looks as if the giants threw stones around here.

Despite the chaos of war on Sicily and the struggle for the successful technology of the temple, important results have already been radioed by radio technology to the motherland and the other colonies 10 years after the reconquest (341 BC) by the Greeks with the result that the gods were able to give clear instructions for the construction of limited power transmitters. Negative assessments were issued for some sanctuaries. For example, in the oracle of Miletus was received a favorable verdict of god. Therefore, the plans for the younger Didymaion were changed to raise the frequency to 3.2 MHz, and the work on the building was resumed as I have already described.

However, the huge Temple of Zeus in Agrigento remained to continue the objective of desire. Next, the Romans captured the Olympieion, lost it again and conquered it definitively in the end. The so called sanctuaries of Agrigento with its technical facilities for broadcasting became a fateful question to the stricken city as hardly any other.

References and notes on lesson 7:

from: G. Gruben: Die Tempel der Griechen, Wissenschaftliche Buchgesellschaft Darmstadt 1986, 4th ed.

7.1: page 354 citation

7.2: page 306 Olympieion (Temple B) von Agrigent, fig. 247

7.3: page 307 Olympieion (Temple B) von Agrigent, fig. 248

7.4: page 316 Segesta, Tempel der Trojaflüchtlinge, fig. 253

Lesson 8

The Allocation of Transmission Channels

Truly, the ancient Greece has been perished by its own sophisticated broadcast technology. Let me put it like this: each technology can be improved until it eventually collapses.

Just think about an emergency, and imagine the expected chaos in the ether if there is imminent danger, and all stations go on the air at the same time. The Pythia in Delphi and all the other ladies in the telegraph offices and receiving stations can not make out a single word any longer. The number of transferable messages will not even steadily decrease with this chaos on all channels. No, the system collapses abruptly because it can not transmit a single message anymore, and Greece collapses in no time without the broadcast technology.

The Greeks are partly to blame for the excessive increase of the radio traffic because they founded their subsidiaries throughout the whole Mediterranean area from the Pillars of Hercules to the Black Sea by their policy of settlement. A private first temple was built first in each foundation which has also immediately established radio contact. The feeling to be not left in the lurch was very important for the settlers. The settlement policy had not only economic and political reasons but it should primarily serve to spread the broadcast technology.^{8.1}

The oracle of Delphi had even ordered this expansion. The king of Thera had received the downright commission from the Pythia to establish the city of Cyrene in Libya. Also according to Herodotus, "an oracle

has commanded the Lacedaemonians on the island Phla (Djerba?) to establish a colony."^{8.2} It is reported elsewhere of the king's son Dorieus who received the counsel "on the basis of oracles" from an interpreter of oracles that "he should colonize the land of Heracles in Sicily." On his request in Delphi, "the Pythia replied, yes, he would conquer it."^{8.3}

Delphi has even taken direct influence on the question of the siting and only accepted a settlement site until a reliable radio communication was ensured. From Cyrene is reported that several sites had been tried and overruled again until it finally worked at a source which was sacred to the god Apollo.

Due to the large number of new transmitting stations by the distribution throughout the Mediterranean, the Greek oracles with Delphi leading the way could develop new important sources of information procurement.

Naturally, all conversations could be listened in to between the colony and the Greek "mother". However, what was telegraphed there back and forth were not only important political and economic news but also weather reports. The ether was overstuffed with some messages of love and congratulations, and the sacred broadcast technology was abused. The gods wanted to be in touch with the people, and they earned the most money with the rich merchants. The radiotelegraphy has developed into a lucrative business.

The system increased in an uncontrollable dimension and already carried the risk of collapse in itself. You see, if the Romans had an easy job of it with the Greeks, then it was their own fault anyway. As you can easily imagine what happens when the priests get no useful messages from the gods anymore and must step forward

to the people with empty hands because they are helplessly exposed to their technology, then the people turn apostate at the latest!

The once mighty technicians of the transmitter, who dictate the political decisions to the rulers via the oracle and thus were the really powerful, the leader in the background, had suddenly no popular support overnight; their instrument of power was useless and worthless.

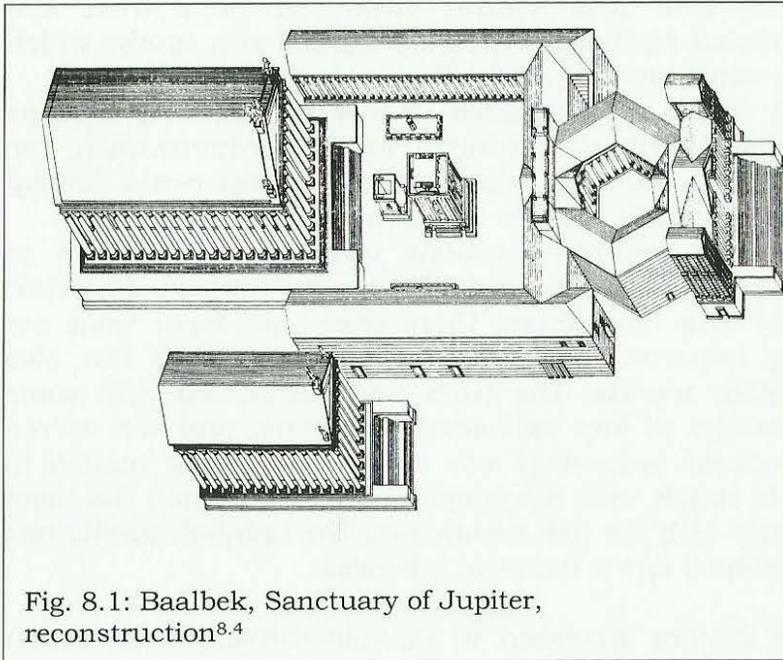


Fig. 8.1: Baalbek, Sanctuary of Jupiter, reconstruction^{8.4}

However, this collapse offered the only and unique opportunity for the Romans to occupy the broadcast technology of the Greeks.

Initially, the misuse of the broadcast technology has been restricted as far as possible, and the military use take precedence. This has led to an increasing godlessness and partial estrangement from their old gods among the Greek population. The technicians of the temple were suddenly no advertising revenues and without a broadcasting license because the Romans have reallocated the frequencies. As you can imagine, some important Greek temples have lost their claim to certain frequencies.

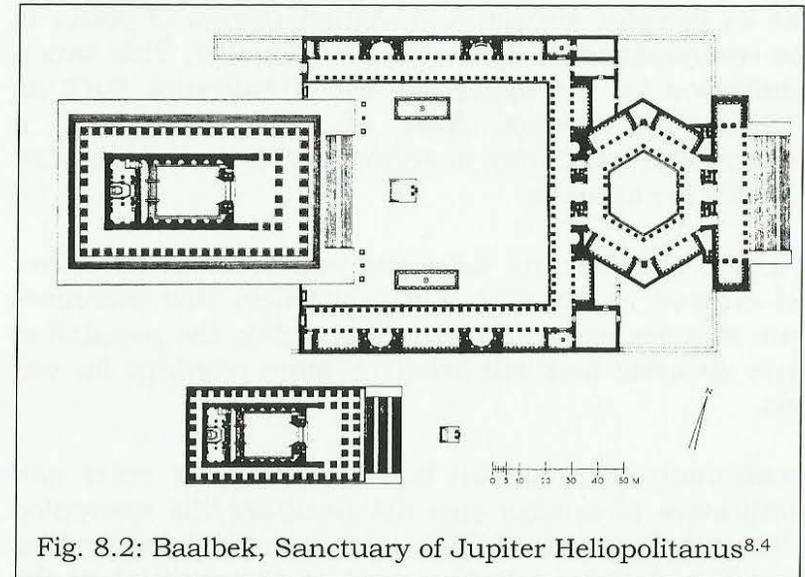


Fig. 8.2: Baalbek, Sanctuary of Jupiter Heliopolitanus^{8.4}

The Temple of Venus and Roma in Rome was designed at 5.4 MHz which is on the same frequency as the Temple of Zeus in Olympia. Emperor Augustus took 7.5 MHz from the Temple of Athena Alea in Tegea to Rome for his Temple of Mars Ultor in the Forum of Augustus, whereas Trajan took for the temple on his forum the

very popular frequency of 7 MHz which the Temple of Jupiter on the Capitol already shared. Many temples in ancient Greece were dedicated to this frequency. The same can also be observed outside of Rome. For example, the Sanctuary of Jupiter Heliopolitanus in Baalbek uses the same 5 MHz as the Parthenon in Athens.

The Emperor could be unafraid of difficulties by overlaps of frequencies or even the Greek circumstances because they were even those who determined the transmission time as Pontifex Maximus. A demonstration of power is also conspicuous in the frequency selection. This was a humiliation for the important Greek cult sites such as Olympia and Athens. After all, the takeover of a transmission frequency is equivalent to the acceptance of the divine heritage.

In short, the Romans have ensured order in the ether and created in my view a new problem that increases again its relevance and clarity just today: the population turns apostate and will bring no more offerings for our gods.

Occasionally, this is also because the most seers and interpreters of oracles can not decipher the encrypted military code anymore. This is also desired for reasons of military secrecy because most of the enemies at the borders of the Roman Empire are not only in the transmission range but know and master the civil code as well.

The Signal Corps is the backbone of the Roman army. I see here an ominous development. While the power of the military continues to increase, the people become

godless or worship foreign gods at the same time. Especially the oriental transmitters are excellently received in Rome.

The people longs for a strong faith and religious support which the media offers to them. This problem, my dear future emperor, has to be solved!

References and notes on lesson 8:

from: Herodot: Historien, Kröner Verl. Stuttgart 1971, 4th ed., Taschenausgabe Band 224, Übers. v. Horneffer:

8.1: citation, page 307-311

8.2: citation, page 317

8.3: citation, page 345

8.4: Propyläen Kunstgeschichte, Propyläen Verl. Berlin, fig.2
Rekonstruktion des Jupiter-Heiligtums, Fig. 7, p. 163
and
A. Springer: Die Kunst des Altertums, A. Kröner Verl.
Leipzig 1915, 10th ed., p. 547 (Baalbeck)

Lesson 9

Optimization of the Broadcast Technology

As you can imagine, while decrypting telegraphically transferred texts, transmission errors are possible. An improvement of this circumstance is achievable by the implementation and the maintenance of a certain versification. In that case, missing characters can be relatively easily added, and the coherent text is controlled by the checking of the rhythm. We technicians would put it like this: the redundancy of the communication can be increased by the use of hexameters. The Greek gods have usually also made use of this possibility.

Additionally, a further source of error occurs by the atmospheric disturbances. We can not influence or prevent it. Therefore, it is better if we completely go off air, for example, during a storm. Many temples go only at night on the air because then at least the interference radiation source of the sun is switched off.

Finally, there is the question of the reliability of the used technical devices, the transmitter and the receiver. We have reached a very high quality standard in the temples. Once the technician on duty caused the temple to oscillate, it is guaranteed that it actually is on the air.

The issues of **quality improvement and assurance** in regard to:

the **transmitter**

1. it works without limitation if the temple oscillates
2. increasing the redundancy by a meter
3. possible, night transmit mode to avoid the interference of the sun

ad 1. temple, ziggurat, Ark of the Covenant
ad 2. hexameter, iambic tetrameter, etc.

the **receiver** (oracle)

1. rustling of leaves (Dodona)
2. ringing of an iron kettle
3. via tripod (pendulum, listening)
4. via temple sleep
5. extispicy (uninfluenceable)
6. auspice

ad 1. trees, e.g., oak
ad 2. et 3. e.g., through a crevice
ad 4. on a temple tower
ad 5. on an altar (nearby or in the temple)
ad 6. hospices

Fig. 9.1: arrangements for quality assurance of the ancient transmission of information by radio

The oscillation can be heard as a rustle and sometimes seen as well. Infrequent "corona discharges" prove that the cella is charged.

It is extremely dangerous to walk into an oscillating temple, you know. On several occasions, tragic accidents in the workplace has been reported in which mostly inexperienced curious teenagers are secretly sneaked into the temple to hide there at night. The next morning, we then discovered their bodies.^{9.1}

Admittedly, it is not easy for the technicians to cause an especially great temple to oscillate. Therefore, the priest often performs its duty in one side room that is vibrationally coupled to the cella or in one that is placed in a small temple in the middle of the cella. Such a help for the oscillation was required, for example, in the Temple of Apollo at Didyma.

Unfortunately, it is not certain that every temple is operational around the clock because invariably natural energy sources are used, and these are subject to the natural fluctuations. For example, the kings of Sparta, who had to manage the priesthoods of the Zeus Lacedaemon and Zeus Uranios according to Herodotus, will "get one adult animal of the municipality for sacrifice in the Temple of Apollo each new moon and the seventh day of the month."^{9.2}

When and how often you can go on the air is a location issue in the first place. Among the Romans, it is not for nothing that the land surveying is carried out by the augurs in person and only the high priest himself defines the position and orientation of the temple.

Despite these difficulties, when the temple oscillates once, it works without any restriction at full transmit power as mentioned earlier.

In contrast, the reliability of the receiver technology must be assessed much more critical. Above all, here are very different and sometimes also very imprecise techniques in use.

In the oracle of Dodona in Epirus, the oracles were originated from the noise of the sacred oak which was also called the speaking oak.^{9.4} Later, tradition has it that you have obtained the information from the ringing of a iron kettle.^{9.3}

The gods Very often communicate the auguries by dreams to the receiving priests or priestesses. For this purpose, the people must lie down at specific locations to a temple sleep. For example, the sanctuary of Zeus Trophonios in Boeotia or Amphiaraios where "Zeus has divided the earth". The most holy place in Delphi also forms a crevice on which stands the tripod of the Pythia.^{9.5, 9.6}

The main problem with these methods is that subjective feelings of the receiving person are evaluated. Misperceptions or self-delusions can not be absolutely ruled out. Therefore, the extispicy is preferred today as I have told you. Even this method does not always work with consistent reliability. Just like people who react differently sensitive to signals in the ether, the entrails of sacrificial animals do not guarantee absolutely constant reception quality as well. However, deliberate influences are excluded by the convulsions of a liver or a spleen because the animals are killed immediately before the extispicy. Therefore, this method is considered to be incorruptible and can not be

manipulated. As a result, it is also preferred by the military. Each military leader may approach the altar and watch for himself if really all the characters are accurately recorded.

The technology of the transmitter and the receiver are undoubtedly a rather complex device. Many individual processes need to work and play together if information should be sent over the airwaves.

References and notes on lesson 9:

- 9.1: Herodot: Historien, Kröner Verl. 1971, Stuttgart, 4th ed., Taschenausgabe Band 224, Übers. v. Horneffer, p. 14
- 9.2: citation from it, page 400
- 9.3: citation from it, page 637
- 9.4: G. Gruben: Die Tempel der Griechen, Wissenschaftliche Buchgesellschaft Darmstadt 1986, 4th ed., p. 112
- 9.5: Georg Luck: Magie und andere Geheimlehren in der Antike, Kröner Verlag Stuttgart Bd. 489 1990, p. 343-344, sources of literature 73:
 "The Delphic Pythia made unintelligible sounds when she fell into ecstasy, and it was the duty of the priest to turn it into an intelligible text, in the Archaic time in hexameters, later apparently also in prose."
 "For the Greeks, it was a matter of course that Pythian and Sibyls were talking in a language which was only accessible to the insiders."
- 9.6: s.a. H. Schneider: Das griech. Technikverständnis, p.23: Homer on the tripods of Hephaestus: "Attention should be paid here to two things, the self-movement of the wheeled tripods in one case and the characteristic of this movement on the other hand."

Lesson 10

How Croesus (King of Lydia) Examines the Reliability of the Receiver Technology

As you can see, the whole broadcast technology of the gods is only a concoction of humans after all with errors and problems like any technology. Initially, an attempt is made to improve the technology further which is a pathway with boundaries. Sometimes, we technicians may ask us the question of whether it is better to abandon a technology again or to operate it as long as possible. On the contrary, humanity get used all too fast to the amenities of the technical use which is especially true for nontechnicians. Ultimately, we have no other choice but to learn to live with the shortcomings.

Imagine that you are faced with an important and difficult decision, and you are dependent on the transmission technology. To be safe, you want to check the function. How would you proceed?

Croesus faced this question also already as the king of Lydia. He has solved the problem quite skillfully. I want to read from the book of Herodotus how Croesus has examined the reliability of data transmission,^{10.1} "He sent messengers to different places. Some came to Delphi, the others to Abai in Phocis and the third messengers to Dodone. Some were also sent to Amphiarao and Trophonios and others to the Branchidae in the territory of Miletus. These were the Hellenistic oracles to which Croesus sent to prophesy. However, he also sent messengers to the oracle of Ammon in Libya.

Initially, he wanted to put the oracles to the test, and if he had decided that an oracle is veritable, he would have resent out to the oracle and asked whether he should campaign against the Persians. Therefore, to put the oracle to the test, he sent out its people with the following task: they should accurately count the days from their day of departure and ask the oracles on the hundredth day what the king of the Lydians, Croesus, would do now. They should write down the answer which the individual oracles give to this question and bring it back to him. What the other oracles have responded is never reported. When the messenger came to Delphi and entered the sacred chamber to hear the quotation of the god, the Pythia answered the question, which they asked in the order of Croesus, with the following hexameters: ... turtles scent reached me well of the armored animal, cooking together with meat from lamb in a iron pan; ore surrounds it on all sides, so above and below.

The messengers from Lydia wrote down this quote of the Pythia and returned home to Sardis. Now, when the other messengers had returned with the oracles, Croesus unfolded the scrolls and read, ... only in Delphi, he said, would be a veritable oracle because it had guessed what he did back then. In fact, when he had sent out the messengers, he paid attention on the appointed day and now conceived something that was impossible to guess: he cut a tortoise and a lamb and boiled them together in a iron kettle on which he placed a iron lid.

That was the quote which Croesus received from Delphi. What an answer the oracle of Amphiaraus gave to the messenger when they came to the sanctuary and

fulfilled the customs, I can not say because nothing is reported about it, but I know that Croesus said, even this oracle have done the right thing.

Then he tried to win over the god at Delphi by tremendous sacrifices."^{10.1}

We can learn from these and other descriptions that receiving facilities played a dominant role in the Hellenistic period. Here ran all the information together. As a consequence, the oracles gathered a vast knowledge which enabled the priesthood to the disclosure of telegraphic messages and to make relatively reliable forecasts of the future developments. Indispensable are the recent data which certainly require a powerful technology. Croesus also knew this which is why he ordered the functional test.

To be really sure, he then did not work with Delphi alone but together with the both mentioned oracles which he paid with plenty presents and asked about his military strategic problem. However, he could have saved this approach because an excellent communication between the sanctuaries existed logically.

Therefore, it is not surprising what Herodotus continue to write, "both oracles gave the same answer and proclaimed if Croesus delay the campaign against the Persians, he would destroy a great empire. When Croesus got these oracles, he was certainly full of joy and hoped that he would destroy the kingdom of Cyrus." As we now know, he has destroyed his own kingdom. Therefore, the two identical oracles were ambiguous.

You can see that the broadcast technology has its limits. Admittedly, it can spread information very quickly,

faster than the fastest courier, but nobody can look to the future with the broadcast technology.

As is mostly the case that the beneficiaries of a technical application understand nothing of the technology and its shortcomings although they are the ones who even wish the amenities which the technology can provide for them. Therefore, they are also often deceived, for example, with ambiguous oracles.

That can only be good for us technicians as long as they finance the construction of new transmission facilities and pay for the information like Croesus. You need to know that Croesus has paid vast sums of radio license fees. Three thousand head of cattle of every kind, 117 gold bars, a golden lion, two enormously large kraters of gold and silver, four silver casks, two baptismal fonts and much more. "All the Lydians had to sacrifice for him from their possession. Croesus even donated necklaces and belts of his own wife."^{10.1}

Today, we can only dream of such radio license fees. However, it shows how important the broadcast technology of the gods was for him.

References and notes on lesson 10:

- 10.1: Herodot: Historien, Kröner Verl. 1971, Stuttgart, 4th ed., Taschenausgabe Band 224, Übersetzung von Horneffer, citation from page 19 to 22.

Lesson 11

The Pyramids and the Origins of the Broadcast Technology

Those who have no knowledge of the broadcast technology of the gods speak of cultic actions when they observe our technicians at work. Among other things, "culture" refers to the ability of the people to carry out a technique. Perhaps you understand now why people differ in their culture from other living beings. We have the special ability to develop a technology to use it for our own possible benefit afterwards.

Since when has our human culture existed? Actually, since when have transmitters been in operation on our earth? We want to go further into these questions now.

As far as we know, the first transmitters were not built by human hands. They were natural sanctuaries which have more coincidentally allowed something like a transmit mode. For example, they were caves which were suitable in size and shape. Of course, such transmitters were anything but selective. They were terrible broadband, but as long as they could not interfere with other stations, there were no problems in this respect because they had the whole ether for themselves.

As you know, the seers and oracle priests work on the receiver side with nature sanctuaries, crevices, sacred oaks, rivers or springs to this day.^{11.1}

Remember the words of Vitruvius which I have read to you.^{11.2} Our ancestors have very closely watched the

nature and have set themselves the goal to replicate the processes and phenomena on a laboratory scale. They did not want that the run of events and their lives is dictated by the whims of nature. As a result, they first fetched light and heat. They wanted to be a god. Actually, some technicians have also succeeded. However, the developments proceeded quite differently in different cultural regions. For example, I want to show you how the Egyptian Pharaohs became gods due to their superior technology.

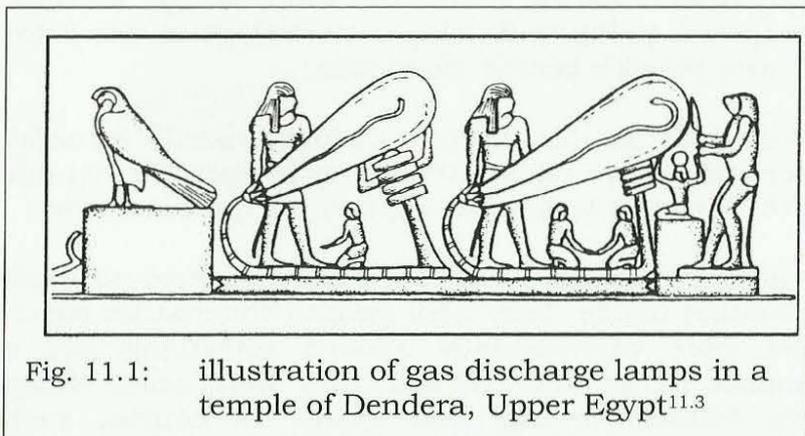


Fig. 11.1: illustration of gas discharge lamps in a temple of Dendera, Upper Egypt^{11.3}

The interest of the ancient Egyptian technicians and researchers was the electrostatics. They experimented with gas discharge lamps which are depicted on the walls of the laboratories under the Hathor temple at Dendera. They were able to produce light effects in the laboratory and collect evidence with such glass bulbs. With this basic knowledge, they then have initiated to construct the necessary buildings for the industrial use.

Nowadays, these are the still widely visible pyramids. These structures collect a cosmic energy due to their design and also charge statically. The top of a pyramid is usually covered with an electrically conductive lid on which an other ball electrode is often mounted. There is a flashover upon reaching a certain field strength. We know this discharge process as a flash.

As you can read in Herodotus,^{11.4} the pyramids were also well grounded because they were built into the water. However, it had to be prevented that the discharge was ensued within the structure. Therefore, it was necessary to fill the whole building with a dielectric of a non-conductive material. The remaining cavities had to be filled with a non-conductive gas. You can still see the vent shafts in the Pyramid of Cheops today. For example, the shafts had to be opened to release the gas before one entered the industrial facility for inspection purposes.

If the pyramid was sufficiently charged, the lightning arrived from the sky to the ball electrode on the top of the pyramid. These flashes were seen widely in the darkness throughout the empire of the Egyptians. Therefore, the pharaohs were able to demonstrate to any subjects who is the master of the forces of nature, and thus that they must be worshiped as a god.

The high demands of an Egyptian Pharaoh and his special role particularly toward to all other gods are wellfounded. His technology was vastly superior and visible to everyone.

As you know, even Zeus can send lightnings. Therefore, he assumes also the leadership role among the Greek gods and can be worshiped as the father of the gods.

Herodotus, the historian of Halicarnassus, went further into the interesting question from where the Greek gods come from, where their roots are and whether or not the lightning beating deities in Greece and in Egypt are the same gods who are only called differently by the faithful. I will discuss about that later.

For this reason, Herodotus traveled even to Egypt. They have proudly told him there how they have built the pyramids. However, I suspect that they adorn themselves with borrowed plumes here. Perhaps you have the opportunity sometime to see the huge stone blocks and monuments for yourself, for example, the hideous Sphinx in Giza. The Egyptians have defaced this portrait of an outsized and magnificent lion! Philistines have mutilated the head of the lion here with hammer and chisel. The hair of every restorer in the present stand on end when he has to see how the remains of the lion's body has remained untouched because the actors has lost their passion in consideration of the size of these giants. You can still see today the effect of the last deluge here on the unprocessed body parts. This suggests that the Egyptians have not built the pyramids themselves as they claim, and instead they have just inherited this indestructible building and provisionally repaired it again within their abilities.

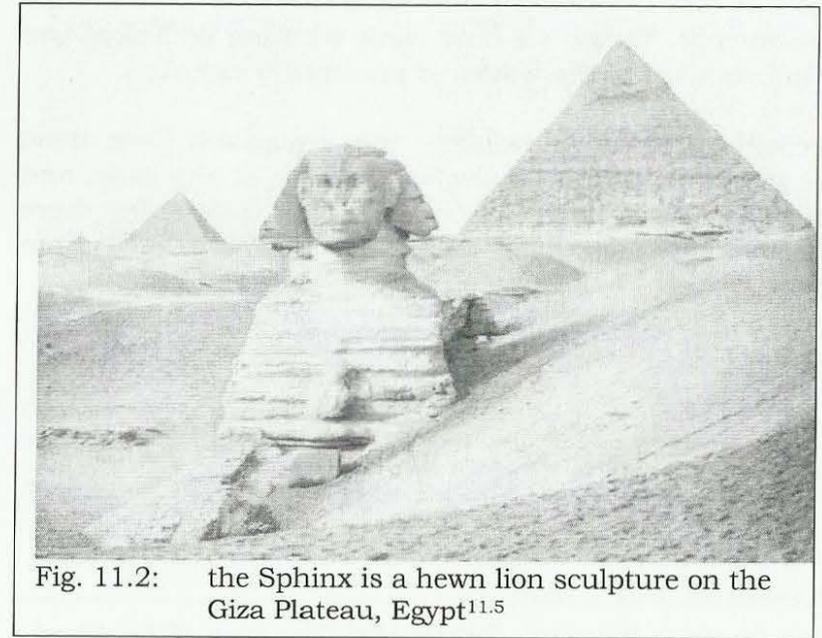


Fig. 11.2: the Sphinx is a hewn lion sculpture on the Giza Plateau, Egypt^{11.5}

We can admittedly understand how they have been used by the Egyptians from a present-day perspective, but we still do not know for what reason and for what technical purpose the pyramids were originally built. It is presumed that they were geomantic power stations with the task to convert the wide range of terrestrial radiation in a low and technically usable synchronous oscillation. Plato^{11.6} reported to us that the people of Atlantis should have got such a technical energy source before the deluge with which they could propel, heat and also cool everywhere at any time.

It is a certainly fascinating thought when power would be portable and usable anywhere through the ether at any time,^{11.7} but our technicians have also tried hard to

use this lost technology; they were not able to reactivate the concept. Today, we only work with the technical use of information of the waves to pass radio signals.

According to my knowledge, the Egyptians have used the pyramids primarily electrostatically in any case, and they also have buried some of their pharaohs there because their deceased rulers are nowhere safer from grave robbers than in an electrically charged building.

References and notes on lesson 11:

- 11.1: Herodot: Historien, Kröner Verl. Stuttgart 1971, 4th ed., Taschenausgabe Bd. 224, Übers. Horneffer, p. 636-637
- 11.2: Vitruv (Marcus Vitruvius Pollio): Zehn Bücher über Architektur, Übersetzung von Dr. K. Fensterbusch, Wissenschaftl. Buchges. Darmstadt 1987, 4th ed.
- 11.3: P. Krassa, R. Habeck: Das Licht der Pharaonen, Herbig Verl. 1992, page 101
- 11.4: Herodot: Historien, Kröner Verl. Stuttgart 1971, 4th ed., Taschenausgabe Bd. 224, on the pages 141, 155, 165.
- 11.5: A. Springer: Die Kunst des Altertums, A. Kröner Verl. Leipzig 1915, 10th ed., p. 21
- 11.6: Platon: Sämtl. Dialoge, Bd. VI, Felix Meiner Verlag Hamburg 1988 (Übers. O. Apelt), aus Timaios und Kritias.
- 11.7: Johannes von Buttlar im Gespräch mit Prof. Dr. Konstantin Meyl: Neutrinopower, Argo Verlag 2000

Lesson 12

The Transmitter Towers of the Babylonians

Lightnings can be frightening to us people. With the flash light, the rumbling thunder and the destructive and even lethal effects, it has always been a natural spectacle which the people have highly respected. If it is possible to produce this phenomenon artificially in a large-scale facility, so the god can demonstrate his superiority over the forces of nature as the supreme technician.

Such an experiment can convince only if the lightning strikes the pyramid by command of the god. Therefore, we had to learn to influence the timing of the discharge. There are several ways to do so, for example, by changing the gas filling.

In the foreground of the Egyptian pyramids certainly was the demonstration of power of the ruling god. The light signals can be transmitted by command of the god, but it can also provide a message. For example, a useful agreement would be the general mobilization in the case of an attack by foreign troops.

To provide more or detailed information, more than just a single pulse but a pulse sequence is needed, and this can not be done with a single pyramid. It is very advantageous that even several pyramids in Giza are relatively close together. Initially, the technology age of the information dissemination in Egypt has begun purely visual at first as I said.

A lightning is not only a visual and an audible signal but also sends a whole spectrum of electromagnetic waves into the ether. There are sensitive people who react to this radiation. You can lock them in a cellar where they can see nothing and hear nothing, but they still can specify the time of a lightning exactly. The augurs, who have completed many years of training in dowsing, use a rod, a twig or their Lituus in order to do this. They prefer crevices and fault zones and detect such places which allow an optimum radio reception.

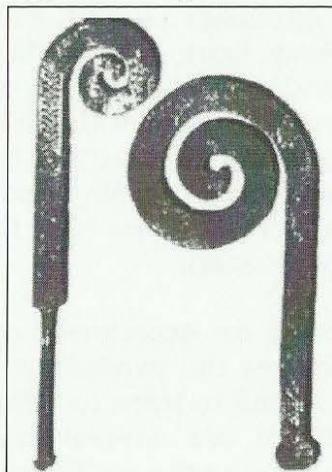


Fig. 12.1: the Lituus, "receiver" and meter of the augurs^{12.1}

These radio signals have a much wider range and are also received at locations in which the light signal is not seen. The Egyptians could collect all these experiences over time. With the construction of their pyramids, they had built transmitters although it was ostensibly not intended.

Another also very interesting development has taken place in Mesopotamia. This is where the classic pyramid shape has been modified over the technical compromise with the step pyramid to the construction of temple towers. Those, which are often referred to as ziggurat, can be found in Ur and Uruk, in Babylon,

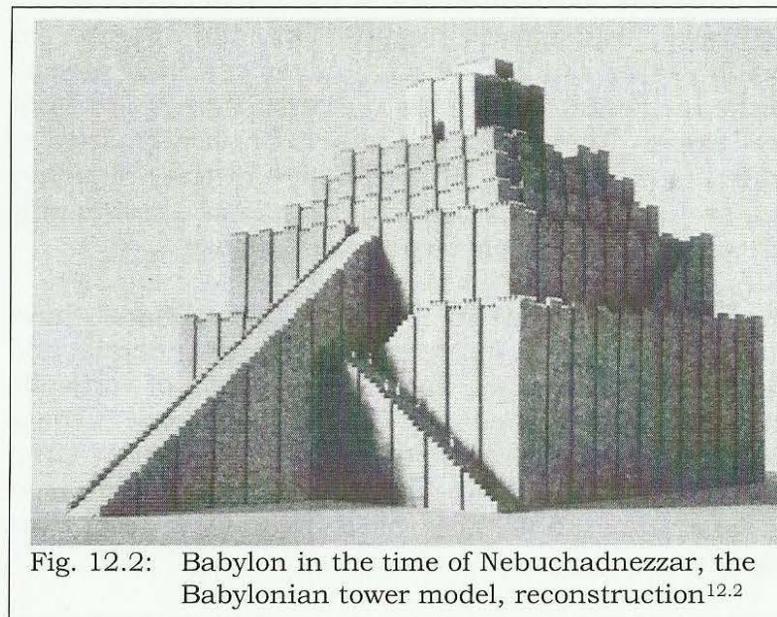


Fig. 12.2: Babylon in the time of Nebuchadnezzar, the Babylonian tower model, reconstruction^{12.2}

in Assur and in other cities of Mesopotamia. This temple towers were the first frequency-selective facilities.

I have to explain you that a lightning radiates all possible frequencies, and the pyramid has not a specific frequency with which it could resonate due to its design. This circumstance causes problems at the receiving end. The sun and other celestial bodies constantly strike us with interference radiations. The receiver has to distinguish the so-called useful signal out of the interference signals. As I have already explained, this works better at night than during the day.

Moreover, it is a question of the wavelength. We find particularly favorable conditions in the range of the short wave. These waves are reflected by an air layer of

the ionosphere and redirected to the Earth. Therefore, a short-wave transmitter results in the mentioned incredibly wide range. The same layer certainly reflects also the incidental short-wave radiation from space back there again. Therefore, the ether is largely free of extraterrestrial sources of interference in this frequency band, and exactly this circumstance allows a reasonably undisturbed and reliable receiver technology.

Famous for their astrology, the Babylonians have already possessed these knowledge of cosmic details and have placed their temple towers in the form of vertically standing cavity resonators in the landscape. These transmitters can not yet be described as a narrow band which means that no two towers could go on the air at the same time, but their used frequency band was always in the range of the shortwave.

Another special feature of these structures is that they are suitable for the transmit mode as well as for the radio reception. At the top of these transmitter towers is a small temple. The oracle priestess must go in here and lie down in a predetermined location. Then she can receive transmit signals with certain body parts. The cavity resonator beneath her helps to strengthen the relevant short-wave frequencies, thereby increasing the gap between the useful and the interfering signal.

For reasons of statics, these buildings had to be built of stone. The construction of a temple tower was extremely complicated and expensive. Only a few large cities in Mesopotamia could afford such a large technical transmitter at all. We know from the Tower of Babylon what sacrifices had to be offered and what problems had to be solved.

There are also the linguistic difficulties if the operators are in disagreement over the transmitter code, or the tower is built too large out of a false ambition, and thus other radio networks are received with an unknown transmitter code instead of their own. Therefore, a communication is no longer possible and the whole construction project raise to question at once.

The principle had been disregarded in Babylon that all the "phone booths" have to be largely identical in design and size to share the same frequency band within a radio network.

Notwithstanding these famous bad planning, the communication between the individual city-states was very active because of the radio technology which the old rich in Mesopotamia had given the actual cohesion over the centuries as long as they could dominate their technology over the other might.

References and notes on lesson 12:

- 12.1: K. Meyl: Elektromagnetische Umweltverträglichkeit, Teil 2, Kapitel und Tafel 16.10: interpretation of the Etruscan (left) and the Roman (right) Lituus as a receiver coil (a pancake coil or also called a Tesla coil).
- 12.2: W. Andreas (Herausg.) Band 1, Propyläen Verl. Berlin, Tempelturm des Marduk in Babylon, Rekonstruktion von W. Andrae, Berlin, Staatl. Museen.

Lesson 13

The Origin of Writing

We are exposed to constant pressure to innovate the technology. Stagnation of the development is perceived as a regression. The course is certainly related to the mentioned shortcomings of all originated accomplishments of humans. We technicians constantly feel the need for further improvement, and we know very well that only the best and most advanced technology will prevail sooner or later. The Assyrians and Babylonians had also to gain this painful experience.

Why do they have arranged their cavity resonator in a standing position and built it up to 100 meters upward? Maybe they wanted to come closer to heaven in this way and possibly increase their reach. From an economic point of view, this was hardly sustainable.

Some clever technician had come up with the idea and had rotated this colossus by 90° so that the cavity resonator laid flat on the ground. As a result, the statics were much easier and the building much cheaper.

In contrast to the pyramids, an optical signaling was not intended. Therefore, the resonator, which is called cella from now on, did not have to be filled with gas. If it leads to a flashover at such a temple, this takes place within the building and no longer outside.

In addition, this low-cost transmitters were predominantly built of wood, preferably cedar. The very high and straight grown tree boles were eminently

suitable as load-bearing pillars and for the roof structure.

These wooden temples were not particularly durable but extremely powerful and a serious competition for the elaborate temple towers. Therefore, there had been a dispute about this question already 3000 years before Christ.

The Epic of Gilgamesh has been handed down to us^{13.1} that the king of Uruk who is named Gilgamesh had to prevail against Humbaba who is called the guardian of the cedar forest. The epic described how Gilgamesh first slays his opponent Humbaba who apparently had jammed the signal of the god of Earth Enlil in Uruk. Afterwards, he cuts down the cedar out of which the transmitter was built and orders to construct a so-called door out of the sacred cedar wood of Humbaba. Gilgamesh brought this sign of success over his opponent with the stately dimensions of 36 meters by 12 meters as a trophy to the Temple of Enlil to Uruk. Perhaps it is the dimension of the cella of the wooden temple. Logically, the specialists in Uruk have a keen interest for this revolutionary technology.

Presumably new difficulties were the reason why they decided to blare out the story of Gilgamesh as epic into the airwaves many years later to warn those who wanted to emulate the Humbaba due to the associated wide dissemination.^{13.1}

If you consult the writing tablets, you will find that the transmission errors have often been recorded in cuneiform texts of the various receiving stations at the same time. However, the texts in the local language bear the personal handwriting of the interpreter who has

translated the cuneiform writing—I want to call it machine language—into an understandable and generally readable form for everyone. The transmission errors are eliminated as far as possible, gaps are closed freely based on the imagination of the interpreter, and passages are deleted again which had been broadcasted twice in succession because of their importance.

You have to know that not every writing system is suitable for the recording of telegraphic texts. The oracle priest must be able to take notes while the message enters, and he even just draws only with the feet in the sand. Besides the cuneiform writings, also the runes which the

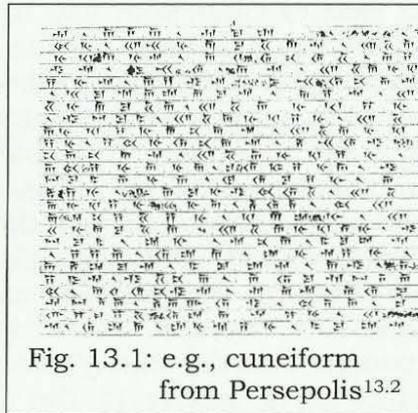


Fig. 13.1: e.g., cuneiform from Persepolis^{13.2}

Teutons use are suitable for it. The translation is then done by the interpreter, the druid or the interpreter of oracles as we call him.

Therefore, the broadcast technology of the gods requires a writing system. In my view, we even owe the origins of writing to this circumstance. Even today, the telegraphically received texts are necessarily co-written to be then deciphered and translated into the language of the people. You can find these records in the books of the temple which are properly administrated and monitored by the oracle priests.

Either more or less, only the priest chooses what character he uses in his writing. The main thing is that

he can still read his own writing afterwards! You know it for sure.

This also means that a transmitted text which was simultaneously received from several stations, such as the Epic of Gilgamesh, may lead to slightly different-looking records in the books of the temple which are difficult to compare for a third party. The first point is to reproduce the content as unaltered as possible. However, this is not always guaranteed because each interpreter of oracles comes up with his own interpretation during the broadcast of the encrypted text. Therefore, often several different versions exist from ancient writings.

You now gain an insight into the problems with which I often have to struggle. I am not only your teacher what I certainly consider as my central assignment, but I am also a scientist after all, as you know.^{13.3}

References and notes on lesson 13:

- 13.1: Gilgamesch-Epos, Übers. A. Schott, Reclam-Heft 7235
 13.2: M. Pope: Das Rätsel der alten Schriften, Pawlak Verl. 1990, Kap. 4: Die persische Keilschrift, fig. 59, p. 105
 13.3: Lucius Caelius Firmianus Lactantius: Ausgewählte Schriften, Übers. A. Hartl, Verlag der Josef Kösel Buchhandlung München 1919

Lesson 14Karnak, the Eternal Building Site and
Carnac, the First Long-Wave Transmitter

Is the actual number of broadcast temples larger than the receiving altars or vice versa, or are they represented in equal numbers? Well, that is an interesting question which I will explain in more detail in the next lessons.

When the ether still was scarcely used technically at the time of ancient civilizations, around each transmitter first developed a civilization who was dependent on this technology and of the god or was kept in dependence to be exact. The size of the sphere of influence was dependent on the range of the transmitter.

The broadcast technology was used mostly very one-sided to the effect that the god ordered instructions and commands, and all the audience had to follow these. It was like an order from the top for the recipients because he had come to them out of the sky. Feedback was hardly asked because the respective god was almighty. If at all, it had to be delivered by courier. This was extremely time-consuming and troublesome. However, the druids and interpreters of oracles had to meet from time to time to discuss and to define the used character set for the telegraphy.

You can also notice that at first the transmitter was always at the center of attention and not the receiver as in Greek times afterwards. The Sumerians and Babylonians took already a special position with their intercommunication systems and their radio communications from one city to another. They were

ahead of their time with the combined technology of the transmitter and receiver. However, this system required a high level of discipline such as the compliance of fixed broadcasting hours; it was also easier to disrupt. As you have seen, Gilgamesh had to keep the airwaves free by force of arms.

The other deities have fought against arising competition in another way. It is quite exciting to watch the individual arrangements.

Let us go back to Egypt with our considerations. The broadcast technology of the pyramids was only an unwanted side effect. The handling of these huge buildings was also quite complicated. Therefore, pure broadcast temples were built in addition. The main temple of the god Amun of Karnak in Thebes, Upper Egypt, was originally of average size and design.

Surrounded by sandy deserts, the Egyptians were always relatively autarchic because of their geographical location. Their transmitters were dominant at least in the own realm. The coming of large and powerful short-wave transmitters should change that. Each interfering frequency was determined in response by the Egyptian technicians, and the own temple of Karnak was accordingly expanded or rebuilt. True to size erected obelisks and pylons still bear witness today to the effort to cover all the technically used frequencies with only a temple.

The objective of the god Amun was clear. If he went on the air, all other stations had to remain silent. He wanted to rule over all the frequencies and to dominate the airwaves. The claim of this god who tolerated no other gods besides him was boundless.

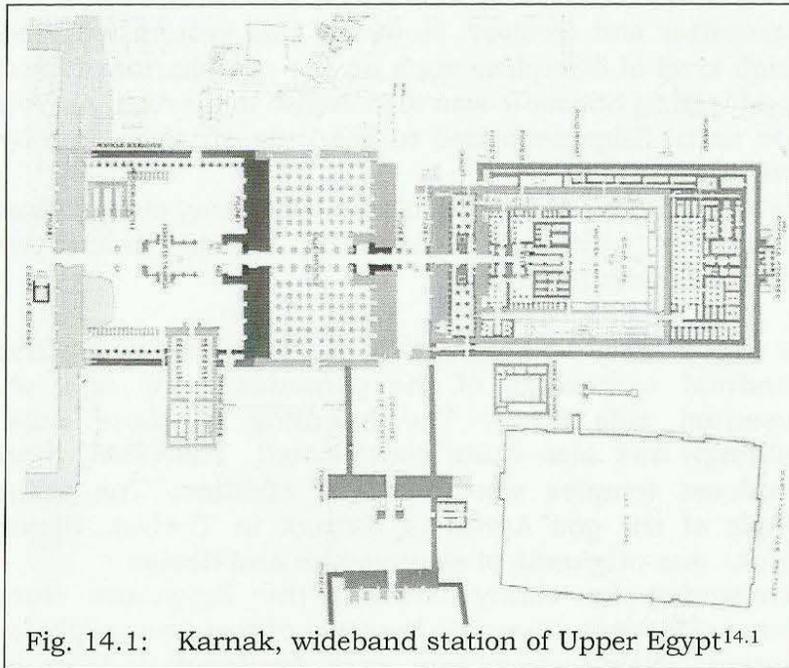
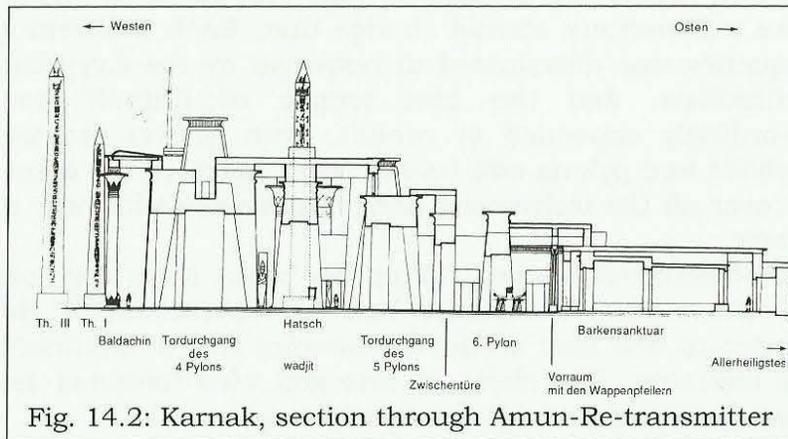
Fig. 14.1: Karnak, wideband station of Upper Egypt^{14.1}

Fig. 14.2: Karnak, section through Amun-Re-transmitter

However, he could not stop the construction of other temples. A visible consequence was that the temple of Karnak became a permanent construction site. The temple was degenerated to a pure symbol of power, also technically always less manageable and eventually shut down permanently by us Romans.

There exists yet another example that shows how to oppose against the spread of the broadcast technology. This temple is also unique and has—maybe it is just coincidence, maybe not—the same name. It is the Celtic temple of Carnac in Brittany which should be discussed here.

It initially was a short-wave transmitter in timber construction. If other very powerful deities arrogated the airwaves for themselves, it was decided to enlarge the temple to switch to lower and still free frequencies. In this way, the transmit frequency slipped from the favorable shortwave to the range of the medium wave, and you had to learn that a viable receiver technology is not possible here. The technicians of Carnac were ambitious and would not be dissuaded from their path. They built their wooden temple longer and longer and made the experience that the radio reception very slowly got better again.

By achieving an impressive length of one kilometer, they had finally been abandoned even the medium wave and reached the so-called long wave. A high level of noise was still present here, but this was fairly constant. As a result, it was possible again to clearly distinguish the useful signals from the interference signals with relatively simple means. A long wave is a pure ground wave that appears to follow to a certain extent even the curvature of the earth from the point of view of the

receiver. The entire Western Europe was reached by the long-wave transmitters.

This gigantic structure was technically groundbreaking. The main problem was the power supply of the transmitter. For this purpose, the technician erected menhirs from a material that performs high frequency self-oscillations. These stones were used as energy carriers and energy storages. To ensure that no valuable energy is lost, they left the stones unhewn as far as possible. It was also easier to adapt the soft wood to the irregular shape of the granite blocks than vice versa.

Carnac was a facility of the superlatives in terms of dimensions as well as the transmit power. Menhirs and stone circles were erected throughout the broadcast range for the radio reception of long waves in particular. All information has been transmitted orally. The bottom line is, it could be done without written records which are necessary with intercoms.

The real enemy of this wooden temple was not the human but only lightning and fire. A pure stone construction was ruled out because of the incredible dimensions. Unfortunately, the operators of the gigantic facility had to witness how their proud building burned itself down one day.

References and notes on lesson 14:

14.1: Karnak, Ägypten, Anatomie eines Tempels, Ausstellung Freiburg 1990, Wasmuth Verl. Tübingen, p. 14 and 40

Lesson 15

The Redundant System of the Phoenicians

The aforementioned structure with a transmitter and many receivers, i.e., the principle that god speaks and everyone listen, was initially widespread. It was also used outside Europe, for example, in Mohenjo-daro, Indus Valley or in Meroe, Ethiopia. According to Herodotus, there is an oracle of Zeus, "if god told them to go to war by an oracle, they did it with the specified location and enemy from god."^{15.1}

The inverted structure in which the receiver is the center of attention is an advantage at least from an economic perspective because the people donate and always sacrifice only to the oracle at the receiving station from which they receive the divine information and not to the address of the transmitter and the god directly who they do not even know and also should not know. The Greeks have perfected this system.

However, during the transitional period, an interesting structure still existed in which the transmitter and receiver were on an equal footing. It had begun in Mesopotamia, as I said before. Only the Phoenicians have further developed, optimized and spread this technology throughout the Mediterranean. This talented people of shipbuilders, sailors and traders thought and acted pragmatically. The broadcast technology was a means to an end for them. It served the communication of news, the announcements of wind and weather and the purchase order processing.

The temples of the Phoenicians had lost all remnants of holiness. Therefore, they also did not build temple monuments of stone but used wood as a building material which was familiar to them from the shipbuilding.

They also built no limited power transmitter but voluntarily chose the highest range of the short wave which was less complicated. It was sufficient and economically reasonable for their purpose. Furthermore, the length of the available cedar trees determined the possible height of the wooden pillars, thus the size of the temple and its frequency.

You have to assume that the Phoenicians as seafaring people have traveled the world, knew all the used technology in their time and also more or less mastered by themselves. An impressive evidence can be the Temple in Jerusalem which the Phoenicians have built of stone.

You have to know that Jerusalem was in direct range of transmission and influence of even three overlapping transmitters of the Egyptians, the Cretans and the Babylonians. This important location had always played a key role.

The Phoenicians put less emphasis on long range but rather to secure data transfer in everyday life. For that purpose, they constructed ring systems around the Mediterranean. Therefore, an information was retransmitted from one station to the next or forwarded, as it usually says in the original texts. If then the correct information arrived back at the starting point, the priest knew that all stations had received the correct

information. Otherwise, he had to send the message again.

The Phoenicians were not only smart technicians, they were also ambitious and had ambitious plans. Perhaps the most exciting one of these was the following plan: they sailed not only the Mediterranean but also the oceans, and thus they knew that the earth is a round sphere.

Therefore, they sailed along the ecliptic over the oceans and built the next transmitter at intervals which corresponded to the range of their short-wave transmitter. If they already found sanctuaries or remains which earlier cultures had built, then they put them back into operation.

After their radio links were ready, they could start a message in Europe. If this came back in the next night again, it was running correctly from station to station around the world. In this way, they wanted to conquer and dominate the whole world by radio. Perhaps they have overestimated their own strength in regard to the true size of the globe.

In any case, they brought the broadcast technology in the various corners of our world in this way. They encountered peoples who worshiped them like aliens sometimes, but at least as gods what they also actually were, and they explained the broadcast technology and its handling.^{15.2}



Fig. 15.1: Tiahuanaco^{15.3}, Gate of the Sun with relief of the foreign creator deity

Naturally, the peoples have further developed the technology and decorated with symbols and stylistic elements of their own tradition. However, the basic design was retained as the Phoenician gods had taught them. In this way, temples, temple towers and pyramids arose suddenly in North, Central and South America based on the European model.

The Indian deities had also agreed to participate in the giant field experiment. The greatest problem was the big Pacific Ocean. One piece of it could not be overcome. The problem could be solved by establishing a station on a small island which is called the Easter Island.

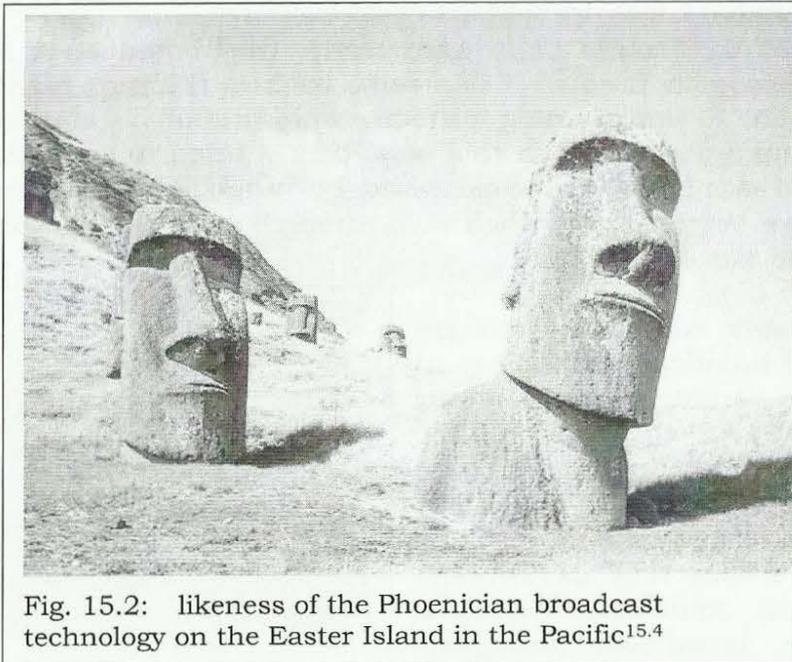


Fig. 15.2: likeness of the Phoenician broadcast technology on the Easter Island in the Pacific^{15.4}

A grotto served as an oracle and the transmitting temple was built on the mountain. The Phoenician god was so much honored that you encounter his likeness all over the island even today although the technical support of this facility had been placed in the hands of the priesthood on the South American mainland.

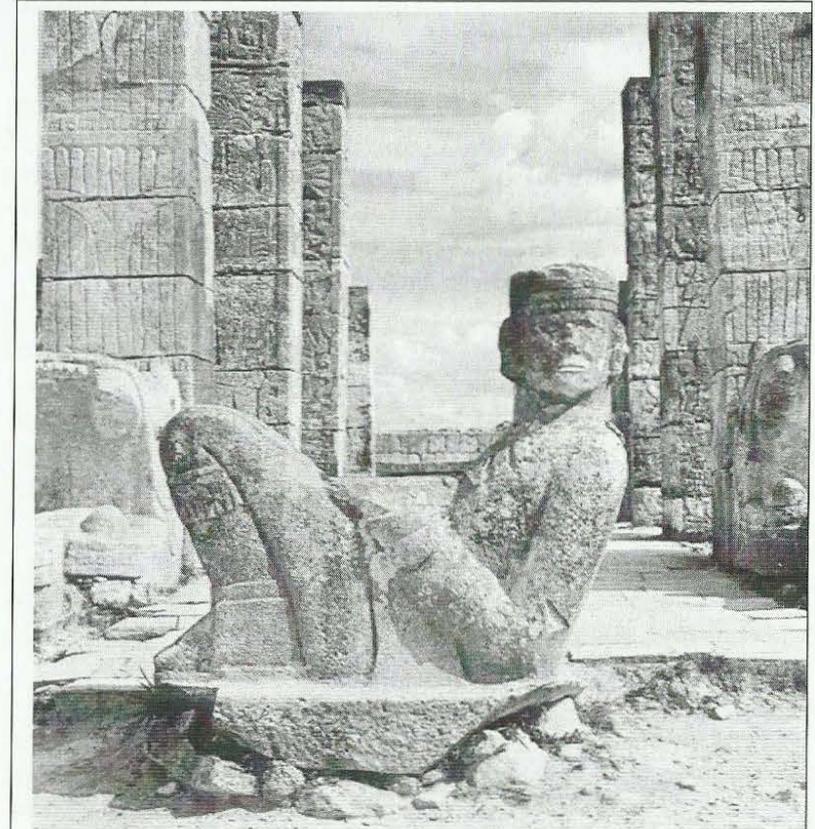


Fig. 15.3: the Chacmool in the Mayan city Chichén Itzá, Yucatán. Does the statue represent the same Phoenician broadcast technology?^{15.3}

The Phoenicians who returned indeed richly blessed from their expeditions had to make the bitter experience that the most people on the earth were not yet ready for a world trade, and that the paths were actually too far for such a small although brave seafaring people. They have overexerted their strengths which they would have more urgently needed in their home to defend their possessions.

The large technical project served only its global divine worship on which they had put no value in their heart of hearts, and it has ultimately brought no economical or strategical advantages for them. Furthermore, scarcely anybody took any cognizance of it in Europe. At best, they harvested admiration and envy.

Cicero concluded each of his speeches in the Senate of Rome with the words, "Carthago esse delendam." Finally, we Romans had only the objective to dominate and to control the airwaves, and there is no way around the Phoenicians. Therefore, all senators concurred with Cicero that Carthage had to be destroyed.

References and notes on lesson 15:

- 15.1: Herodot: Historien, Kröner Verl. Stuttgart 1971, 4th ed., Taschenausgabe Band 224, Übers. v. Horneffer, p. 111
- 15.2: Rätselhafte Vergangenheit, Moewig 1993, 2nd ed. p.124: The Incas told the Spaniards in the 16th century, "that Tiahuanaco was built by white-skinned and bearded men and led by the god Tiki Viracocha." Afterwards, they sailed on to the Easter Island (according to Thor Heyerdahl).
- 15.3: K. Branigan: großer Bildatlas der Archäologie, Reich Verlag Luzern 1987, pages 198 and 194.

Lesson 16

The Radio Dependence of the Hellenes

This time we want to address the interesting question of the eleventh lesson how the broadcast technology actually came to Greece. Was it the Minoan culture and broadcast technology which has spread from Crete to the Peloponnese?

Hints could also be obtained from traditional cases in which priestly women with knowledge of the receiver technology were stolen. The Phoenicians had stolen Io from Argos and abducted to Egypt; the Cretans had robbed the princess Europa from Tyre in Phoenicia in return, and the Hellenes had stolen the princess Medea from Aia in Colchis. Alexandros, the son of Priam, has taken the beautiful Helen of Sparta to Troy in return which the Hellenes have resented him, as we know.^{16.1} What is sure is that only the receiver technology was imported to Hellas and the broadcast technology followed much later.

The historian Herodotus has followed another and no less interesting version. Listen to what he writes:^{16.2} "almost all names of Greek gods originate from Egypt in general. I have noticed for sure by consulting that they are from foreign origin, and I certainly think that they just derive from Egypt."

For this purpose, he tells the following story:^{16.3}

"two priestly women—so the priests of Zeus at Thebes (in Egypt) described the course of events to me—were once kidnapped by Phoenicians from Thebes; one should have been sold to Libya and the other to Hellas. These women have founded the first oracle sanctuaries in

these countries. When I asked her how she knew so much about it, the priests said that they would have hired diligent investigations for these women who had not discovered them, but they had found out the aforementioned about them.

This is what the priests in Thebes told me. The priestesses in Dodone narrate the following in contrast. Two black doves were once departed from the Egyptian Thebes, and one was flown to Libya and the other to them to Dodone. It has settled on an oak and spoke like a human, an oracle of Zeus should be founded at this location. The inhabitants of Dodone would have recognized a divine behest in it and have acted upon it. The other dove flew to Libya, and there has been said to found an oracle of Ammon. This is also an oracle of Zeus. This is what the priestesses have reported in Dodone to me; the oldest of them was called Promeneia, the second oldest was Timarete and the youngest was Nikandre. The other people in Dodone who also belong to the temple have confirmed it for me.

My own opinion about this matter is the following. If the Phoenicians really have kidnapped those women and sold one to Libya and the other to Hellas, I think that the second one came to Thesprotia in Hellas. She then founded under a real oak a temple of Zeus in captivity here because she certainly kept Zeus, whose temple at Thebes she belongs, even in a foreign land in her memory. When she had then learned the language of the Hellenes, she established an oracle and said that her sister had been abducted by the same Phoenicians who had sold her to Libya.

In my opinion, these women have been called doves in Dodone because they were strangers and their language sounded similar to the language of birds."

If you ever have the opportunity to eavesdrop on two amateur radio operators who are talking on shortwave via telegraphy, then you will quickly understand why the speedy switching on and off of the carrier wave sounds to an outsider like the twittering of birds. The priestess was observed precisely how she has telegraphed with her father in Egypt who was the god Amun and the god Zeus in one person when he went on the air. Obviously, his tactic was successful to expand his influence beyond the borders of Egypt with the two clever daughters.

However, Herodotus has other interesting aspects on hand to support his thesis that the Egyptians had brought the era of broadcast to the Greeks in the form of a priestess with a good knowledge of the oracle technology. For this purpose, I read further in his book:^{16.3}

"if they call the dove black, they suggest that it was an Egyptian.

The type of oracles in Egyptian Thebes and in Dodone is also very similar to each other. The prophecy from the sacrificial animals also originates from Egypt.

Furthermore, the Egyptians were the first who have organized sacred festivals, parades and sacrificial celebrations. The Hellenes have only learned it from them. A proof of this is that these festivals are common in Egypt for many a long year while they have been introduced in Hellas only recently."

If we go one step further than Herodotus and seek answers to the question whether the Greeks were dependent on the Egyptians and had been ruled by broadcast technology of the Egyptian god, thus we just have to follow the path of the gifts which the Greeks had

to deliver to the sanctuaries in return for the information. The oracles were dependent on receiving important and useful messages from the gods. Therefore, the oracles could not keep all the gifts and offerings for themselves. They had to deliver a substantial part.

The question to whom they were tributary is just difficult to answer because nothing was reported about it. There are only hints.

A possible middleman was Perseus, a Hellene with Egyptian origin, who was often on the move between the two countries. His father was Zeus; his real name was Lynceus and his mother Danae. Herodotus reports that both had emigrated from the "big city Chemmis in the district of Thebes near Neapolis" to Hellas and writes:^{16.4}

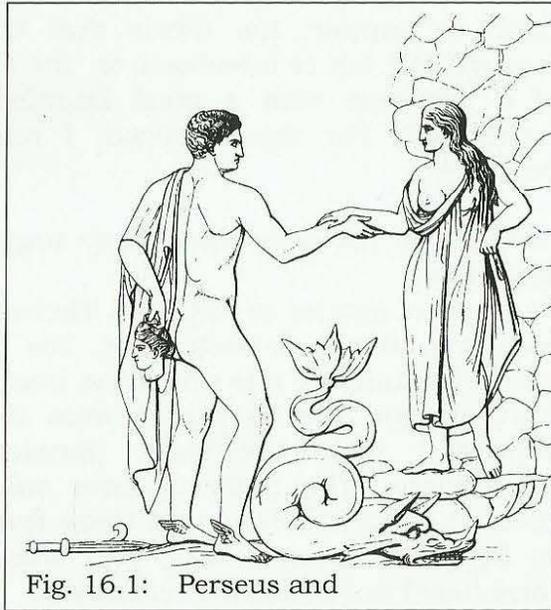


Fig. 16.1: Perseus and

"the rumor goes in Chemmis that Perseus often appears in the country and also often in his sanctuary. You could then find a shoe from him, two cubits long, and

when this shoe has appeared, abundance dominates throughout Egypt. This is said, and to honor Perseus, combat games in each category in the Hellenic way are held."

Therefore, Perseus has brought gifts in abundance from his new home in Hellas to the Egyptians. More specifically, it is the radio license fee of the Greeks which Perseus in his capacity as head of the fee collection center has to pay to the broadcast studio and the working staff there.

As you can see, Constantine, the Egyptians really owe their wealth only to their broadcast technology!

References and notes on lesson 16:

- 16.1: Herodot: Historien, Kröner Verl. Stuttgart 1971, 4th ed., Taschenausgabe Band 224, Übers. v. Horneffer, p. 1, 2.
 16.2: citation from page 122
 16.3: citation from page 124, 125
 16.4: citation from page 136
 16.5: Otto Seemann: Die Götter und Heroen der Griechen, (1869), Fourier Verl. Wiesbaden 1989, p. 275, marble relief in the museum in Naples shows Perseus after he has killed the sea monster and rescued Andromeda.

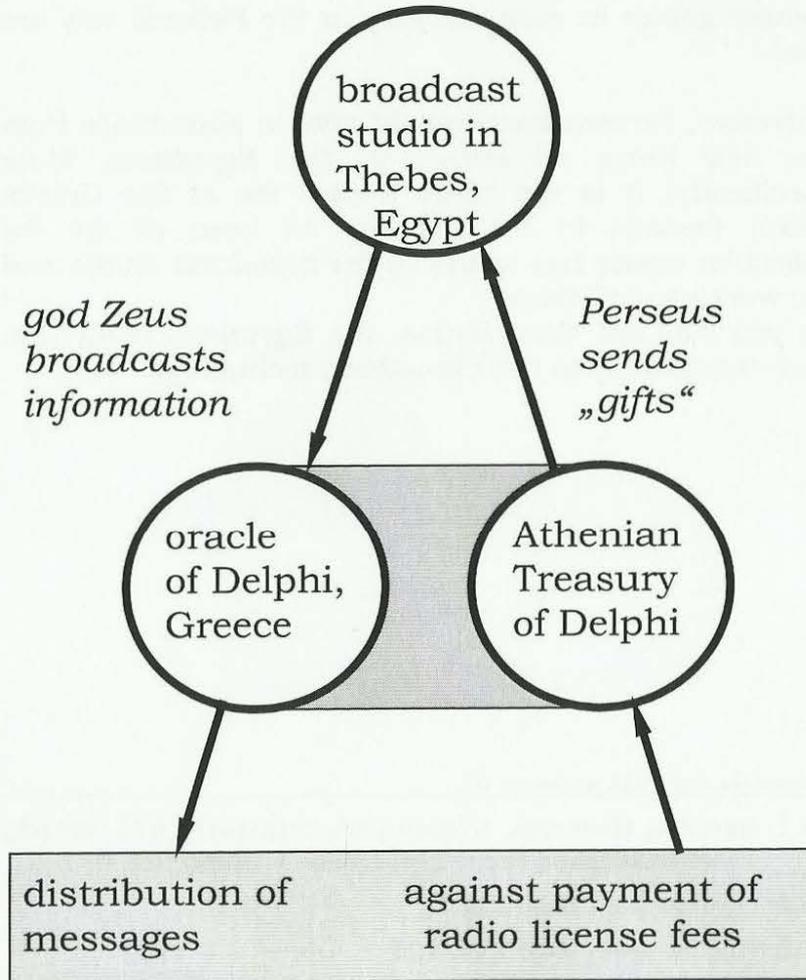
*performance:**reward:*

Fig. 16.2: the business of information technology with messages only against radio license fees

Lesson 17

Radio License Fees and Ratings Figures

I see that some fundamental questions have remained unanswered in the narratives of the historian Herodotus which I have presented to you. I will try to answer them in sequence.

Your question was whether the god Zeus even could emigrate from Egypt to Hellas as reported. The answer must be yes because he and only he himself could do this. Normally, each god has the monopoly on a certain frequency in all eternity for himself. His name represents the corresponding wavelength, and this is determined by the dimensions of the temple which is dedicated to him. Therefore, a relocation or an emigration is not possible just like that.

However, this did not applied to the father of the gods Zeus. He is master of all frequencies and thus the actual and lawful owner of all sanctuaries. When he appeared, the technicians on duty generally gave him the advantage. Of course, he had personally dedicated temples, but that does not preclude that he possibly could also report from a temple which was dedicated to another god.

The father of the gods Zeus was virtually impossible to locate because of this special position. Therefore, I can not specify where and when he would have resided in Hellas. As I have already explained to you, in his direct tradition stands the Pontifex Maximus today who the Egyptians call god Amon.

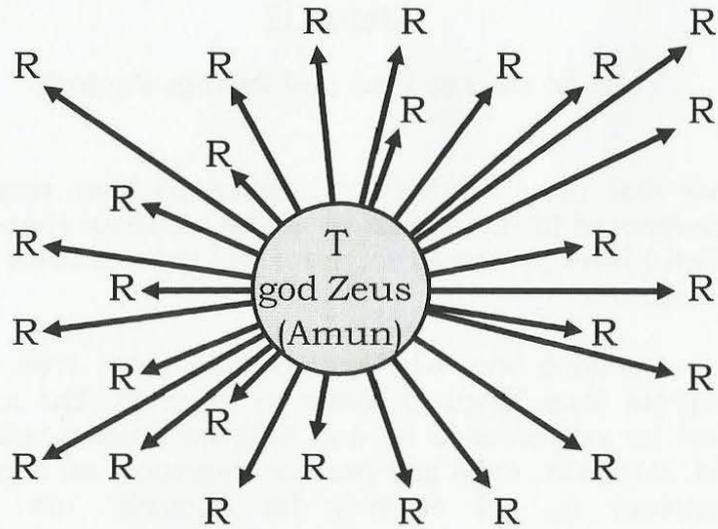


Fig. 17.1: Egyptian radio system with central transmitter T and many receivers R

Next, I would like to comment on your question about the tributariness and the dependence of the oracle. Of course, the oracle could not escape the tributariness because otherwise they ran the risk to anger the gods and possibly would be undersupplied with not enough messages.

Nevertheless, the Greeks managed to slowly free themselves from this fetters. The oracle of Delphi had become more and more important and had soon more importance than all the other transmitting temples together. Not to be boycotted by them, the oracle personally ordered the mentioned settlement policy in the Mediterranean. For this reason, the Greeks had all

their own dispatch services and were independent in this way.

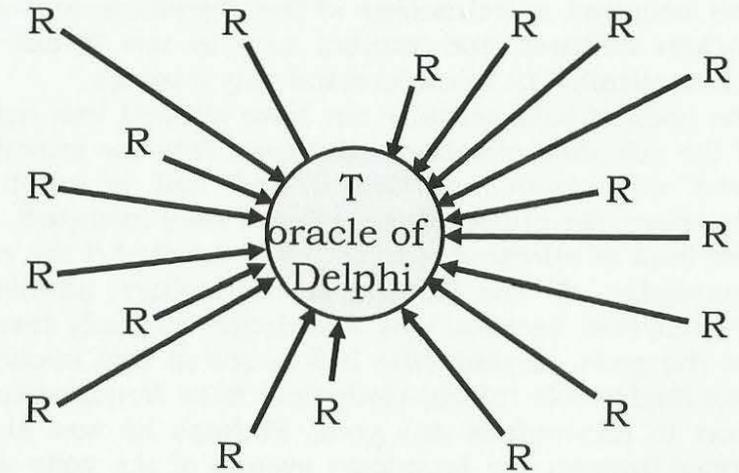


Fig. 17.2: Greek information system with central receiver R and many dispatch services T

The broadcast studios no longer determine the radio license fees but the receiving stations. As a visible consequence, the priests of Delphi had to build entire treasure houses because they had accumulated so many "gifts".

The Greeks had reversed the balance of power and turned the old system on its head. It was now important that all may talk in sequence, and only the Pythia listens, and the powerful priests of Delphi then determine what has to happen.

This effort for autonomy and independence has created an area of conflict from which the Greek natural philosophy could arise as a logical consequence. They had acquired a technology of the Egyptians and other ancient cultures and wanted now to use it not only schematically but to understand why it works.

The gods should actually not have allowed this activity of the scientific questions. However, just the priesthood itself was curious in Greece and had to catch up. Therefore, the philosophical schools were tolerated.

The limit of tolerance was certainly reached if the entire knowledge of the broadcast technology should be rediscovered because this knowledge was only reserved for the gods. Anyone who had acquired this knowledge was finally able to arbitrarily determine frequencies and thus to reintroduce any gods. Perhaps he was able to break through the broadcast system of the gods which was created in centuries and millennia or at least to seriously disturb it.

As you can see, I deliver you my promise from the first lesson because I can now explain why Socrates was accused that he wanted to introduce new gods. He had discovered gaps in the wide range of transmitting channels and wanted to go on the air with its own facility in this range to become a god himself. To prevent that this unauthorized pirate stations arise and the sacred technology becomes a common property, college of priests had to give him the cup of poison because he had seen through the technology of the transmitter and the receiver. He was indeed a genius as a scientist and engineer.

I would like to explain the otherwise common approach at the time to you by an other example.^{17.1} Abaris, a

Hyperborean from the far north, who moved across the country with a dowsing rod in the hand on behalf of his native god to explore the range of his transmitter, should explain the used code of his god to the nations as far as possible in order to enable an influence of his god. However, he was picked up in Greece and worked in the service of the god Apollon without hesitation. The people were told that Abaris had received the talent of prophecy only by Apollo, but that is not true because he had it already. Apollo has only taught his used code to him!

As you can imagine, the revenues from radio license fees are always based on the ratings figures which results from the number of listeners. Therefore, the Greeks themselves have tried to increase their sphere of influence in the same way.

They tell each other^{17.2} that the king of the Scythians had sent his uncle Anacharsis to Hellas to learn from the Hellenes about their broadcast technology. However, Herodotus has got a different perception about the people of the Scythians who demanded only to listen to their own transmitter and to worship their own gods:^{17.3} "Anacharsis found the people in a magnificent feasts in honor of the mother goddess [Cybele] in Cyzicus [on the Asia Minor coast of the Marmara Sea], and he vowed to the goddess that if he came back safe and sound to his home country [Scythia], he would offer a sacrifice to her like he had seen here in Cyzicus and would also celebrate a night feast for her. If he arrived in Scythia, ... Anacharsis secretly celebrated the feast for the goddess just like he had seen in Cyzicus; he had the timpani in the hand, and he had worn the holy figures." To cut a long story short, he was overheard in his efforts to

receive the signals from Greece and was shot on the spot with an arrow.

Electromagnetic waves do not even stop at country's frontiers, and an exchange of cultic and technical practices among neighboring peoples is hard to prevent. "The Enarees," Herodotus writes,^{17.4} "the effeminate men say that the art of prophecy was awarded to them by Aphrodite. They prophesy with the assistance of a lime tree bark. A piece of the bark is cut into three strips which are wrapped around the finger and unwrapped again, and then the verdict is announced." Others "prophesy with the assistance of a number of willow rods." As you can see in the descriptions of the historian Herodotus, the receiver technology of the Scythians was still very unprogressive and close to nature.

References and notes on lesson 17:

- 17.1: Herodot: Historien, Kröner Verl. Stuttgart 1971, 4th ed., Taschenausgabe Band 224, Übers. v. Horneffer, page 265 and note 4th book no. 39 page 688
- 17.2 citation from it, page 280, par. 77
- 17.3 citation from it, page 279, par. 76
- 17.4 citation from it, page 276, par. 67

Lesson 18

Homer, the Most Prominent Broadcaster

However, I would like to put the amusing book of Herodotus aside now because you could see from the quoted passages that he has been a keen observer of his time, but he was just as little knowledgeable in the actual broadcast technology as his contemporaries. His tireless efforts in the secret broadcast technology of the gods are only due to his typical curiosity as a scientist.

The radio reporters have a fundamentally different relationship with their medium. They do not need to understand the functionality of the broadcast technology, and they also do not bring it into question because they simply apply. It is only important for them to know the technical and journalistic possibilities of the medium in order to use them efficiently.

Radio reporters play at all times and played at that time an eminently important role. I will give you some examples with that you may perceive for yourself where the Greek mythology has its true roots.

Perhaps the most prominent radio reporter was Homer. He had been very successful because he has always contrived to please the gods and to captivate his audience. The more he was able to gain the trust of the gods or their representatives, the more information were delivered to him about their private life.

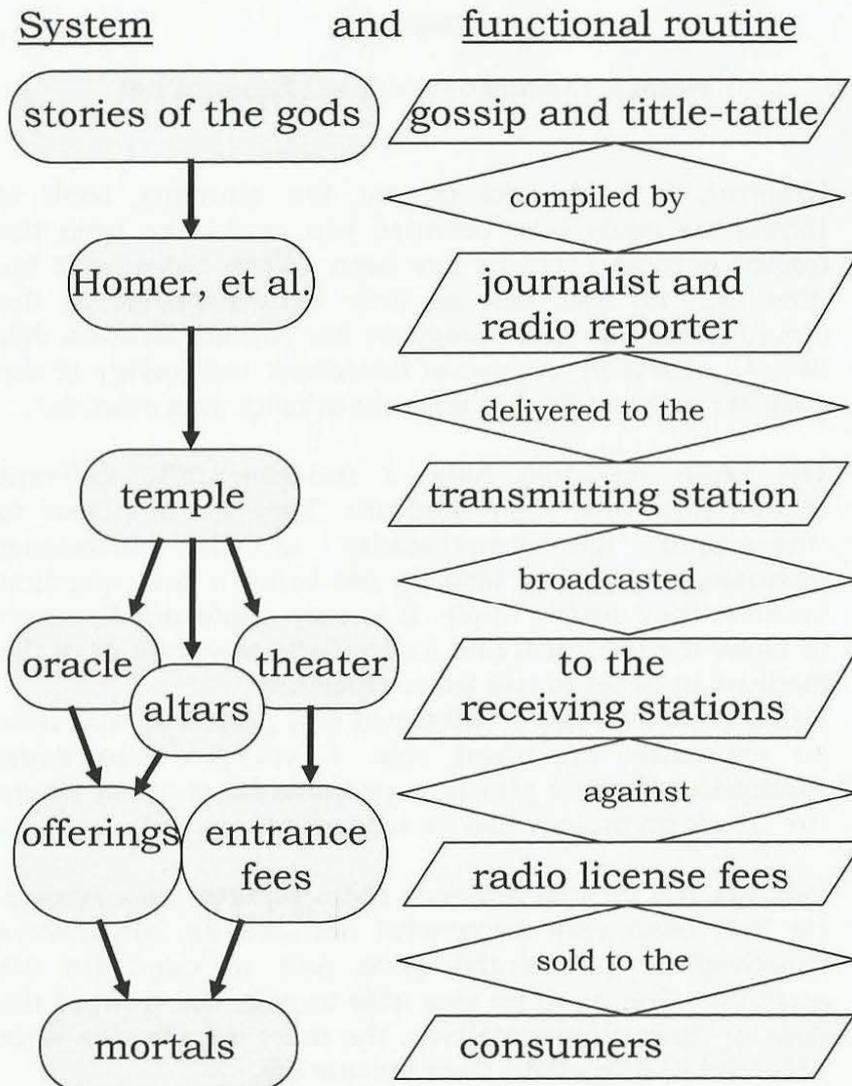


Fig. 18.1: system and functional routine of the realm of the gods in the classical antiquity

He packed these stories in a pictorial and a poetic form and let them spread over the network of the Greek gods with which he could satisfy the curiosity and the sensationalism of his audience. The people then assembled in the theater to keep informed about the latest gossip of the gods by the priest of the oracle. They knew how to awaken a media interest and the needs of the consumers in order to satisfy these demands against offerings and other entrance fees again. In this way, they had not only satisfied and religious listeners, they also increased the popularity of the realm of the gods and their broadcast technology.

Whether the radio reporters liked it or not, they became headliners and darlings of the public as well as at all times. They performed the capacity of a press spokesman of the gods at the same time. You have to assume that the reports had been censored by the gods before they were allowed to go on the air. A free and uncontrolled broadcast system has actually existed at no time in the history. This is unfortunate, but a logical consequence of the immense power that arise from the broadcast stations and their godlike intendants.

The reporters and the press spokesmen had to stick to some guidelines. For example, they were not allowed to reveal to the audience from which temple has been broadcasted and where the gods currently reside. They often did not even know it themselves. However, if the curious people were interested, they were told that the Olympian gods would live on the Mount Olympus, the sea gods in the sea and the underworld gods in the underworld. The answer was subtle because it allowed the gods to stay under the terrestrials at any time and to

vanish in the next moment again to report over the air from a dedicated temple of him.

From the perspective of ordinary people, the gods have developed new superhuman dimensions of time and speed by the broadcast technology. In an instant, the Olympian gods can swing down from the rocky heights of their residence on Mount Olympus to the Greek cities, and it is said that Poseidon could get in three or four steps from the Thracian Samos to Aegae on Euboea.^{18.1}

The existing myths today are based on historical facts as far as the reporters had been thoroughly researched enough and have not overused the poetic freedom or have delivered whitewashed descriptions for the sake of any gods. The pictorial and poetic language served only to conceal the terrestrial references a bit because this could weaken the position of power of the gods. Purely historical interpretations were undesirable such as of the atheistic philosopher Euhemerus who lived 600 years ago at the court of the Macedonian king Cassander. In his view, all gods are people who are only worshiped as gods because of their great power and wisdom.^{18.2}

You have to read the journalistically prepared descriptions of Homer and other press spokesmen of the gods with the necessary critical awareness and to establish the appropriate historical references for the used images.

The contributions of the tabloid press and sensationalism are always just a mixture of what the consumers want and expect and how the "heroes" and the "headliners" want to be portrayed in public. As you can imagine, there remains no place for a neutral reporting, free and independent journalism remains an illusion, and something like journalistic responsibility towards the community is pure cynicism.

References and notes on lesson 18:

18.1: Otto Seemann: Die Götter und Heroen der Griechen, (1869), Fourier Verl. Wiesbaden 1989, page 8

18.2: note from it, page 4 and 5

Lesson 19Hesiod Describes the Reorganization
of the Broadcast Landscape by Zeus

Historians are always zealous in their reports to understand the current affairs and to reflect the way of thinking.

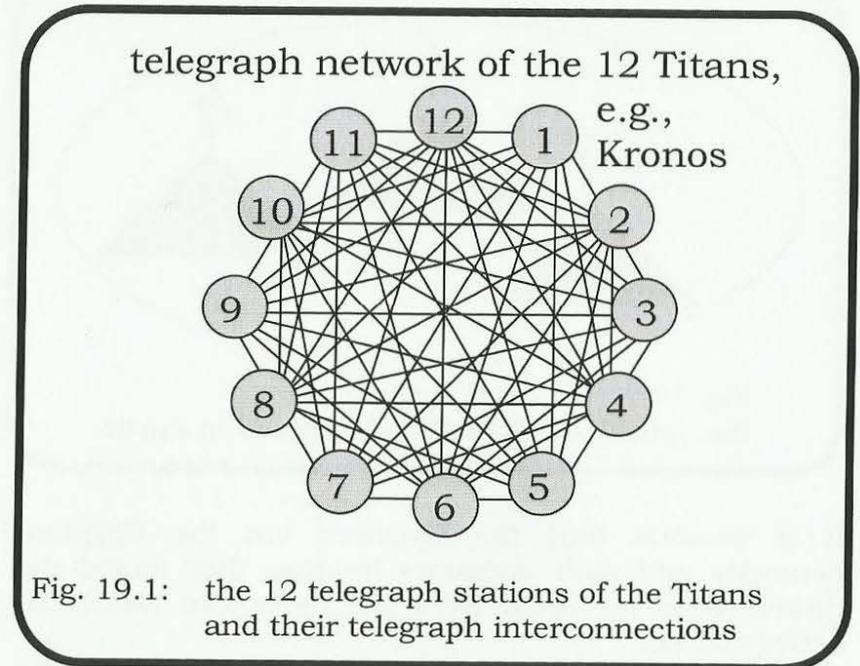
However, journalists and radio reporters take smaller pains with this and usually deliver descriptions of the present which relate to their own lifetime and experience of the world. All further events in the past are awfully shortened in their reports. Centuries and millennia shrink as if everything happened just yesterday. If you do not consider this circumstance, it is difficult for you to connect the dots of a historical reference in the Greek mythology. Therefore, it is important to know when an article has been written and broadcasted for the first time.

An example is the work of Hesiod who lived 1000 years ago and did not want to remain anonymous unlike other reporters of his time but has personally taken full responsibility for his reports. Therefore, I am of the opinion that his statements are quite reliable.

Hesiod has written his investigations in hexameters which could spread over the air with the help of the gods, and they yield the following picture:

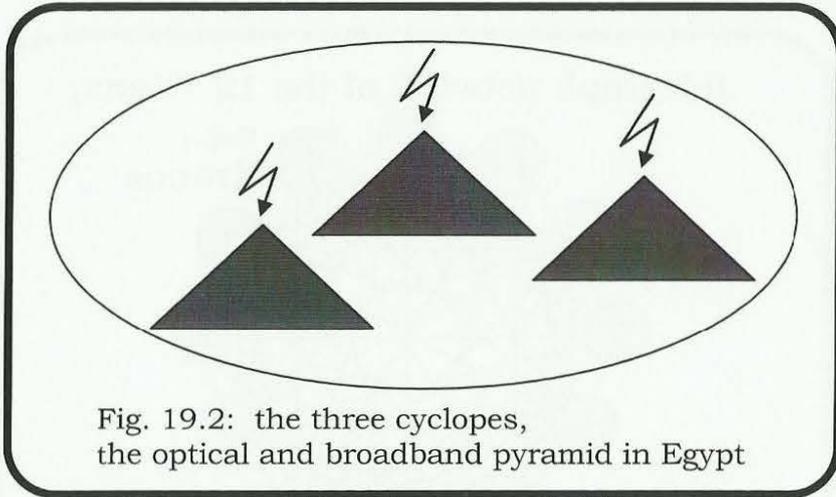
the oldest of gods are the twelve Titans. There are six male and six female who have shared the tasks of scientific research and development between them. To give just one example, Kronos was the father of Zeus as his name suggests and among other things responsible for the determination of the broadcasting hours.

The known Titans denote a transmitter and a receiver. Their number had increased steadily and reached the number twelve in its full expansion stage. Therefore, there existed twelve telegraph stations by which a conversation of the gods was possible in a conference circuit. This implies that all could listen if two Titans on duty telegraphed with each other.



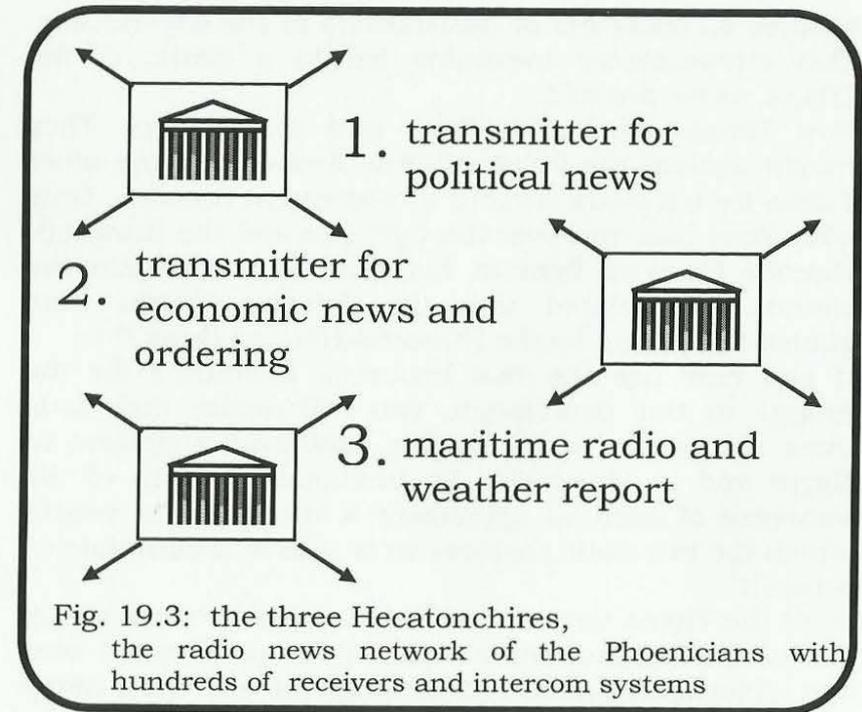
According to the descriptions of Hesiod, it was probably the Sumerian and Babylonian transmitting and receiving system which has enlarged the ranges beyond Mesopotamia over time by improvements in technology. The Titans probably spread from the Nile to the Indus. Crete was certainly also one of the twelve stations

because Zeus was born here and his mother Rhea who was one of the twelve Titans just like his father Kronos. However, the Titans could not claim the ether for themselves alone. Other mentioned operators of the transmitters were three Cyclops and three Hecatonchires who are the so-called Hundred-Handed Ones.



It is obvious that the Cyclopes are the Egyptian pyramids and their operators because they forged the thunderbolts for Zeus. Even the name can hardly be better chosen.

Hundred-Handed Ones is a proper description for the Phoenicians with their innumerable wooden temples which were distributed throughout the Mediterranean with a smaller and thus higher frequency.



In fact, the Phoenicians had also three main gods. One of them was called Aegaeon. He was probably responsible for the radio communication in the Aegean Sea.

Due to the large and achievable short-wave range, interferences from other transmitters, conflicts of interest and military conflicts were the logical consequence. While the number of temples constantly increased, uncontrolled chaos threatened on all channels.

A new world order with a dominant and decisive father of the gods was a promising solution to the problem. However, before Zeus was able to establish that, he had

to force all operators of transmitters in the dependency. This circumstance inevitably led to a Battle of the Titans, as we are told.

Two Titans sided with Zeus and his siblings. They fought against the father of Zeus Kronos and the other Titans for ten years without a consequent decision. Only after Zeus had won over the Cyclopes and the Hundred-Handed Ones to fight at his side, he could gain the victory. He ordered that the defeated Titans were guarded in prison by the Hundred-Handed Ones.^{19.1}

If you now use the real historical references for the images in this description, you will realize that Zeus owes his victory to the mighty broadcast engineers in Egypt and in Phoenicia. An unmistakable sign of the existence of such an agreement is the immense wealth which the two trade partners were able to accumulate as a result.

After the Titans were defeated, Zeus could choose any of the twelve locations as a seat for his government over the airwaves. He could also change at any time. Many hints suggest that he has preferred Egypt as the headquarters of his power. In Egypt are powerful transmitters which can be received from the Atlantic to the Indian Ocean. Upper Egypt is almost certainly secured by the desert against surprise attacks. Here are also the pyramids which he needs to hurl lightning if required. Therefore, reasons for such a decision were plentiful.

In order to govern the rest of the world, Zeus was also dependent on the support of his family members. Leto, the most important oracle priestess of Egypt and a daughter of the Titans, had given birth to his two children Apollo and Artemis who he sent to the Hellenes. As we know, both were extremely successful from a missionary point of view.

According to the descriptions of the tabloid press, Zeus is frequently unfaithful. This absolutely corresponds to his boundless claim to power. When the beautiful Alcmena from Tiryns had to seek refuge with Creon who is the ruler of Thebes, Zeus was stirred by an invincible love. He impregnated her and she gave birth to his son Heracles.

He employed this son with special tasks. Therefore, he could win the fight against the Giants with his energetic support. The Giants are probably the elite troops of a mercenary army who had been sent on behalf of the imprisoned Titans to the Thessalian mountains to fight against Zeus and his people. In gratitude for the victory, Heracles was taken up into Olympus by his father Zeus. This means that he became a functionary, and this function has been associated for all time with the name Heracles. In this way, the demigod achieved immortality.

Since the Alexandrian time, we know that Heracles is equatable with the Phoenician god of the sun Baal.^{19.2} However, it was an arduous path from a demigod to a god even for Heracles.

References and notes on lesson 19:

- 19.1: Gustav Schwab: Sagen des klassischen Altertums, Ueberreuter, Wien 1974, ISBN 3-8000-2919-7, p. 565
- 19.2: Otto Seemann: Die Götter und Heroen der Griechen, (1869), Fourier Verl. Wiesbaden 1989, p. 285

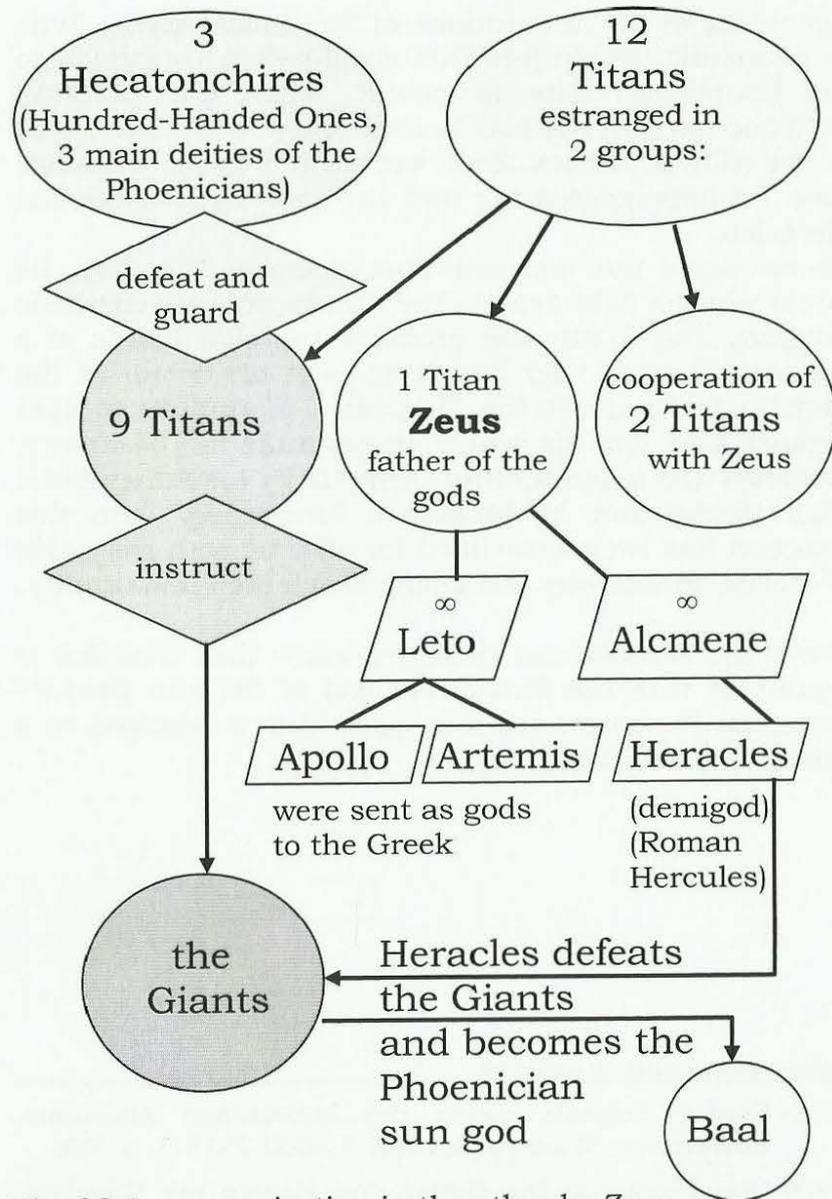


Fig. 20.1: reorganization in the ether by Zeus

Lesson 20

Heracles (Roman Hercules), the Traveling
Service Technician of the Gods

Heracles had to accomplish ten tasks which were primarily useful for the organization in the ether. The oracle of Delphi had demanded this of him if he wanted to be immortal. In this way, it confirmed an instruction of the father of the gods Zeus. Two more special tasks should be later added.

You must take into account that Zeus with his family had set the objective to rule the airwaves alone. Therefore, he did not only get into trouble with the Giants. Greece alone filled the airwaves in his time with numerous smaller transmitters especially in the upper frequency range. If Heracles wanted to claim an own frequency as a god, he had to create an appropriate space in the ether in the first place.

He was dealing particularly with the indigenous nature religion which stem from Typhon and Echidna. His opponents were portrayed in the legends and tales as horrible monsters or wild animals.

1. As an individual action, Heracles could kill the Nemean lion residing in a crevice. He strangled him—in other words, he has unceremoniously cut off the power of this annoying license dodger who do not want to pay his license fee. As a consequence, every other reception was quasi strangled.

- | | |
|---|--|
| 1. <u>Nemean lion</u>
<i>(license dodger)</i> | is strangled
<i>cut off the power)</i> |
| 2. <u>nine-headed hydra</u>
<i>(outdated jammer)</i> | is burned out
<i>Heracles suffocates the technicians)</i> |
| 3. <u>Erymanthian boar</u>
<i>(broadcast device)</i> | is caught alive
<i>was still in operation)</i> |
| 4. <u>Ceryneian hind</u>
<i>(mobile transmitter)</i> | is transported
to Mycenae |
| 5. <u>Stymphalian birds</u>
<i>(broadcast technicians)</i> | are banished
<i>(by the help of a jammer)</i> |

Fig. 20.2: overview of the commission works of the service technician Heracles on behalf of the gods

2. He already had bigger problems with the hydra. A nine-member team with one who had the function of an immortal god operated a plant in a cave near the sources of the Amymone. Such natural sanctuaries are extremely disturbing for the competition due to their enormous wideband. You can also say that they were not contemporary and technically outdated.

Before the team left the plant which had been set on fire with flaming arrows by Heracles, they were still able to quickly put out an SOS distress call to request more fighters. Therefore, if Heracles had beheaded a fighter, two new ones were sent against him. To overcome the growing superiority, he set the surrounding forest on fire to burn out the whole complex.

3. Heracles caught the sacred Erymanthian boar of the goddess Artemis alive as ordered. You have to imagine that the broadcast device was still in full operation as the hero took it off the goddess and stole it.

4. The also sacred Ceryneian hind of Artemis normally operates a portable transmitter on one of the hills of Arcadia in the form of a cage with iron feet as a potential ground and with gold antennas. At least something like it is described to us. Heracles had big problems to locate the site. He sought in all sources and took a whole year before he was able to find the device and bring it in a working order to Mycenae.

5. The Stymphalian birds were banished by Heracles on the island Aretias after he had made every broadcast impossible by interfering signals on the used frequency. Hephaestus had manufactured the required jammer, and Athena has brought the device to the hero.

- | | |
|---|---|
| 6. <u>stables of Augeas</u>
<i>(defective receiver)</i> | river is passed through
<i>(repair of the "power supply")</i> |
| 7. <u>bull of Crete</u>
<i>(pirate radio station on Crete)</i> | removal of the temple
<i>(pirate radio station is brought to Marathon)</i> |
| 8. <u>Diomedes chains strangers</u>
<i>(people are forced for reception)</i> | Diomedes is caught and delivered to Hera |
| 9. <u>belt of the Amazon Hippolyta</u>
<i>(receiver equipments)</i> | is taken along
<i>(trick of agents)</i> |
| 10. <u>cattle of Geryon</u>
<i>(Hera warns by radio and the radiocommunication is aborted)</i> | are procured
<i>receptionist is wounded</i> |

Fig. 20.3: overview of the commission works of the service technician Heracles on behalf of the gods

6. The plant of Augeas was literally a stable, but the operator was incapable to reestablish the technical function. Therefore, he was initially willing to accept Heracles as a cooperator and participate him in the broadcast revenues with ten percent if he is helping with the repair. Heracles completed the task by rerouting a

river through the plant which brought about a sufficient supply of energy.

7. The bull of Crete was the name for a pirate radio station which caused jamming on the island of Crete. King Minos personally helped to dismantle the wooden temple. Heracles used the wooden structure as a boat in which he was able to travel back to the Peloponnese. I would like to add that they had failed to permanently hinder the operator of the pirate radio station from doing new actions. Therefore, he could continue his illegal business at a different location, namely at Marathon in Attica.

8. Diomedes was successful with an unconventional and misanthropic receiver technology. He caught all strangers and chained them on an iron dish for reception. The tripods originated as a development from this technology later.

Heracles made short work with Diomedes. He put him also in chains and delivered him with the other servants to his principal who delivered them to the goddess Hera for further use.

9. Even the Amazons probably dealt with the receiver technology. The interest was the belt of the Amazon Hippolyta this time. Whatever it is, Heracles has stolen it as ordered.

If you have followed the stations from Greece and its islands to Crete (7), to Thrace (8) and to Asia Minor (9), you recognize immediately that the sphere of action expanded slowly.

2 special tasks:

- | | |
|---|---|
| <p>11. <u>golden apples of the Hesperides</u>
<i>(use of the devices is still unknown to the intelligence!)</i></p> | <p>should be fetched and Heracles get them!
<i>Athena personally carries them back. (misfortune of agents!)</i></p> |
| <p>12. <u>hellhound Cerberus</u>
<i>(broadcast rivalry of the underworld)</i></p> | <p>bring order into the underworld
<i>(Showdown of agents)</i></p> |

Fig. 20.4: overview of the commissional works of the service technician Heracles on behalf of the gods

10. Heracles had to procure the so-called cattle of Geryon even from the island Erythia which is located in the west of Cadiz in the Atlantic. To easier find the entry in the Strait of Gibraltar again, he constructed the pillars here which are named after him. He borrowed from the sun god a sufficiently seafaring boat for the Atlantic. After the mother of the gods Hera announced to Geryone by radiophone to aid him, the hero wounded the receptionist without hesitation to break the radiocommunication.

He had strangled the local main deity in Libya already on the way and disabled as many transmitters as he had been able to find. The stress mark of him and his

army continued through the desert and along the north African coast as well as across Spain and Italy on the way back.

It happens sometimes that a technical device no longer behaves as expected just after the service technician leaves the house, as you surely know it. His principal did not accept two works, and that is why Heracles had to deliver two more.

11. It was necessary to get hold of the golden apples of the Hesperides. Since the hero did not know where to look, he went from a receiving station to the next, to nymphs and to a fortuneteller. They sent him from Libya and Egypt to Ethiopia. He was conspicuous by his exploits everywhere. He crossed over to India, freed Prometheus in the Caucasus and traveled on the edge of the known world to the far north where he received the apples from Atlas. However, nobody could do anything with these, and that is why Athena carried the apples back in the garden of the Hesperides. Either Heracles had not brought the equipment which they had been imagined, or they were just not familiar with the use.

12. The last task included the hellhound Cerberus. Heracles first sought competent priests in Eleusis who used the required knowledge for the upperworld and the underworld. Unfortunately, I do not know what he has learned from them because it was still a secret knowledge. He went in the underworld with this secret power to the mighty competition of the gods. You could also say that the priesthood incited him. He was accompanied at the conference by the Olympian gods Hermes and Athena. As an inveterate warhorse, Heracles certainly relied more on his muscles and

weapons than fine words. Therefore, he vigorously beat the team up and let also the king Pluto of this dead city feel the agony of a mortal.

The question certainly arises where Hades is located and where this meeting of the representatives of the two worlds has occurred. They obviously had blocked the view or blindfolded the Olympic participants during the journey. It is possible that the aforementioned dead city was the Valley of the Kings in Upper Egypt. Unfortunately, I can not tell you more details because I still only have the fabled and mythical descriptions available which Homer, Hesiod and Apollodorus have delivered.

You should know in addition that since he has become a god himself, the fourth day of each month is sacred to him. That means that it is broadcasted in the name of Heracles on his frequency on that day.

References and notes on lesson 20:

- 20.1: Otto Seemann: *Die Götter und Heroen der Griechen*, (1869), Fourier Verl. Wiesbaden 1989, p. 286-292.
 20.2: Gustav Schwab: *Sagen des klassischen Altertums*, Ueberreuter, Wien 1974, ISBN 3-8000-2919-7, p. 142 ff.

Lesson 21

Caesar and His Efforts to Obtain the Expertise
of the Broadcast Technology

The Roman writer Varro has even enumerated forty-four different sources of Heracles. Incidentally, the hero is worshiped under the name of Hercules here. Not only

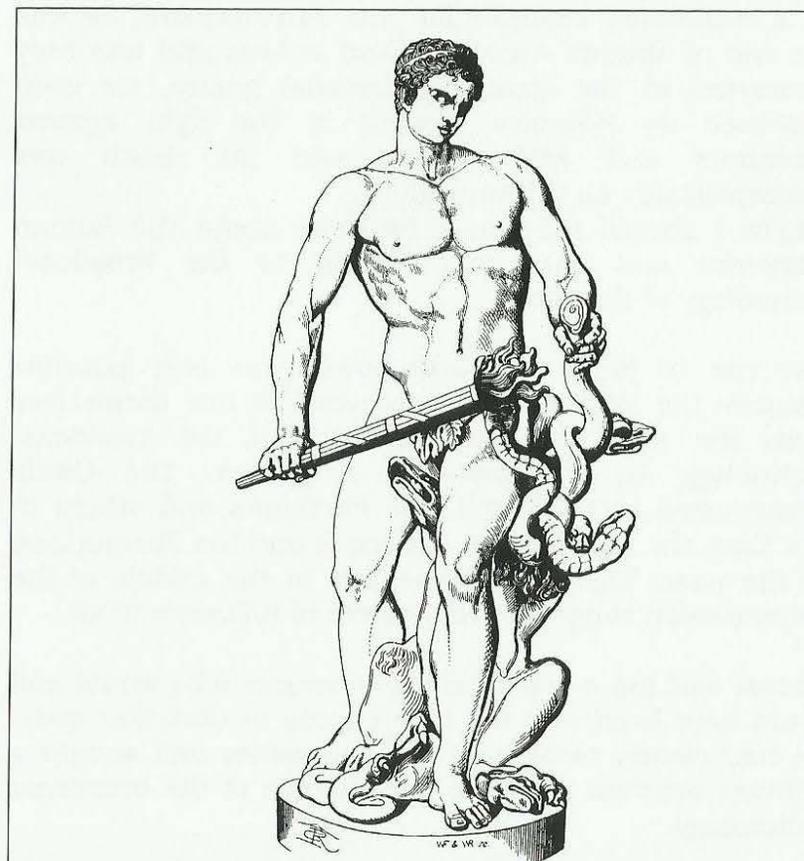


Fig. 21.1: Heracles with the hydra, Capitoline Museum^{21.1}

Greek but also Egyptian and Phoenician elements are present in his myths. Especially in the cycle of sagas of Hercules, it is clear that a cross-border connection has existed by the old family of the gods before the peoples of the Roman Empire could have one in the past.

The emperor Commodus particularly liked to be represented as vigorous Hercules. He has written a dark chapter in Roman history and can be rather portrayed as a cautionary example for you. Furthermore, he was the son of Marcus Aurelius, lived vicious and was only interested in the bloody gladiatorial games. He even appeared as Hercules himself in the fight against gladiators and wild beasts, and his death was unsurprisingly an unnatural.

Maybe I should tell you a bit more about the Roman emperors and their relationship to the broadcast technology of the gods.

The rise of Rome to world power was only possible because the Romans had succeeded to free themselves from the grip and the influence of the broadcast technology by the powerful neighbors. The Gauls broadcasted in the north, the Parthians and others in the East, the Ptolemies in the south and the Phoenicians in the west. Therefore, Rome was in the middle of the transmission range and the sphere of influence of all.

Caesar was not a self-satisfied consumer who would and could have lived with the heteronomy by dissident gods. He had clearly recognized the necessities and sought a military solution from the dependence of the broadcast technology.

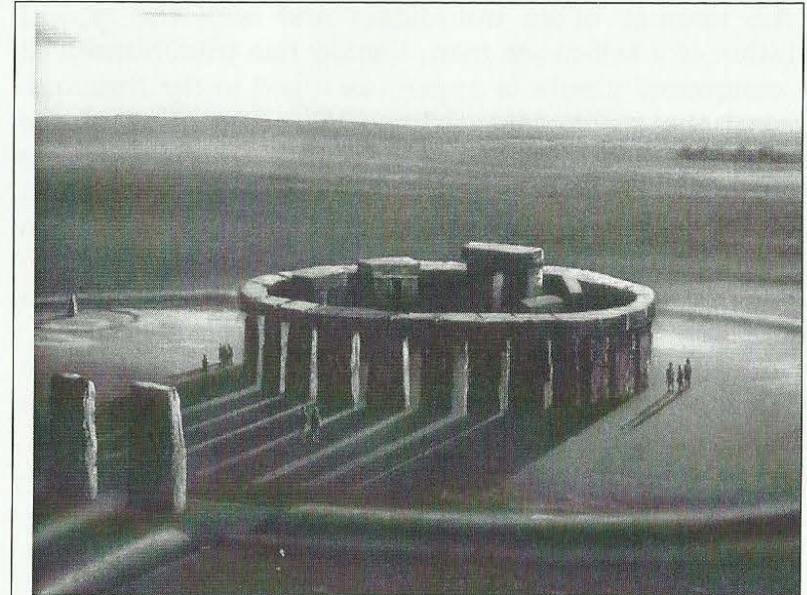


Fig. 21.2: Stonehenge^{21.2}

In the course of the conquest of Gaul, he probably learned for the first time about the structures of transmitters which were constructed of stone circles and menhirs as it were just common in northwestern Europe. Unfortunately, he could not just take and activate it by himself because there intentionally existed no record, and the Druids took care to reveal the secrets. Therefore, the Romans had only the one alternative to destroy the plants.

During the two armed campaigns of the reconnaissance to Britain, Caesar had been able to put some plants out of operation. However, he had not even found many because of the large number. Thanks to the dominant wood construction, some gutted sanctuaries were also relatively rapidly rebuilt, and they all agree today that the two campaigns to Britain turned out to be a flop.

In the manner of an autodidact and with the typical ambition of a self-made man, Caesar has tried himself at the conquered plants to appear as a god to the humans. Without the many years of specialized training of the Druids, he has put his own health at risk by his ignorance of the dangers. From the number of visions which Caesar had, you can see that he has also been able to refine his receiver technology. Undoubtedly, he has learned a lot about the divine technology in this way.

For questions regarding the broadcast technology of the Phoenicians, the adjutant and advisor Lucius Cornelius Balbus from Cadiz stood by his side who was Phoenician origin to my knowledge.

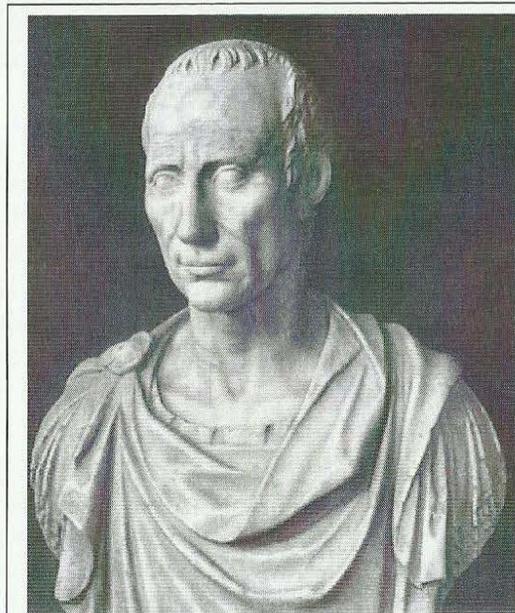


Fig. 21.3: Julius Caesar^{21.3}

The Egyptian broadcast technology could be explained to Caesar by his lover Cleopatra who he sat on the throne of the Egyptian Pharaoh while he had previously defeated and killed her half brother Ptolemy XIII. You can see by this clever move that the control of the transmitters was even for Caesar more important than the possession of land and people. Otherwise, he would have instated himself as pharaoh as the Greek ancestors of Cleopatra had already done.

Since Caesar followed a very similar objective in the view of the broadcast technology of the gods as Alexander the Great before him, his plans seem logical to care also in Asia for a long overdue reorganization of the broadcast landscape under his control. The planned campaign against the Parthians had been stopped only three days before the army marched out by the assassination of Caesar, and that remained as an open hypothec of the Romans to this day. It would certainly be desirable if perhaps you, dear Constantine, should succeed to redeem this sometime.

Caesar had been able to bring at least the broadcast technology of the Mediterranean largely under control and thus created the conditions for a reorganization of the broadcast landscape with the new master control room in Rome. There has been much speculation about the motives of the members of the senate who have planned and carried out his assassination. The perfection has certainly also played a role with which the self-taught Caesar had now learned to deal with the divine broadcast technology. The augurs and the college of priests had got a powerful competitor who increasingly controlled them and was well on the way to control them completely.

Caesar had enough enemies and offered enough motives to murder him. We may never know the real reason why Caesar had to die; whether his quest to control the ancient broadcast technology has possibly played an essential role here, as I suspect.

References and notes on lesson 21:

- 21.1: Otto Seemann: Die Götter und Heroen der Griechen, (1869), Fourier Verl. Wiesbaden 1989, p. 303
- 21.2: Die frühen Hochkulturen, Time-Life 1991, p. 123
- 21.3: Michael Grant: Roms Cäsaren, Gondrom Verl. 1987
- 21.4: Alfred Heuss: Römische Geschichte, Wissenschaftliche Buchgesellschaft Darmstadt, 4th ed. 1975
- 21.5: E. Horst: Caesar, Eine Biographie, Classen Verl. 1989, Düsseldorf

Lesson 22

The Key to the Broadcast Technology, the Secret Scrolls of Alexandria

Have you ever been in Alexandria? If you come from the sea, the huge lighthouse shows you the way to the port. It is called a wonder of the world, and his light even shines far beyond the Mediterranean like no other.

The magnificent and powerful city of Alexandria was the seat of government of the Ptolemies which could not even compare with Rome at that time. Without exaggeration, the center of Western culture was here because the largest library of its day with over 900000 scrolls was located here. The free spirit of science was noticeable throughout the city. Scholars from around the world met here to work and research.

Of course, Caesar was also attracted to Alexandria because he was not only a brilliant military strategist but he was also very inquisitive and educated. he read or put own thoughts on paper at all free minutes.

Therefore, he was annoyed by a calendrical problem which he solved with the help of the Greek mathematician Sosigenes of Alexandria by adding 90 days in the calendar. In this way, the year 46 BC as "annus confusionis" took once 445 days.

Caesar felt not only attracted to this center of science but he was even dependent on it to a certain extent. Finally, he wanted to learn everything about the broadcast technology, and the library of Alexandria was a veritable treasure trove for that reason. Ancient scriptures and temple books were stored here with

references to fluctuations of the terrestrial radiation and the energy supply for our transmitters and receivers.

All findable Babylonian scrolls were carried here with countless astronomical records and calculations. There were also detailed plans to build transmitters and receivers with all specifications as well as detailed manuals for practical use, technical operation and maintenance of the facilities.

The scrolls of the broadcast technology of the gods were in an adjoining room which was closely-guarded by a conscientious librarian. Only authorized priests were allowed to enter the room by the gods because it was supposed to remain a secret knowledge.

Of course, Caesar had no legitimacy as he came to Alexandria in the year 49 BC. Alternatively, he had brought along an entire army for that reason. If they had risked and maybe the librarian has even tried to preclude the access to the secret archives for Caesar, he would have achieved it by force. Caesar has put what he has taken into his head also into action without hesitation.

Furthermore, it had to disturb the great Caesar that the hub of the world with regard to science was Alexandria and not Rome. Therefore, his concern had to be to bring the stock of the entire library to Rome if possible. Naturally, the scientists would then follow.

However, the famous library experienced its first major disaster on the occasion of the high-ranking visit; it was suddenly in flames! Unimaginably valuable stocks were destroyed in the process. No one knows who started the fire: was it the librarian himself, or were it the envoys of

the gods who wanted to protect the secret knowledge against the unauthorized access?

It was certainly the ultimate and final means which had to be used here after the unpredictable Caesar and his clever tactics could otherwise not be stopped.

Nevertheless, Caesar was also faster this time. He quickly grabbed the most important writings from the secret archives before the flames could strike and brought them to Rome. They have been kept strictly secret there and guarded by a Roman librarian this time. Only the one who is the Pontifex Maximus may read these writings!

It is the advance in knowledge which distinguishes the chairman of the Roman college of priests and not the function as such. Caesar has certainly done a great job; and that is how it came that the Roman emperors had also held the task of the Pontifex Maximus. Only they could and were permitted to know the content of the writings.

Nothing has changed until today. The writings or what is left of it after the fire in the palace of Nero are in the possession by the Pontifex Maximus and quasi serve him as legitimacy and as identification.

However, note the subtle difference that the imperial dignity is not linked to the possession of the secret documents but only the highest priesthood. You want to know which of the two administrative bodies possess the greater plenitude of power?

I think that the media representative was more powerful than the governor at all times. Initially, everyone says that he is more powerful than the other, the emperor because of his secular importance on the one hand, and

the Pontifex Maximus who sees himself as the representative of god on the other.

Of course, you are right that if you want to bypass the problem, you put the two administrative bodies together as Augustus, but just the Roman history shows the difficulties very clear of such an accumulation of offices which such a god-emperor such as Nero have brought us. I reject such a solution from personal conviction.

Naturally, the question of power currently arises in the case of the separation of functions. Perhaps it is answered from case to case by pointing out who puts the crown^{22.3} on which head here.

You need to know that the secular rulers with these receiving antennas on the head perform as they are told by the broadcast technology. The coronation is a technical measure to telepathy by which the high priest as a representative of a god makes the rulers his mindless servants. As already said, he derives the legitimacy from the ancient and secret writings because knowledge, my dear Constantine, is power!

References and notes on lesson 22:

22.1: Michael Grant: Roms Cäsaren, Gondrom Verl. 1987

22.2: Alfred Heuss: Römische Geschichte, Wissenschaftliche Buchgesellschaft Darmstadt, 4th ed. 1975

22.3: Krone, ägypt.: Pschent; lat.: Corona, Diadem

Lesson 23

The Technology of Telegraphy and the Rotation of the Polarization Plane

The broadcast technology developed further and has been continuously perfected. If a fundamentally new principle was introduced, it did not necessarily mean that the old, steadily improved and proven technology was abolished immediately afterwards. In this way, I count at least four different technologies today that exist side by side, and I want to explain them to you now.

The oldest technology is the simple telegraphy. Initially, the broadcast temple must be brought to oscillate. If this oscillation is interrupted in a rhythm which the technician on duty specifies, the radiated high-frequency carrier signal is also switched on and off in this rhythm and arrives then at the receiver in the same way. The receiver can make notes of the rhythm. Experienced oracle priests read and do not make notes of the "twitter" but translate the message directly in a plain text even while watching the rhythm.

Although this technology may seem primitive, it shall nevertheless still be regarded as the most reliable way of the broadcast communication today. It is not without reason that it provides the backbone of the Roman army. The Phoenicians have perfected this technology. They even adjusted the number of their letters of their alphabet to the number of transferable rhythms.

If we want to perform an assessment, the simplicity and reliability speak for the telegraphy. A disadvantage is that only two states are possible: the temple broadcasts

or does not broadcast. This has the consequence that a serial data transfer must take place which means a lot of time and work for the priests on duty. Characters must be transered one after another, and if problems occur, the whole procedure must be repeated again.

This technology actually works only for short messages, telegraphic texts or military instructions. As you already know, an animal must be always freshly slaughtered for the extispicy by the oracle priest. The more time passes and the longer the text is, the smaller the convulsions of the entrails from which the rhythm is read until nothing is eventually visible at all.

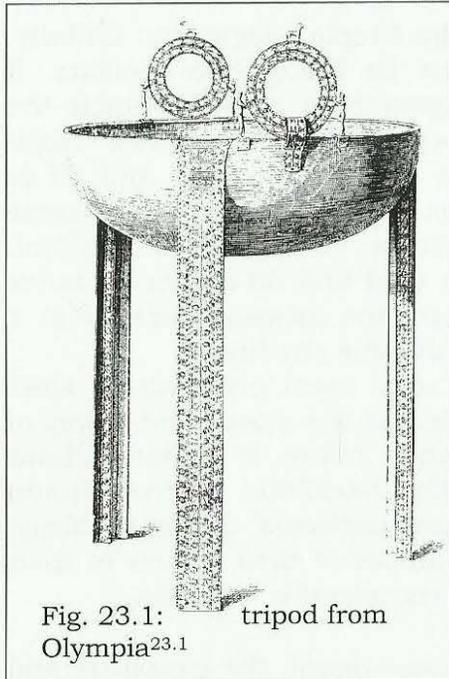


Fig. 23.1: tripod from Olympia^{23.1}

A more efficient technology should be used to broadcast over the air an entire epic such as of Homer. For this purpose, you have to use a dish as a receiver, a so-called tripod. This is divided by the cardinal directions, for example, in twelve segments. If the oracle priest measures the dish with a pendulum now, the amplitude always occurs in one of the twelve directions. In this way, twelve signs or possibly a complete alphabet can

equally be transmitted as parallel data transfer. The basis of this advanced technology is the polarizability of the electromagnetic wave.

This means that the transmitter is not only turned on and off but the high-frequency signal is also equipped with a sense of direction on the way which is then evaluated in the receiver.

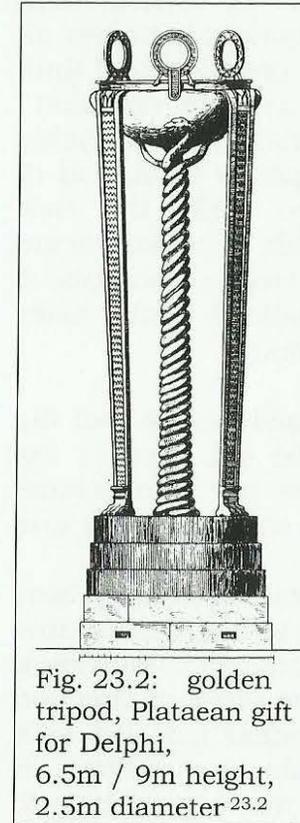


Fig. 23.2: golden tripod, Plataean gift for Delphi, 6.5m / 9m height, 2.5m diameter^{23.2}

With the introduction of this technology which was perfected by the Greeks, the numbers of oracle even decreased again because the evaluation of these signals did not only require special skills but also a frequency-selective dish as receiver. The remaining oracles who were able to use this technology enjoyed a special reputation.

Outright conflicts for the possession of the tripods are reported to us as the following example illustrates. After Heracles had completed his deeds, and they still refused to give him own transmission rights, he violently penetrated into the temple of Apollo in Delphi and took out the sacred tripod to build an oracle on his own.^{23.3} Only the father of the gods Zeus

could prevent this sacrilege.

If we want to make an evaluation with a polarized high-frequency carrier signal in the case of telegraphy this time, twelve different or more characters can be transmitted instead of just one. The processing speed is twelve times as fast. It now corresponds to the speed with which a text is spelled. In this way, longer and more coherent texts can be transferred.

As a further result, a suppression of interferences occurs. The signals of the old telegraphic transmitter as well as the interfering signals are not polarized and thus do not lead to a defined amplitude in a certain direction. The development of this new technology is probably necessitated because of the total capacity utilization of the ether by the old technology. With the new technology, the Greek deities were able to communicate relatively undisturbed. They did not need to worry about whether the other gods just radioed with older telegraphic technology on their frequency.

It must probably be regarded as a disadvantage that the new transmitters have disturbed the old ones in the reverse case and were able to prevent any conventional broadcast. This has logically led to confrontations and disputes.

As a further disadvantage, the new technology was much more difficult and complicated to handle, and this has not exactly contributed to its reliability. Individual characters mostly lacked in which the sense of direction was not recognizable, or a carelessness had led to a misinterpretation. Therefore, all texts were written in hexameters. The rhythm of the text was a great help to fill these gaps again. This language was actually never spoken; the rhythmic form of the hexameters is a pure artificial language.

In this way, traditional texts such as the Iliad and the Odyssey are an impressive proof of the efficiency of this system. The temple books are filled with appropriate written texts.

However, this technology got out of hand and was soon hardly controllable for the own gods who operated it. From this moment on, the system of polarized waves was largely abolished again because the function of the Pontifex Maximus was in the hands of the Romans. As reasons can be cited that the military could not deal with tripods, and only few oracle places were known for this receiver technology on which it worked to some extent; furthermore, the focus is on reliability and range for the military in the first place.

However, the most important reason is that the Romans are in the process to develop a much better technology to the deployment about which I want to tell you now.

References and notes on lesson 23:

- 23.1: A. Springer: Die Kunst des Altertums, A. Kröner Verl. Leipzig 1915, 10. Aufl., p. 140 fig. 284
- 23.2: from it on p. 231 fig. 433
- 23.3: Otto Seemann: Die Götter und Heroen der Griechen, (1869), Fourier Verl. Wiesbaden 1989, p. 293

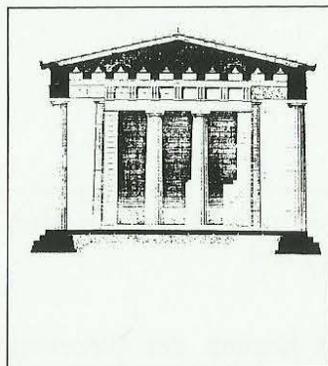
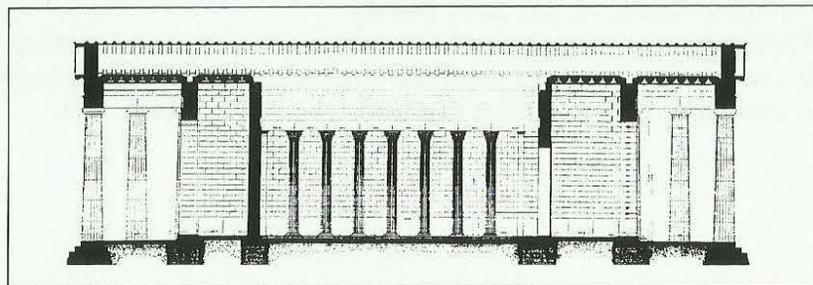
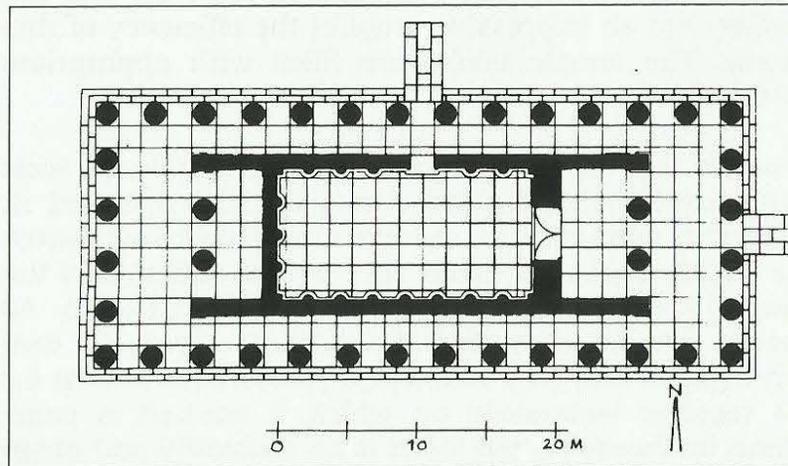


Fig. 24.1: Tegea,
the temple of Athena Alea^{24.1}

7.5 MHz transmit frequency
 $\lambda = 40$ m wavelength
 $l = 20$ m cella length ($= \lambda/2$)
 $b = 10$ m cella width ($= \lambda/4$)
 $h = 16.2$ m height ($= \lambda/4 \cdot \Phi$)
 with:
 $\Phi = 0.618$ golden ratio

Lesson 24

Aristotle and the Voice Transmission in AM Technique (Amplitude Modulation)

The two modern and promising technologies are the so-called voice modulation to broadcast the spoken word. In my view, this is the coronation of the broadcast technology, and we are still at the beginning of this development, I am convinced of it.

The main difference with the previous method is that the broadcast temple is no longer rhythmically turned off but continually oscillate. This is even a technical simplification at first. The real difficulty is that this high-frequency carrier signal is modulated with the speech signal now as it is called in the technical language. You have to imagine that the spoken word is given in piggyback to the high-frequency vibration on the way. In this way, it passes from the transmitter to the receiver over the air.

As you can see, I have brought here the writings of Aristotle about the oldest metaphysics because I am of the opinion that here the gifted technician should get a chance to speak who has laid the foundation for this new technology and wanted to introduce and enforce it worldwide with the help of his pupil Alexander the Great.^{24.2}

Of course, all natural philosophers of that time had still the conviction and execution of Socrates in mind which is why it was unadvisable to express captious words in the writings about the broadcast technology. Therefore, Aristotle adopts the words of Simonides that only god has the prerogative to adopt science. "The human

should only seek science according to his appropriate entity," he writes^{24,3} and puts himself in chains as a consequence which stand in enormous contrast to his free spirit of research.

Based on the theory of electromagnetic waves which he explains with his theory of the elements, he argues that "god is a principle" and that the divine science is also the most valuable, "there is no higher.... This would tell us now what is the essence of the wanted science, and what should be the objective of the research and the entire investigation," Aristotle says and thus tells quite clearly which objective he actually pursues.^{23,4}

After the death of his pupil Alexander, Aristotle was accused of godlessness, left Athens and died a few months later at his country estate in Chalcis in 322 BC.

The suspicion against him was not justified because of his writings but his deeds! He wanted to reorganize the realm of the gods, and there were compelling needs. The voice modulation and transmission could not be done with the mess in the ether in his time. According to him, a single god had to determine the management of the broadcast rights, the frequencies and broadcast times.

Aristotle had been able to convince his pupil Alexander of this objective. Therefore, he then started to conquer the world of broadcast technology by force of arms. In fact, he managed to be celebrated as a pharaoh in Egypt and forced the other major broadcast stations from Babylon to the Indus under his rule. His companions and the soldiers did not always have an understanding for his actions because he could not tell them what objective he really pursued. It is certainly no coincidence that the journey was just over for Alexander in Babylon,

and he died of a mysterious wound fever. What he can not bring under control to this point yet were Sparta, Crete and Carthage which controlled the western Mediterranean. Only us Romans should succeed in subduing the mighty Phoenicians.

Let us turn to the technology. The design of the temple was initially maintained, and only their operation has been changed. We know from the Delphic Pythia that she gave unintelligible sounds when she bent over her tripod. It was the task of the priests to turn it into a comprehensible text in hexameters in archaic times and apparently later also in prose. We learn from this tradition that the voice transmission was occasionally used in recent times already.

In technical terms, this technique is called AM as an abbreviation of amplitude modulation. It is operated with a fixed carrier frequency which is why the cella has a constant length corresponding to the half wavelength as before. In this method, the sounds are hitched to the high frequency carrier wave. If it helps your imagination, you can compare the process of modulation with a mounted courier where the horse is the "carrier" and the rider is the transported information, but this works only much faster as fast as light!

If we consider the isolated and rare cases in which the AM has been used in practice, we find that it can hardly be called a breakthrough or even a new age of technology as Aristotle has imagined this. He probably had other plans. Believe me, we have the real leap forward still ahead of us. If you ever become emperor, please remember Alexander. You will need to conquer

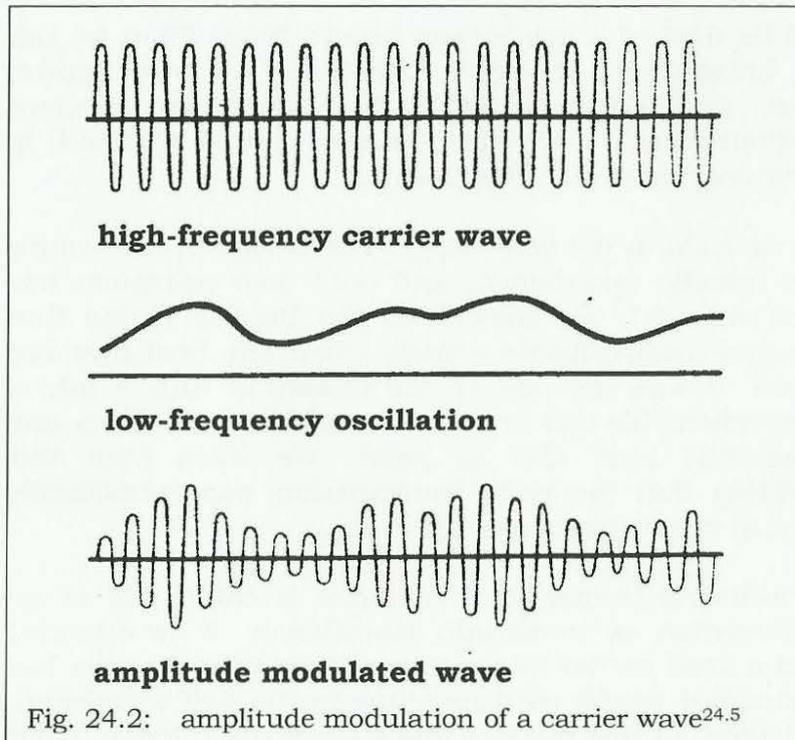


Fig. 24.2: amplitude modulation of a carrier wave^{24.5}

the countries at least to the Indus to bring the transmitters under your control!

However, we initially try to perform a valuation of the AM technique. It is even faster to speak a text than to spell it. That would be an advantage for the AM. What actually arrive at the other side in our experience are only isolated and unintelligible sounds which must be initially deciphered. The received signal is strongly distorted by interferences and also totally noisy. The larger the distance from the transmitter, the smaller the amplitude, and this simply means in the AM that the volume decreases. The speech signal is eventually destroyed by the generally noise.

If all transmitters in the world would remain silent by command of a god, this could certainly improve the situation a bit, but all the problems of the AM could not be resolved in this way.

In short summary, the transmission quality and range are just miserable in the AM.

References and notes on lesson 24:

- 24.1: G. Gruben: Die Tempel der Griechen, Wissenschaftliche Buchgesellschaft Darmstadt 1986, 4th ed. page 130
- 24.2: Aristoteles, Hauptwerke, Übers. W.Nestle, Kröner Verlag Stuttgart Nr. 129, 8th ed. 1977
- 24.3: citation from it on page 42
- 24.4: citation from it on page 43
- 24.5: Grimsehl: Physik 2, Klett Verlag Stuttgart 1968, p.163

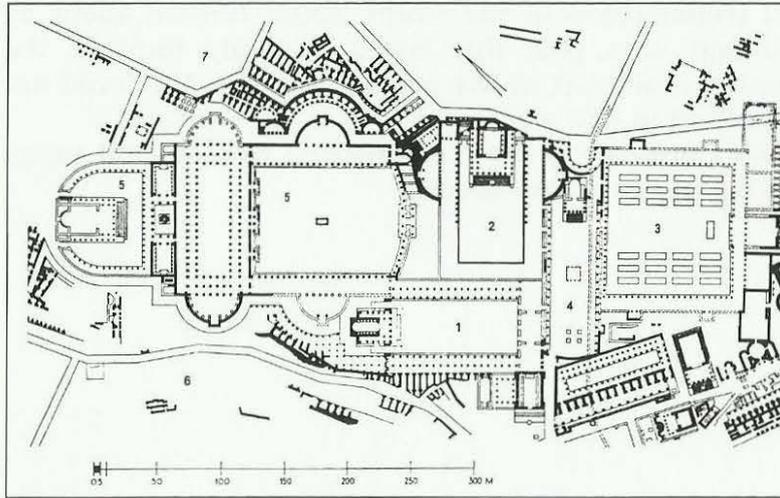


Fig. 25.1: Roman Forum, Imperial Fora in Rome^{25.1}

- 1 Forum of Caesar with the
- 2 Temple of Venus Genetrix with 9.7 MHz and $\lambda = 31$ m
- 3 Forum of Nerva with the
- 4 Temple of Minerva (9.3 MHz at $\lambda = 32$ m)
- 5 Temple of Mars Ultor with 7.5 MHz and $\lambda = 40$ m
the cella measures 20x20m, the plinth is 40x40m
- 6 in the Forum of Augustus (with corr. shell)
- 7 Temple of Trajan (7MHz transmit frequency at $\lambda=43$ m)
- 8 Basilica Ulpia and
- 9 Trajan's Forum

Lesson 25

Advantages of FM (Frequency Modulation)

The best and by far the most powerful technology awaits its political implementation. Let us now talk about it. However, it requires a completely new architecture and thus presents itself even from afar as a sign of a new and advanced culture of technology.

Compared with all previous temple designs, the new temples have no fixed length, width and height of the cella anymore as an architectural feature. Round apses and domes are used now as a typical and particular

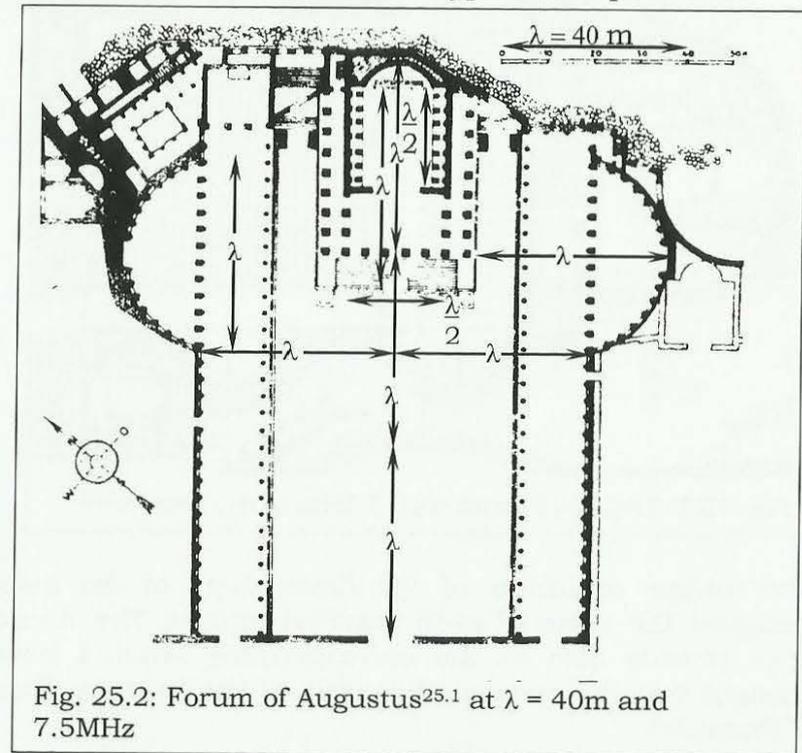


Fig. 25.2: Forum of Augustus^{25.1} at $\lambda = 40$ m and 7.5MHz

characteristic. Incidentally, this distinguishes the modern Roman temple from the classical Greek telegraphic transmitter. Just look more closely at the broadcast temple at the Imperial Fora in Rome. All are equipped with this round apse, the temple at the Forum of Caesar with 9.7 MHz, the temple at the Forum of Augustus with 7.6 MHz and also the Temple of Trajan with 7 MHz.

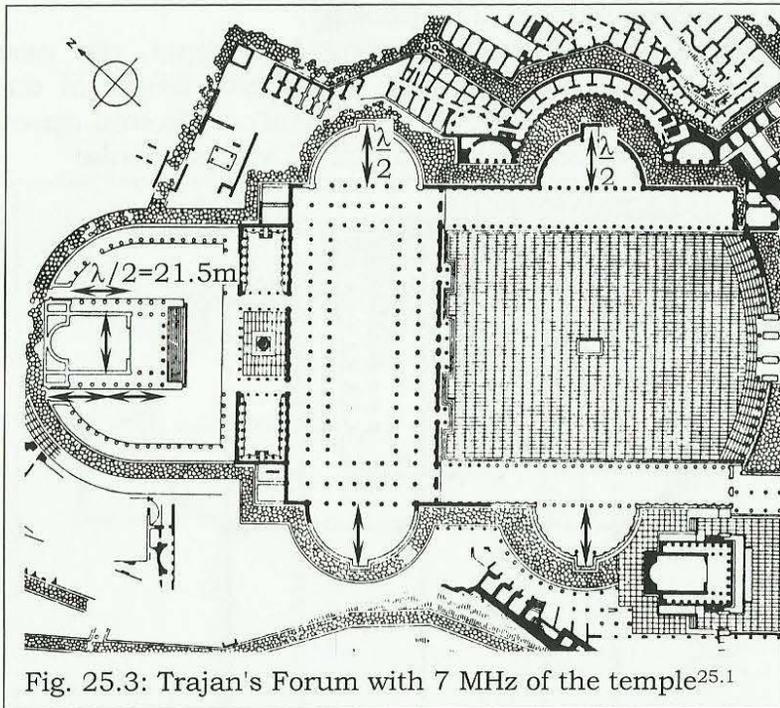


Fig. 25.3: Trajan's Forum with 7 MHz of the temple^{25.1}

The integer multiples of the dimensions of the cella designed the place of each imperial temple. The round apse repeats also in the corresponding scale. I have brought you the construction plan of the Imperial Fora of Rome.^{25.1}

The new understanding of this technology is impossible to ignore, or what do you mean? However, what does this rounding mean? I am trying to explain it to you from a technical point of view.

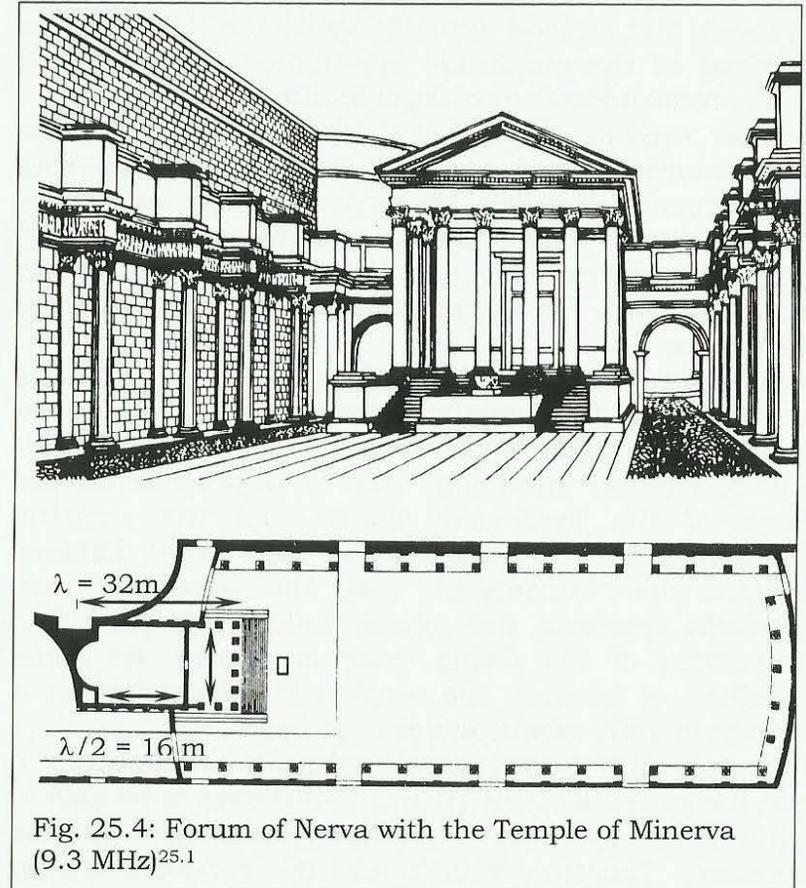


Fig. 25.4: Forum of Nerva with the Temple of Minerva (9.3 MHz)^{25.1}

We have now to deal with a cavity resonator of variable length. This is the technical equivalent to the variable wavelength and the variable frequency. Therefore, we

technicians speak about FM as an abbreviation of frequency modulation.

The amplitude is no longer varied in the FM but the frequency in time with the spoken word. In this ingenious way, the language can be carried over the air. Moreover, this method actually works the same way as explained in the amplitude modulation. However, the FM has tremendous advantages in direct comparison.

First, we must recognize that virtually no noise disturbs the transmitted signal. That has to do with the fact that only frequency changes are evaluated, and only those can also cause noise. However, if the noise does not change its frequency, it is no longer perceived. You can remember that FM is especially less vulnerable to interference.

Second, the volume of the spoken words is no longer dependent on the amplitude but on the change in frequency or modulation depth, as we technicians actually express ourselves. This is dependent on the design of the broadcast temple and the acoustic conditions in this building and no longer on the distance between the transmitter and the receiver. Very practically speaking, this means nothing else than that the volume of the divine voice is always the same regardless of whether the receiver is established at a distance of 3000 kilometers or next door.

Of course, all the used wavelengths should continue to be in the range between 10 and 100 meters to be able to continue to use the discussed advantages of the shortwave. The transmitters and the receivers should also be architecturally similar to avoid modulation distortions. This would be expressed in a raspy and significantly altered voice at the receiver.

Another advantage is the very modern receiver technology which does not require the sacrifice and slaughter of animals.

If we want to evaluate the FM technique, I can almost only tell you about the benefits. The only disadvantage I can think of is that the nature sanctuaries are unsuitable as a receiving station, and buildings which correspond to the FM technique still have to be built everywhere. You should take that into account if you intend to introduce the FM technique throughout the Roman Empire.

We are also not safe from all the interfering signals. Problems occur if an interspersed signal also changes its frequency. For example, this is the case during the power-up and during the power-down of a transmitter. To make matters worse, telegraphic transmitters are constantly turned on and off which is why they can severely interfere with the modern FM transmitter. Broadcasted voices can arrive beyond recognition as garbled scraps at the receiver.

Therefore, it is also advisable with the FM technique in any case to keep the ether as long as free of telegraphic transmissions as it should be used for its intended purpose. This does not have to be the case every day. For example, It is appropriate to use the FM technique only on Sundays and legal holidays. What do you think about it?

Saturday is already in use as the holy Sabbath.^{25.2} If I were in your shoes, I would sanctify the Sunday. The military then still remain the rest of the week for their certainly very important strategic telegraphy. In my opinion, such an arrangement of the week should be sufficient for the maintenance of external security of our state.

Contrary to my own conviction, it would be an advantageous in this particular case if the Pontifex Maximus is also supreme commander of the Roman army at the same time. Such a regulation would be unenforceable in another way in which the rights of the military are being curtailed in this manner. You should involve even such strategic considerations.

Perhaps you understand now why we Romans struggle so hard with the frequency-modulated monotheism. With the aim of taking possession of all frequencies, it is incompatible with the principle of the religious self-understanding which is based on tolerance of the Romans. While we enable the order in the ether by the reasonable allocation of frequencies and a relative narrow bandwidth, extremely broadband FM transmitters can not be practically integrated into the religious realm of the Roman gods. Timesharing as well as the sanctification of Sunday for the FM reception would be by far the most reasonable and tolerant compromise.

Some Roman emperors already saw in the basic principles of monotheism unacceptable discrepancies to their own religion which is why, among other things, they smashed the Jewish community and its cultural center, scattered the Jews all over the world and enslaved them.^{25.3} This is a chapter of cruel historical reality.

A special contribution has made by Hadrian who has forbidden to enter Jerusalem to the Jews for all time.^{25.4} He wanted the FM transmitter, which was the religious center, for himself and the Romans and wanted to make sure that his stated airtimes are strictly enforced. If there is only one god in the modern FM technology, he wanted to be this sole god.

Emperor Hadrian was intemperate in this regard, but on the other hand, he was a technical genius and very consistent in terms of the implementation of his broadcast plans. He made use of his position as Pontifex Maximus and drastically restricted the broadcasting rights of the Jews. However, they were allowed to keep the receivers and meeting rooms.

I will tell you more in the next lesson about Hadrian who was the most prominent engineer among the Roman emperors.

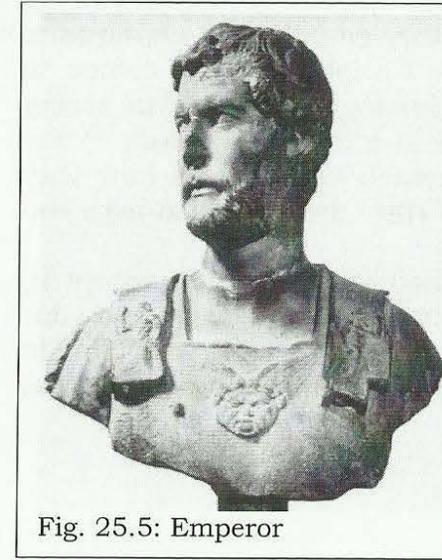


Fig. 25.5: Emperor

If I watch you, it is easy for me to imagine how the young Alexander was sitting with his teacher Aristotle even 640 years ago—just like you with me now—and followed the words of his teacher and was finally totally convinced of this fabulous technology. A young person is enthusiastic, and that is a good thing. Ultimately, they are the ones who promote the progress.

You have still got all your life in front of you and have the power to implement good ideas and advantageous technologies. I wish you and the humanity that it finally succeeded.

My personal advice would be to ask the Christians. These are all basically decent and honest people who

preach of an almighty God and a forgiveness of sins. That come in useful to you, right?

Maybe they are willing to help you in the implementation of your ideas. Nobody is forcing you to follow the tradition of the other emperors to continue to make war and pursue the Christians. If it comes to introduce a really great technology, you have to accept help from anyone who lives in a critical distance to the old gods. The Christians preach charity and how they are helping each other, and thus they will also help you in the case of doubt.

This is just a well-intentioned advice. If you accept it, you can be sure of the support of your teacher and your mother, as you surely know. However, take your time in this important question, and think once more about that in silence.

References and notes on lesson 25:

- 25.1: T. Kraus: Das römische Weltreich, Propyläen Kunstgeschichte Berlin Bd. 2, fig. 10, page 167
 25.2: Helga Gesche: Rom, Beck Verlag München 1981, p. 236
 25.3: citation from it on page 237
 25.4: citation from it on page 238
 25.5: T. Kraus: Das römische Weltreich, Propyläen Kunstgeschichte Berlin Bd. 2, fig. 301b,
 bust portrait of Emperor Hadrian 122 AD, Paris

Lesson 26

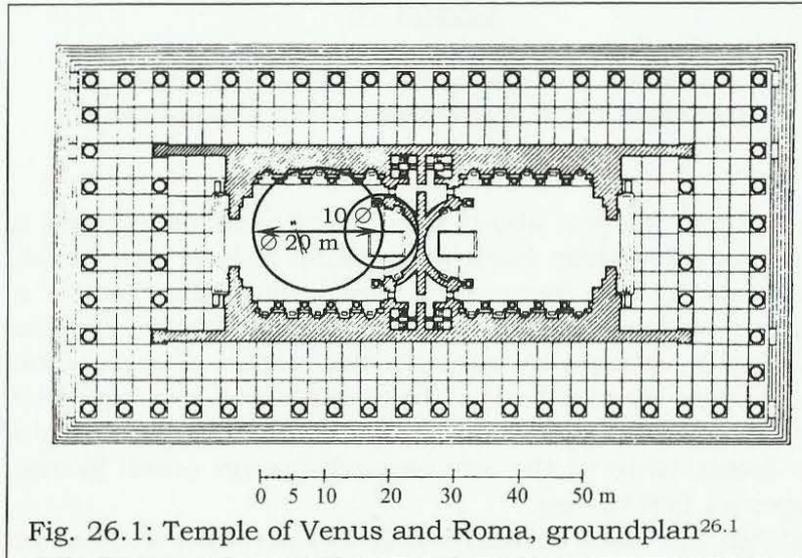
Pantheon (Temple of All the Gods) in Rome, Broadband FM Transmitter of All Frequencies

If I have to tell you about the technical achievements of our time, Emperor Hadrian should not be overlooked because he has extensively dealt with the issues of science and technology. Among other things, he has undertaken voyages throughout his empire to extend his knowledge. He has been very intensively concerned with the questions of the Greek architecture and make use of the latest state of the art as perhaps no other Roman emperors before him.

Hadrian has been certainly able to learn also a lot about the radiotelephony which has only further encouraged his curiosity and his desire to try everything. The buildings, which he has built, blatantly betrayed the intention which he pursued with determination and personal commitment.

Despite the sharp criticism of the Apollodorus of Damascus, the unique double Temple of Venus and Roma in the middle of Rome is designed by Hadrian himself. It is the attempt to combine the Greek tradition with modern technology. In reality, it transmits a mixture of amplitude and frequency modulation.

Hadrian initially wanted to test the AM technology and even perfect it if possible. Therefore, the temple is entirely reminiscent in its design of Greek models. On the other hand, the integration of the FM technical arrangements benefits the radio reception such as the circular apses and the ceiling construction as a barrel vault at the end of the two chambers of the cella.



Now he had generated a mixed form of AM and FM and primarily combined the disadvantages of both methods together. Therefore, sharp criticism was entirely justified.^{26.2}

After the commissioning in the year 135 AD, he had to make the experience again that satisfactory results were not achieved with AM. Regarding the FM technique, the results were already much more promising. However, the frequency at this reconstructed temple may change only between 6 and 7.5 MHz which corresponds to a modulation depth of just 11 percent. Therefore, the volume of the speech signal was not too high.

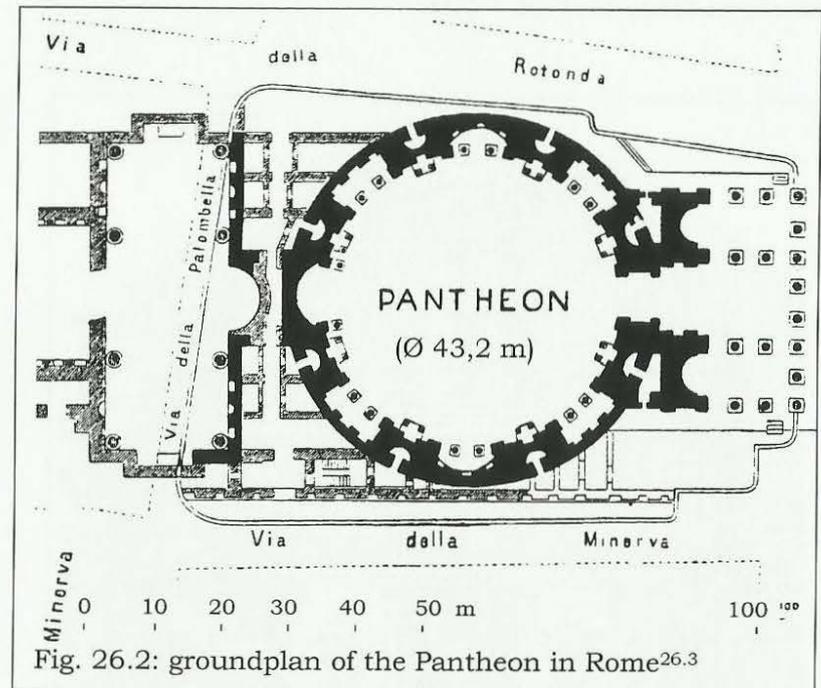
However, the good thing about this experiment temple was that it took only a relatively small frequency band and thus also bore only the names of two deities, Venus and Roma.

Emperor Hadrian had also the courage to build a completely recalculated and designed temple as a pure FM transmitter in the heart of Rome to experimentally

investigate the performance of the new FM technique. He took the opportunity for the project to build a new temple at a very favorable point of a former temple which was originally built by Agrippa, restored by Domitian and finally destroyed by lightning.

I brought you some construction plans of the Emperor Hadrian for this FM temple. It is quite certain that the Oriental Greek Apollodorus of Damascus creatively contributed in the grandiose design.^{26.2}

This building is the Pantheon which is the temple of all the gods. We technicians would say that it is a transmitter for all frequencies!



In fact, this domed building does not omit any frequency. It is designed for maximum volume with a modulation depth of convenient 100 percent. For this reason, all available frequencies are used by the Pantheon which is why the term temple of all gods is really no exaggeration.

You can see in the contour that the pantheon fits exactly into a ball with a diameter of 43.2 meters. This corresponds to a range of the shortwave with the minimum frequency of 3.5 Mhz. However, the floor is not curved but horizontal. This results in exactly the half of the height to the base of the dome and a maximum frequency of 7 MHz.

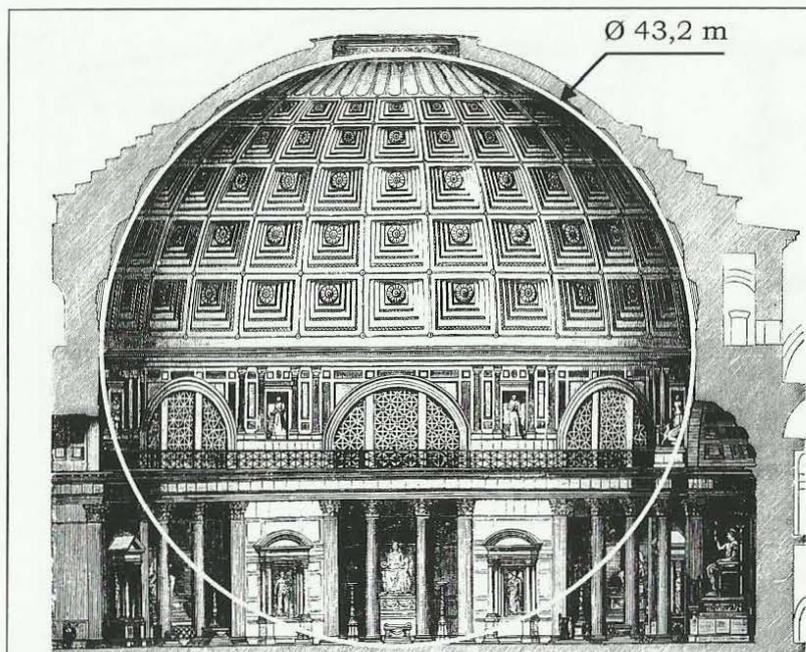


Fig. 26.3: cross section of the Pantheon^{26.3}

The construction form ensures that any wavelength can be generated between the half and the single diameter. Above the mentioned maximum frequency of the fundamental oscillation continuously follows the also produced and even unavoidable harmonics. These cover the frequency bands up to twice times (7-14 MHz), up to three times, up to four times (14-28 MHz) and so on.

For this and only for this reason, a maximum frequency was chosen to be exactly twice the value of the minimum frequency. I can still explain you that a larger volume is quite simply not possible without the interference of the transmitter with itself because the used fundamental oscillation would superimpose its own harmonics. It sounds as if two at the same time talk. The voices would be distorted beyond recognition.

The Pantheon has been planned and built according to purely academic rules of Hadrian. It impressively demonstrates the high level of engineering knowledge of details which a modern radio operator should master.

In order that a technology can be there for the benefit of humanity, consistent and purposeful actions and a high degree of perfection is necessary. The Pantheon is the best proof.

Incidentally, I would point out as a useful side note that if you want to disable this FM transmitter, you need to remove only the copper plates in the coffered ceiling.

Since the reign of the Emperor Hadrian, numerous buildings were built with a central dome, semicircular apse or any combinations of these, and this shows the new understanding of technology which slowly spreads in the Roman Empire. In my opinion, the time has come for a general introduction of this FM technique which is binding upon all. However, you are born into an

interesting and almost exciting time because this technique can begin a whole new era.

You must understand that historians classify an era always into the developed and used technology of the contemporaries. We today mark the transition of the AM broadcast technology, which also includes the radio telegraphy in the broadest sense, to the advanced FM technique. The Pantheon was courageously built, and it shows you the way, look carefully at it if you should come to Rome.

You can then find the Romans in the thermal baths and watch them how they sit or lie half the day around under the dome and listen to the radio. They go home afterwards with the necessary pride of the technical achievements of their time and tell about the many news which they have received live from their gods over the air.

References and notes on lesson 26:

- 26.1: T. Kraus: Das römische Weltreich, Propyläen Kunstgeschichte Berlin Bd. 2, page 161 or 26.2
- 26.2: A. Springer: Die Kunst des Altertums, A. Kröner Verl. Leipzig 1915, 10th ed., p. 517/518
- 26.3: daraus entnommen die Zeichnungen vom Pantheon in Rom, 115-125 n.Chr. unter Hadrian geb., p. 516/517

Lesson 27

The Best Fundamental Wave Transmitter

The Pantheon, the temple of all the gods, is in operation for 185 years now. Numerous experiences with the current FM technique could be collected. In order that you can form an own opinion, I will tell and explain you again the advantages and disadvantages of this technique.

The Romans have not yet managed to bring the Asian limited power transmitters under control. As I have explained to you, these have an extreme range and may even still have an enormous field strength in Rome. For this reason, Hadrian and his technicians have not ventured to the limit of the short-wave range of 3 MHz but have still kept the range to 3.5 MHz free as a precaution.

As you see, a slight increase in performance is theoretically possible here. If you wanted to build your own FM transmitter at some point, you should always keep the Asian deities in mind. Therefore, the location should be closer to the east even as seen from Rome, if possible, in the center of the known world.

You have always felt very comfortable here in Nicomedia and its glamorous surroundings. The sanctuaries in Byzantium are considered as very powerful. That would be a very favorable place for such a project.

In strategic terms, the location on the Bosphorus would be advantageous because the necessities to keep the airwaves free will demand of you to advance with the military towards Asia.

A transmitter must be protected against sabotage and unauthorized access at the same time. This is difficult to

ensure in the multicultural centers such as Rome or Jerusalem. This circumstance also suggests a practical refoundation and the location on the edge of the mainland Europe. In this way, you have Asia always in view and within reach. I can give you only advice in these matters, but you will even have to make the decisions at some point.

During the operation of the Pantheon in Rome, a technical problem had occurred with which nobody had yet expected. This relates to the aforementioned harmonics. As I said, the fundamental wave is not distorted. Consequently, the Pantheon is by far the most powerful transmitter of fundamental waves, I know.

However, the generated harmonics interfere with each other and thus are not usable. There are purely technical reasons. To explain it better, I draw a line here. It should represent the range in the shortwave of the available frequencies from 3 to 30 MHz. The bars denote the respectively used frequency band of the Pantheon.

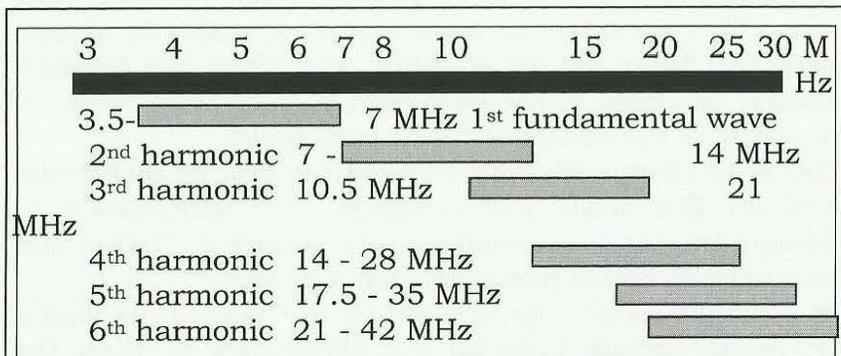


Fig. 27.1: Pantheon, the used bandwidths

The second and fourth harmonics do not interfere with each other, but the intermediate third harmonic interferes both. The fifth harmonic already superimposes the third, fourth, sixth, seventh and eighth harmonics and so on.

As a consequence, it is necessary that all receivers have to evaluate only the fundamental wave. This is almost not feasible with a building. For this purpose, the receiving stations have to be designed in the same enormous dimensions as their transmitter, the Pantheon. Since we still have to build an enormous number of receiving stations in the future, it would be irresponsible from an economic perspective.

This argument and the lack of technical possibilities to filter out and dampen individual harmonics demand a renewed rethink. On the contrary, we should try to reinforce and use certain harmonics to apply even smaller receiving buildings. For this purpose, the modulation depth must be reduced again to decrease the volume. A useful compromise would look like this:

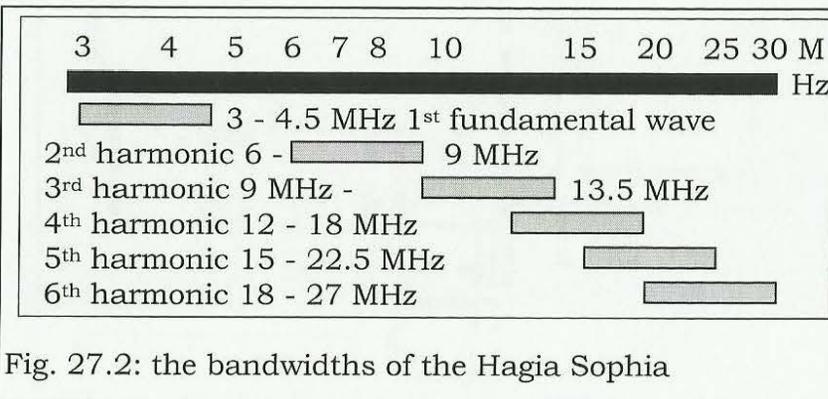


Fig. 27.2: the bandwidths of the Hagia Sophia

I can quickly show you my suggestion for an appropriate FM transmitter. Just as the Pantheon, I would put the cella in a vertical position and complete the top with a dome. As a total height to the dome, I recommend 50 meters, the short-wave limit of 3 MHz. If you now want that the most important harmonics, which are the second and the third, no longer interfere with each other, the second harmonic may only go to 9 MHz because the third already begins here. Therefore, the upper limit for the fundamental wave is at 4.5 MHz. As a result, the attachment of the dome needs to be defined to a height of 33 meters, and this also corresponds to the diameter of the dome.

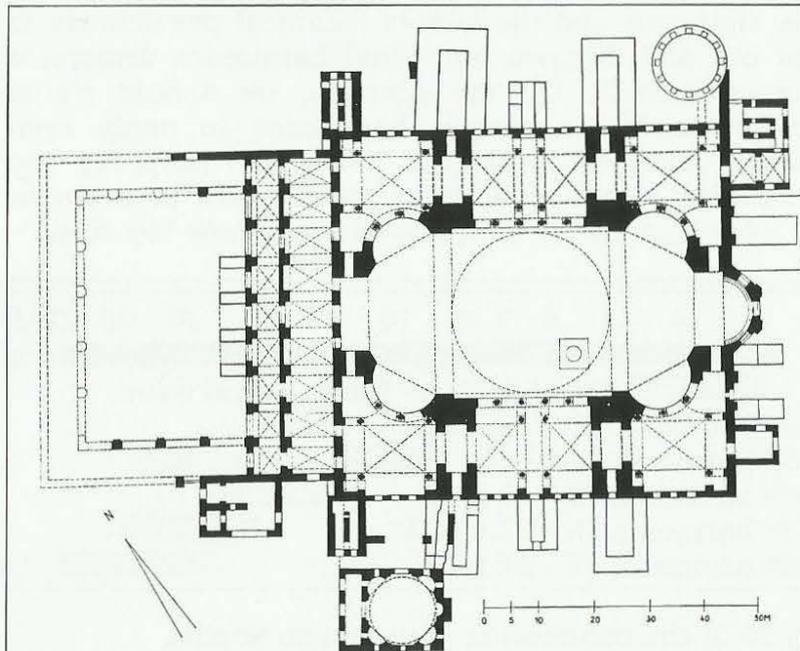


Fig. 27.3: groundplan of the Hagia Sophia, Istanbul. First construction by the Emperor Constantine, operating from 360 to 532. New construction under the Emperor Justinian in 537, now a museum.

These 33 meters are in turn the wavelength of the third harmonic which we also want to use.

A weak point of this design is the crosstalk of the third with the fourth harmonic, but I already have an idea how this problem can be solved. We can not dampen the fourth, but instead we amplify the third.

For that purpose, I build in the four corners of the central room side rooms as a booster of harmonics which measure a third of the crown height of the central room (16.6 m) and complete the top with a partial dome which is also only one third as large with a 11 m diameter.

As you can see, the most important dimensions are always fixed. They are technically determined and can not be freely chosen for aesthetic or artistic aspects. You can make only the decoration of the room by the will of the people as long as the technical function of the broadcast temple is not affected.

These are already the most important advices which I can give you to take along from my point of view for the construction of an efficient and powerful FM transmitter. We initially deal also only with the construction of a single transmitter because in the ether is no place for the parallel operation of several transmitters.

You are right, I have to correct myself, it is almost no space. You have listened very carefully. The proposed broadcast temple actually possesses still an unused gap in the very important frequency band between 4.5 MHz and 6 MHz in. However, I see a great advantage because the currently most important telegraphic transmitters work in this range!

Only if the military and all other radio operators have switched off their outdated equipment, this range can be used. That would then be a pure fundamental wave transmitter with a maximum height of about 33 m and a dome with perhaps 20 m in diameter.^{27.2}

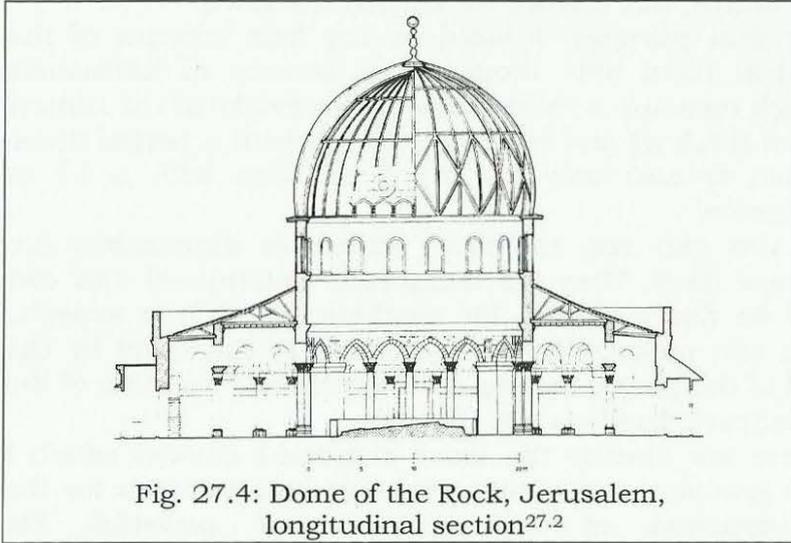


Fig. 27.4: Dome of the Rock, Jerusalem, longitudinal section^{27.2}

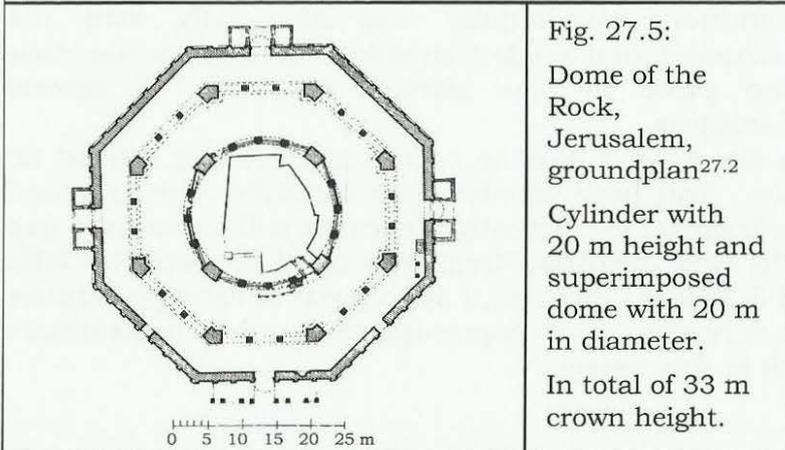


Fig. 27.5:

Dome of the Rock,
Jerusalem,
groundplan^{27.2}

Cylinder with
20 m height and
superimposed
dome with 20 m
in diameter.

In total of 33 m
crown height.

If I were in your spot, I would build your transmitter here in the proximity. For example, a favorable place is Byzantium which we then rename in Constantinople to honor you. How do you like the idea?

References and notes on lesson 27:

27.1: W.F.Folbach, J.Lafontaine-Dosogne: Byzanz, Propyläen Verlag Berlin, Bd.3, p. 218/219.

The first construction is consecrated by Emperor Constantine the Great in 360 AD and burned down in 532. Today's construction of the Hagia Sophia, which is consecrated by Emperor Justinian 537 AD, is the work of "mechanopoioi Anthemius of Tralles and Isidore of Miletus who are both theorists rather than architects." The round dome, which collapsed by an earthquake in 538, was "replaced by a higher implemented ribbed dome" which was certainly a structural advantage, but it may have been rather a disadvantage in terms of the function of the building.

The Hagia Sophia is a museum today.

27.2: For example, it could be the dimensions of the Dome of the Rock in Jerusalem.

J.Sourdel-B.Spuler: Die Kunst des Islam, Propyläen Verlag Berlin, Bd.4, p. 141/142

The Dome of the Rock was built in 691/692 on the top of a particularly active mountain at the place where Solomon had once built his temple on the Temple Mount of Jerusalem. Quote: "the Islam understood the rock as the place of visionary nocturnal ascension to heaven of the prophet of which the Koran refers (Sura 17). The intention of the Caliph Abd al-Malik was to surround and feature this holy place with a protective housing as he began the construction of the Dome of the Rock."

Lesson 28

The Ultimate Harmonic Transmitter, a Design which was Never Built.

Aristotle has taught us that "god is energy".^{28.1} If the energy with which our radios are operated continue to decline as in the last century, we should think about measures how to encounter this development in order that no godless time befalls us one day. In this case, all efforts come down to increase the power of the transmitter further.

As you know, I come from the Roman province of Africa. My teacher was the rhetorician Arnobius of Sicca in Numidia.^{28.2} This is where the Phoenicians were resident before the Romans conquered the country. As a seafaring people, the Phoenicians got around a lot, and thus they also knew so much. I could ask my teacher, who was proud of his Phoenician ancestry, what I wanted because he really knew everything.

I already asked him at that time how the power of a transmitter could be further increased, and he let me draw construction plans which he then has evaluated. I initially had the idea to build multiple domes together like a honeycomb. My thought was that if not just one transmitter but 6 transmitters are operated synchronously, the sixfold performance may also be expected. My strict teacher has not discarded this design, but he said that such a basilica with multiple aisles was only a viable solution for a receiver but not for a station.

He pointed out to me the importance of the acoustics of an FM transmitter and the coupling of the acoustic with

the electromagnetic waves. The acoustic in an extensive network of rooms would be worse and worse to the farthest corners. This is his reasoned criticism.

He already agreed with my design for the limited power transmitter. As I showed you, I work only with a single central dome to which I couple an integer ratio (2, 3, ...) of minimized side rooms to enhance an appropriate harmonic.

If you continue to think in this direction as my teacher has goaded me at that time, you will find a solution which is even better. As a result, I made one design after another. However, he was only fairly satisfied with the following design:^{28.3}

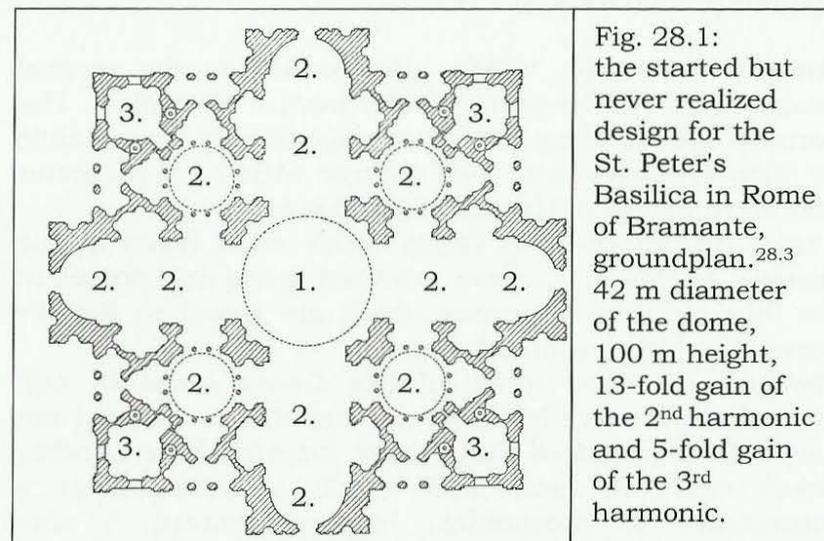


Fig. 28.1:
the started but never realized design for the St. Peter's Basilica in Rome of Bramante, groundplan.^{28.3} 42 m diameter of the dome, 100 m height, 13-fold gain of the 2nd harmonic and 5-fold gain of the 3rd harmonic.

The design is already promising, but it has only the disadvantage that it will probably never be realized. Which builder is able to construct a dome with a diameter of 42 m and a crown height of 100 m!

You have correctly recognized it. The transmitter with these dimensions slips entirely from the range of the short wave in the medium wave, but this is intended for my design because the fundamental wave will no longer be used for this transmitter.

It is first and foremost a matter of the 2nd and the 3rd harmonic. Both should be amplified as often as possible and not interfere with each other. For this purpose, I selected the base of the dome in 75 m height above the floor, and this then corresponds to a standing wave of 2 MHz. If the wave runs to the top of the dome (100m), the frequency decreases to 1.5 MHz.

The 2nd harmonic, which also occurs in the central room, uses the frequency band from 3 to 4 MHz. The parts of the building, which are specifically responsible for their amplification, need a dome with 21 m diameter and 50 m height to the top of the dome.

I take the shape of a Greek cross as a basis in my design. As you see, I have provided apses and domes in the four ends of the cross which are tuned to the 2nd harmonic; but that is not all.

Between the four arms of the Greek cross is still valuable space available which can also be used. I am particularly proud of that I have inserted here another Greek cross in each case which is intended as a transmitter of harmonics. In my concept, I also emphasize the second harmonic so that if the central dome and all the domes with 21 m are added together which indeed has also an amplifying effect, the second harmonic experiences a 13-fold amplification. That is

already extreme, but that is also the theoretical objective for which is searched.

If you otherwise consider the enormous weight of the numerous domes, the remaining and retaining walls appear very delicate so that I would be afraid that the building might collapse like a house of cards one day.

A compromise would be if the builders are satisfied with a 5-fold amplification. In this case, magnifying transmitters could alternatively be assembled in the four niches for the 3rd harmonic with domes of 14 m and a height of 33 m. This would be considerably smaller, and the gained space would be a benefit to the thickness of the wall and the structure of the building. Together with the main dome, a 5-fold amplification in the frequency band from 4.5 to 6 MHz is also achieved in this case.

In my rather theoretical design, I do not want to forgo this important area which is why I have repeatedly appended domed rooms for the 3rd harmonic in the four outer niches of the small Greek crosses.

The 4th harmonic is also usable with restrictions. It closes gapless to the 3rd harmonic, occupies the band from 6 to 8 MHz and benefits directly from the amplification of the 2nd harmonic. Due to the 5-fold and in my design even the 13-fold amplification, it dominates over the 5th harmonic (7.5 to 10 MHz). However, since the 7th harmonic barely emerges, even the 6th harmonic is still fairly clear to some extent to receive the range from 9 to 12 MHz which is replaced by the highly amplified 8th harmonic (12-16 MHz). All higher harmonics are lost in a general noise. In this way, an almost complete integration of all frequency bands from 3 to 16 MHz is achieved. Every Pontifex Maximus dreams of such a dominant transmitter to rule the airwaves.

frequency band	length = $\lambda/2$	harmonic
1.5 – 2 MHz	75 – 100 m	1 st (1x unused)
3 – 4 MHz	37.5 – 50 m	2 nd (13x amplified)
4.5 – 6 MHz	25 – 33.3 m	3 rd (5x amplified)
6 – 8 MHz	18.8 – 25 m	4 th (13x amplified)
9 – 12 MHz	12.5–16.7 m	6 th (5x amplified)
12 – 16 MHz	9.4 – 12.5 m	8 th (13x amplified)

Fig. 28.2: frequency bands in the design of Bramante

A design is quickly drawn, but consider the effort until such a huge building is placed into the landscape. We still have no need for it.

Therefore, dear Constantine, much more important technical problems still wait for a key policy decision in the area of the construction of receivers.

References and notes on lesson 28:

- 28.1: Aristoteles, Hauptwerke, Übers. W. Nestle, Kröner Verl. Stuttgart Nr. 129, 8th ed. 1977, citation on page 49
- 28.2: Lucius Caelius Firmianus Lactantius: Ausgewählte Schriften, Übers. A. Hartl, Verlag der Josef Kösel Buchhandlung München 1919, page 1
- 28.3: G. Kauffmann: Die Kunst des 16. Jahrhunderts, Propyläen Verlag Berlin, Bd. 8, p. 336

Lesson 29

Broadcast or Radiotelephone, a Dispute

Once the broadcast temple stands in the mentioned current architecture, our next problem is that we need to issue guidelines how to construct the many receivers which all still have to be built throughout the empire. The fundamental question is, should the antennas of the receiver be used which are equally built as the transmitter, or should it be a different construction of antennas in accordance with their feature? Both solutions are useful and have their technical right to exist.

According to the particular feature, a distinction can be made in three areas:

1. the creation of information (transmitter)
2. the reception of information (receiver) and
3. the transmission of information (wave).

The advantage of this tripartite division is that each link can be optimized in the broadcast network to its specific function. Therefore, the builders are freer because completely different technologies of antennas can be used. I know a proponent of this technology who takes a stand for the tripartite division.^{29.1} He is the presbyter Arius who has brought the prevailing doctrine in Antioch to Alexandria in the sense of his own education and presently argues with the Melitians and the bishop of Alexandria.^{29.2}

Even if you are not really interested in the dispute, you can not stay out of it because highly talented and experienced engineers argue here, and the whole broadcast technology is here in a crucial test between those who exclusively want to use the system as a broadcast station and those who want to use it as a radiophone.

However, the central tripartite information system also brings new problems. For example, if converters, which are the so-called relay stations, would be necessary for a local or regional transmission, a transmitter is then no longer enough. Any divine substitutes or compensatory gods in the form of angels need to be reintroduced while we really want to abolish the old decrepit heaven of the gods!

The structural solution of the engineers could be that certain important receivers, which play a relevant role as converters, are also equipped with a dome but with a smaller diameter and a lower modulation depth. This is related again to the function of a relay station to disseminate the news in the rural areas where the construction of wide receivers with at least 16.5 meters would overwhelm the capabilities of small village communes with certainty.

Therefore, the relay stations need to use either a high frequency or the change in frequency to reduce the modulation so that higher harmonics are still received without interference. Furthermore, it would adhere to the architectural premise that the side transmitters must not interfere with the main transmitter.

This centralized transmitter and receiver systems of the tripartite information technology, which can be traced back to the Egyptian roots, is characterized by a high degree of flexibility. Adaptations to the change of

technical or policy requirements are relatively easy. For technical reasons, the broadcast network would have a strict hierarchical structure. The position of the Pontifex Maximus as the radio director would involve an enormous plenitude of power.

I will not tell you now whether I think it is good or bad because I want that you form your own opinion to the question. I am just trying to bring you closer to the standpoints as neutral as possible which are currently being discussed lively and sometimes quite violently among the experts.

Let us talk now about the other option which does not provide a division and specialization. The basis is that both transmitters and receiver basically should not differ from each other in its architecture and in the technical function.

Just remember what I reported about the temple towers in Mesopotamia. The Babylonians had also directed the cella towards the sky in the form of a tower in a vertical position. The especialness was that such an often called ziggurat can be used both as a transmitter and as a receiver.

The technical basis is that a reception is generally possible with the same antenna with which is broadcasted. This view is reflected in the structural fact that the architecture does not allow any variation and thus may appear stiff and hardly progressive. All buildings are at least in the basics a copy of the interior design of your main transmitter. They can also be only half as large if the second harmonic should be evaluated or one third as large if it comes to the third harmonic and so on.

For example, if you choose the shape of a Greek cross for the main transmitter, all corresponding substations

must have an identical shape. The advocates of this method say that this appropriate copy guarantees the cleanest voice transmission. Modulation errors, which may occur due to the ideally hardly realizable architecture, will be compensated at the receiver by the matching architecture. Therefore, the modulation errors annul each other. This argument of the uniformity of transmitter and receiver, which the opponents of Arius represent, can not be denied.

The Babylonians had used their system to call each other but still on the basis of telegraphy. This method could be reintroduced now with the method of the modern radiotelephony. The technical possibilities, which open up for the future, are actually very tempting. We also have a very different political power structure because all technicians on duty will get the same rights and obligations. Anyone can equally broadcast and receive; the operators of the main temple could at best have a special role as a "primus inter pares". If one of the stations becomes inoperative by lightning or by foreign powers, all other stations remain fully functional. The system can just very laboriously be conquered. It guarantees a quite perfect political and cultural solidarity.

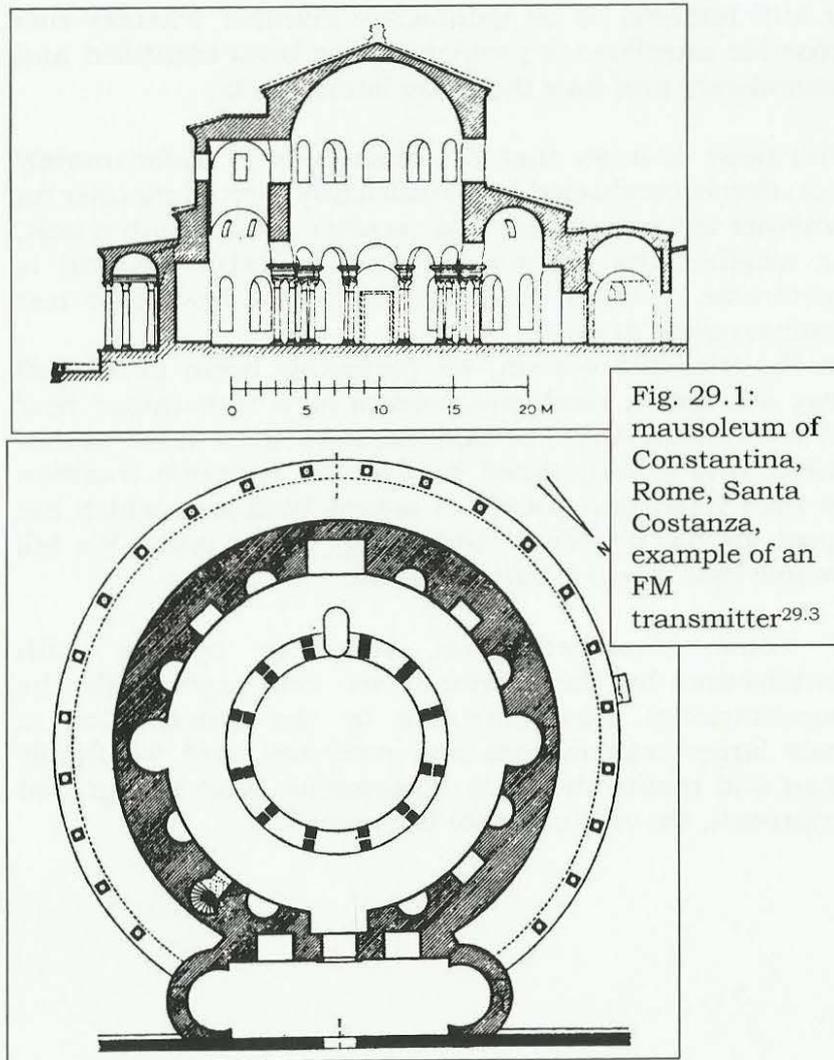
However, the concerns go in the direction that the people are largely excluded from the processes just as in ancient times, and the priesthood could use the modern technology of radiotelephony only for their personal needs. The Proponents can not accept this argument and point out that the news can spread like wildfire from one station to another with this technology and thus could be received even by the people of the remotest corners.

It still remains to be technically clarified whether this possible interference problems have been identified and considered, and how the noise immunity is.

You need to know that the discussion is unfortunately not always conducted in a sufficiently factual manner on whether the transmitter and receiver should form a unit, or whether the function-oriented tripartite division is preferable. It would undoubtedly be the best if we test both versions at once.

In the tripartite system, we preferably begin in a small way and put a small mausoleum as a transmitter next to a receiver. Only certain persons then have access there. It is already dated back to the Egyptian tradition to bury important people in sacred buildings which are used for the broadcast technology of the gods. We tell people that it was a burial ground.

If some furnished local networks operate with satisfaction by this method, we can begin with the supraregional interconnection by the construction of ever larger transmitters and receivers, and we finally plan and realize the main transmitter. With this graded approach, the risk could be kept small.



This suggests to start the implementation of this technology.

The discussed alternative, which combined the technology of the radiophone, has its roots in the radio

network of the Titans of whom I have already told you. Since the transmitter and receiver form a unit in this case, the first step must be the consistent and essential construction plan for all time as well as the implementation of the main transmitter. I fear that our knowledge and experience are not enough for this purpose. The highest perfection is demanded because subsequent alterations or adaptations are no longer possible due to the system, and thus this results in the aforementioned lack of flexibility.

These are undoubtedly very difficult and momentous decisions which are taken here. As you can see, we are on the threshold of a new era of information technology and at the transition from telegraphy to radiotelephony and from the amplitude to the frequency modulation. As you have experienced yourself, high detailed technical skills are required if historical events and relationships should be judged, and viable decisions are made for the future.

As your teacher, I must ask you at the end of the guidance in the secret knowledge of the divine broadcast technology a few exam questions from which I want to see whether you could follow my statements.

The dome serves as a modulator of the transmission frequency, and this is a hemisphere in an ideal situation. What do you think, is the architectural arrangement of a hemisphere mandatory?

It is just important that the modulation of the transmitter can be demodulated at the receiver side again. Therefore, the receiver should be also equipped with hemispherical domes and barrel vaults in the mentioned ideal case.

If a structural engineer now conceives the idea to choose an excessively pointed design for the transmitting dome with any elliptically ogival or onion-shaped cross section, is this possible?

Of course, this is acceptable. Only the construction of the receiver has to be adapted to the modified architecture. The whole thing has nothing to do with aesthetics or any conception of art.

Does the introduction of such a variation of the modulation make sense in a specific case?

For example, you just want to avoid that the whole world can listen, and the audience should be limited to the group of beneficiaries who properly deliver their radio license fees. Therefore, messages can be encrypted with the modulator, the dome and the chosen design.

Would it be possible and reasonable from a technical point of view to choose the crown height of the transmitting dome larger than 50m?

There is currently no need in my view. However, if an acute energy shortage afflicts our world or the transmission power and the range should be further increased, an enlargement of the building will be necessary. My plan of the ultimate harmonic transmitter goes in this direction.

References and notes on lesson 29:

- 29.1: Alfred Heuss: Römische Geschichte, Wissenschaftliche Buchgesellschaft Darmstadt, 4th ed. 1975, p. 454
- 29.2: E. Horst: Konstantin der Grosse, Eine Biographie, Classen Verl. 1985, Düsseldorf, 2nd ed., p. 224
- 29.3: T. Kraus: Das römische Weltreich, Propyläen Verlag Berlin Bd. 2, fig. 40 and 41, page 198

Lesson 30

The Future of the Broadcast Technology

Technology creates and promotes cult and culture. Battles and wars are fought and won with the technology. Technology simplifies our daily life, also makes the weak strong and helps the medicine to prolong our life.

We technicians often remain modest in the background. Nobody usually knows the name of the technician on duty. If he goes on the air, he responds with the name of the deity and remains anonymous. This restraint is often interpreted as a weakness, and our distributors or politicians then think that they can use the technicians for their own benefits. However, if you take their technology away, you will see their helplessness as they snatch and grab the weapons and the technology which are still remained to them.

You have to remember always that power has only the one who not only knows but also controls the latest technology of his time. That is why I taught you these lessons, but you will see the true value of my efforts only if you should stand before the gates of Rome, and you can hear and witness the new FM technique for the first time in one of these receiving stations as they stand outside of the city, for example, at the Milvian bridge. You will be fascinated and impressed.^{30.1}

I still have to give you a warning. A power source is required for the operation of the transmitters. For this purpose, natural and location-dependent resources are exploited such as the so-called places of power which are unfortunately subjected to a temporary fluctuation.

To my mind, they were created a long time ago, and I think that their power is of cosmic origin. However, this energy slowly decreases as we technicians have unfortunately proved. If the observable decrease continues as before, some Technicians already predict the end of the divine broadcast technology for the year 1000 AD.

You have to take heed of this warning even if the exaggerated apocalyptic mood is nothing more than the carpings and lamentations of those who can not bear that their technology will be lost again to which they have become accustomed until the complete dependence.

In my experience, the energy source will change in a wavy, temporal, spatial and not completely uniform way. Therefore, the year thousand is not yet the end in my personal assessment of the future.

In preparation for my lesson today, I have made some thoughts yesterday to the situation if the terrestrial radiation should become less and less, and our great broadcast technology should slowly lose their divine power. Even in my bed, I have been thinking about the problem and obviously fell asleep over it. I had a terrible dream.

The people were godless or desperately searched for places where they still can feel the previously present divine power. They even quarreled about the appropriate buildings. There should be a terrible darkness, and it was dark because the electromagnetic waves also have something to do with the light. The people had no enlightenments anymore. Some might remember the ancient broadcast technology of the gods and have taken possession of the old telegraphic technology again which

works still much more reliable with much less effort. Therefore, they then have also disturbed the sensitive FM-technique so that they have been called witches because they could fly through the air with their information and master the rituals of the telegraphy. In my dream, they were hunted, imprisoned, tortured and even burned alive!

I have dreamed how they take arms and believe that they would find their salvation in this way and could save what is already beyond remedy. Far away from Rome in the far north is no reception possible because of the large distance, and a countermovement develops there to reform everything and still further increases the mischief by fire and sword. I saw the entire holy broadcast technology is in flames.

The dream has quite bothered me because it is just as terrible as realistic.

With a soberly technical analysis of the time after the prophesied end, the broadcast will be partially impossible and in other places only much more difficult. To compensate again for the diminishing field strength, larger receivers will be needed which are designed for pure operation of the fundamental wave. The buildings must always be larger and more complex.

More transmitters must be built in different places to operate always the one which just has the greatest energy. In this way, I could imagine that the broadcast can continue for at least twelve hundred years.

However, maybe the downfall of the ancient broadcast technology of the gods is just a chance to free the sciences from the burden of a secret science. Perhaps scientists who know too much do not need to swallow a cup of poison anymore, innocent women who have a

sixth sense for electromagnetic waves are not burned as witches, the church which you want to establish remembers back to the sacred Scriptures and says goodbye to the pagan office of the Pontifex Maximus which has become quite superfluous.

The enemies of every human being are the external resistances and their own lethargy. The same is true for us technicians. Therefore, the greatest inventions arise only if the necessity is greatest. We only then abandon our complacency and are open to new ideas and technologies.

If the previously used energy source dries up, we will be compelled to discover and exploit new energy sources. Means for the energy storage would be particularly helpful because broadcast receivers and radiotelephones would be no longer local.

You are not going to believe this, but I would not absolutely exclude it either: if needed, everyone eventually inserts a radiotelephone into the pocket and feels at the same time like a god....

References and notes on lesson 30:

- 30.1: Alfred Heuss: *Römische Geschichte*, Wissenschaftliche Buchgesellschaft Darmstadt, 4th ed. 1975, p. 429
und E. Horst: *Konstantin der Grosse*, Eine Biographie, Classen Verl. 1985, Düsseldorf, 2nd ed., p. 149 ff.

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acoustic (with the FM broadcast temple) 165

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III. recommended reading

As a collection of material and physical background for this book, three specialist books of the author are published by INDEL in Villingen-Schwenningen in the book series:

Meyl, K.: Elektromagnetische Umweltverträglichkeit

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ISBN 978-3-940 703-11-8 24 Euro

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ISBN 978-3-940 703-12-5 24 Euro

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Meyl, K.: Scalar waves. Edition belonging to the lecture and seminar "Electromagnetic Environmental Compatibility, part 1 - part 3. (engl. edition). From an extended vortex and field theory to a technical, biological and historical use of longitudinal waves, Indel Verlag 2003
ISBN 978-3-940 703-23-1 34 Euro

Johannes von Buttlar im Gespräch mit Prof. Dr. Konstantin Meyl: **Neutrinopower**, Argo Verl.2000 23 Euro

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