

# **The Consequences of Destroying Survey Beacons by the African Public – A Case Study of Nigeria**

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**Key words:** Survey Beacons, Boundary, Public

## **SUMMARY**

In Nigeria, boundary beacons are deliberately or unknowingly tampered with displaced or removed entirely. This practice has affected both government, individuals and surveyors in one way or the other. Individuals lose their property or are exposed to land-in-dispute, surveyors, who use existing beacons as controls face some problems, government and private firms receive their own part of the problems because when beacons are not on the ground, all designs for development are affected since you cannot see what you have on the plan on the ground using such reference marks. The objective of this paper is to enlighten the public (people) on the importance of survey beacons and the consequences. It highlights the use of survey beacons for determining boundaries and securing property, and implores those authorized to protect these beacons to rise up to the challenge.

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## **1. INTRODUCTION**

Beacons can be considered as permanent survey marks of any kind, and is made of concrete, iron or stone, and includes pillars and boundary posts so made. Beacons are used to demarcate the actual boundaries between one settlement and another. They are surveying tools and are of different sizes and types.

Surveying itself can be considered as that branch of geosciences which deals with the accurate location of points on the earth's surface by making measurements necessary to show the graphical representation and visual presentation of such points and the determination of the configuration of the earth and its gravity field. Cadastral and cartographic surveying were the main aspects of surveying practiced by the early Surveyors as a means of representing vital matters such as routes, boundaries and farmlands. In Nigeria, the practice of surveying and use of beacons was as old as Nigeria because it was one of the oldest professions practiced in the country, and the base for any meaningful development.

The importance of surveying has been recognized in many areas such as in exploitation of mineral deposits, production of geological maps, Agriculture, Erosion control, Hydrology, topographical mapping, development of physical infrastructure and provision of social amenities, land administration and management, Army services.

The term of the public, as in the title means people. It may mean you and I, or those who do not have any value for survey beacons. This group removes any survey beacons, they find around their domain without finding out the reasons for the placement of such beacons. Others sharpen their machetes or crack kernel on survey beacons without knowing that it is an offence. However, where the survey beacons are disturbed or destroyed, the whole survey carried out based on the survey beacons is rendered useless unless a fresh survey or re-establishment of those beacons are carried out.

## **2. BOUNDARIES STARTED FROM CREATION**

Boundaries started with the creation of the world. In God's creation, he separated the Heaven from the Earth, land from water, and located the position of objects (Genesis: Chapter. 1.) With creation, human beings settled according to their races and likes. This settlement occurred with limits of boundaries from one group to another. The use of linear features such as hedges, walls, fences, roads, footpaths, rivers, mountains and hills, or trees is known as the general boundary system.

A boundary is a surface that divides one property from another. In the case of land parcels, it is expected to extend from the centre of the earth vertically upwards to the sky. It is an imaginary imperceptible line that divides two contiguous land holdings. There are general and fixed boundaries. Either points or linear features can demarcate the general boundaries. They can also be described by either the method of metes, bounds and mereing. The fixed boundaries accept the application of survey techniques. The survey method of fixing boundaries by the use of beacons or metes, bounds and mereing are of current use. The legally approved method is the use of monuments called beacons buried at every change in direction or turning points.

Boundaries are demarcated with the primary objective of allocating political territories to enhance and facilitate administration of the territories so created. Boundary demarcation creates awareness among the citizens of each political and administrative local government, state, country and continent so created of the need for security, economic and political rivalry. A well-defined boundary, whether international or internal if respected and maintained with understanding defines possession, and becomes a legal reality Didigwu (2004).

### **3. SURVEYORS AND BOUNDARIES**

Boundaries can be determined by either the artificial or scientific method and by Natural method. In the scientific method, boundaries are demarcated with permanent marks, for example survey beacons, whose positions are well fixed according to survey laws, and related to internationally accepted origin or datum. In this case of surveyors determine boundaries is by burying beacons at every change in direction according to survey regulations and making measurements both angular and linear to determine relative positions. In metes and bounds, a careful description of the starting point is required, from then on distance and bearings are given (Allan et' al, 1968). The essential requirements of any description are clarity, brevity and accuracy.

The natural method of determining boundaries is by the use of features such as rivers, mountains, hills, grassland, ditches, trees, centres of roads and other physical features according to the place. There is no systematic referencing in this method of defining boundaries.

### **4. BEACONS AS BOUNDARY DEMARCATORS**

Beacons are survey tools, which are placed at the changes in directions or turning points along the boundary. They serve as the major interface links between the plans and the land area represented in the plans. Thus the relevance of any plan or survey records depends on the existence and reliability of survey beacons. Beacons are physical evidence on the ground that the surveyor has done some work and are guides to the land users in the determination of the limits of their interest and rights on hand.

According to section 23(1) and 24(1), Cap 121 of 1946, Survey Laws beacons are of various sizes and shapes, and serve different purpose. The various beacons include:

(i) **Boundary Beacons:**

Boundary beacons shall be constructed of concrete or stone in cement mortar and shall be mushroom in shape. The underground portion shall be at least 15cm in diameter and buried to a depth of 20cm. The upper portion shall be 15cm above the ground and shall have a diameter of 25cm. The upper surface shall be smooth and shall have a small hole about a quarter of 15mm in a diameter at the top to form a centre mark and the letter E.P. L.M. or M.R., plus the beacon number. These beacons are specified on the minerals Act, cap 121 of the laws of the Federation of Nigeria and are constructed as in section 24(1) of survey regulations.

(ii) **Layout Beacons:**

Layout beacons shall be 10cm square in section and 61cm long. They are buried 53cm below the ground, and 7.6cm above the ground. The number of each beacon is written on top.

(iii) **Ordinary Property Boundary Beacons:**

The approved dimension for property beacons shall be of 18cm square in section and 77cm long. They are buried 7.6cm above the ground and 68.6cm below the ground. At the centre top, an iron-pin or spike is placed with the beacons number written as appropriate on the forward stations, and an arrow on top of the beacons faces for forward stations.

## 5. DESTRUCTION OF BOUNDARY BEACONS BY THE PUBLIC

Every layman finds the presence of a surveyor on any piece of land whenever beacons are on the ground permanently. When these beacons are conspicuously absent, it becomes difficult to relate the field observations to the plan. The relationship which the survey beacons establish with the survey records cannot be over emphasized but unfortunately, people destroy, tamper and remove beacons as a result of ignorance of its purpose and usefulness. The destruction or removal of survey beacons by some members of the public. They regard survey beacons as simply inconsequential cement mixtures left behind by surveyors after clearing the bush. The government agencies that are aware of the significance of survey beacons and the laws protecting them do not enforce the laws.

In some cases, the destruction or removal of survey marks by the public is not out of malice but ignorance of the law. For example, some farmers sharpen their machetes on top of beacons thereby disturbing the position. The farmers intention is not to remove the beacon but simply does not know why it there. Another farmer or hunter may decide to crack his palm kernel or just use survey beacon as bench when he wants to rest. In some soft soils, the survey beacons are removed by the public and used as seat in the farm.

Having said this, some of the beacons are removed out of malice. This may be as a result of fear that Mr. A is taking over the property of Mr. B. This is the fear of the unknown because the correct approach should have been to find out the purpose of survey, and make legal representation when it affects you. It is a wrong approach to remove or tamper with any survey beacon in the absence of the surveyor. The traditional rulers who are aware of Land Use Decree 1978 and the Survey Laws of the Federal Republic of Nigeria should from time to time enlighten our rural dwellers on the importance of survey beacons. The member of the

public should strictly comply with the provision of the Survey Laws and Land Use Decree 1978 on the occupation of land.

## 6. CONSEQUENCES OF DESTRUCTION OF SURVEY BEACONS

The absence of survey beacons at some boundary corners may hinder the claimant to assert full right of ownership on the land not minding that he has the plan and some survey records of the property. Other problems caused by the destruction of survey beacons are:

(i) **Inconsistency of the survey:**

A survey of a property is complete when what is on the paper (plan) is seen physically on the ground. Therefore, when the survey beacons are destroyed, the records of the property are incomplete because the beacons serve as the major link between the plans and the land area represented in the plans. The destruction of survey beacons may render the whole survey observation based on the survey beacons inconsistency and worthless.

(ii) **Land-in-dispute:**

An occupier of a piece of land knows the extent of his boundary, not only through the plan but also through the physical land marks (beacons) established by the surveyor at the boundary corners during the course of his survey work. When the survey beacons are not properly in position, the adjoining landowners may extend his area of operation, which will cause dispute. An example is the Nigerian Cameroon land-in-dispute over Bakassi Peninsula. Fubara (2002), in his opinion about this dispute said that the failure of Nigeria to involve the competent experts in the areas of demarcation and interpretation of boundaries is the actual pitfall in the various episodes leading to Nigeria's loss of the Bakassi Peninsula and other parts of the Nigerian Cameroon border to Cameroon in the world court judgment. Land-in-dispute is common and sometimes of serious consequences to an extent that lives and properties are destroyed during such clashes. It is clear that majority of the crises that occur in Nigeria and elsewhere in Africa are based on dispute over land.

(iii) **No relationship between Old and New Work :**

Surveyors may not connect new surveys to the old surveys when the beacons are not in-situ. The permanency of survey beacons on the ground make the survey records collected as a result of that survey significance. However, the links, which the survey beacons, established with the survey records help the surveyor to link his future surveys to old survey. This is not possible when the survey beacons have been destroyed.

(iv) **Loss of Services to the Allied Professions:**

The Engineers, the Architects, the Town Planners, and other land use professional base their work on the base map produced by the surveyors. The base map which serve them as guide is complete when the beacons are physically on the ground to help in setting out structure. Whenever the beacons are not on the ground physically, the translations of the drawings are usually not possible until when such beacons are re-established which involves more expenditure and time.

(v) **Densification of Controls:**

Densification is a process whereby controls are extended to some points or place to enable surveyors tie their work to existing beacons with known coordinates. Surveys

do not exist in a vacuum but must always be related to reference points. These reference points are known as **control points** and are established by survey control methods. If survey beacons have been destroyed by any means, it affects other new surveys that should have been tied to the old surveys. This is a problem to surveyors because instead of using the coordinates of nearer survey beacons, they resort to looking for farther controls, and more errors will accumulate when the new survey is connected to longer control network from the project area.

(vi) **High Cost of Re-establishment:**

When some survey beacons are destroyed, it creates new job for the surveyor and new expenditure to the owner. This affects the owner very seriously because he has the plan but cannot locate the actual boundaries. He could enter into dispute with another person if he does not look for a surveyor to re-establish all the beacons. At the process of re-establishment, if the missing beacons are not accurately re-established, there will be misrepresentation of survey information, which renders all the records worthless.

(vii) **Legal Protection of Survey Beacons**

According to Asoegwu (1991), the laws and regulations controlling the survey practice in Nigeria have adequate provisions to assert the significance of survey beacons. In Nigeria the survey monuments are adequately protected in the laws, edicts and decrees of the country, example laws of the Federation of Nigeria cap 194 sections 28 – 33, offer such protection.

(viii) In line with the law, the following groups listed below are empowered to legally protect the beacons provided that no beacon shall be placed in such a position that it will interfere with or be inconvenient to traffic, and building lines shall be maintained where road form the boundary.

(ix) It is within the powers of the local government, under Land Use Decree (1978), to grant customary rights of occupancy to any person or organization for the use of land, within their areas of authority. With this power, **the chairman of a local government or any of his officers** shall arrest any body found destroying survey beacons or any other survey marks and hand over to the police.

(x) **The traditional ruler of any community** is empowered to arrest any body destroying survey beacons, and report to the police for appropriate action.

(xi) **The occupiers of the properties** where the beacons are located should protect them as provided by law. That is they should report any attempt of destruction of beacons to the police.

(xii) The **surveyors** shall report all cases of beacon removal, obliteration or defacement to the Surveyor-General concerned for appropriate action.

(xiii) The **courts** should prosecute the destroyers of the survey beacons as and when they are reported by any of the groups empowered by laws.

## 7. CONCLUSION

This article shows that the survey beacons must be allowed to remain in their properly placed position to serve the purpose of its establishment provided that such position do not violate the survey laws. Properly placed survey beacons should not be rendered inconsequential and worthless by unnecessarily tampering with them. Government and individuals lose when

beacons are destroyed or tampered with because the link between the plan, other survey records and the land marks (beacons) does not exist again until when the beacons are re-established with additional cost.

Survey beacons are reference marks for any infrastructural development. They show limits of one's boundary with another, local or state government boundary with another. It is important that the public be enlightened on the importance of all the categories of survey beacons. They should not in any way see survey beacons as ordinary blocks buried in the ground to take their land. The court should not spare any body caught destroying or removing beacons. The occupiers of land should protect them and advise those who did not secure their lands to do so. The traditional rulers should discharge their duties accordingly and report those who violate the law of the Federal Republic of Nigeria on survey practice to the law enforcement authorities. In the same way, the village head in every village should join hands in reporting those who tamper with beacons. The position of beacons should be placed according to survey laws and Regulations to avoid their destruction/defacing.

Finally, the laws controlling the protection and maintenance of survey beacons should be enforced to enable the public realize the relevance of survey monuments as it affects the practice of surveying in Nigeria.

## **8. RECOMMENDATION**

It is important that the public should be enlightened on the important of all the categories of survey beacons. They should not in any way recognize survey beacons as ordinary blocks buried in the ground to take their land. The courts should not spare any body caught destroying or removing beacons. The occupiers of land should protect them and advise those who did not secure their land to do so. The traditional rulers should discharge their duties accordingly and report those who violates the law of the Federal Republic of Nigeria on survey practice. In the same way, the village head in every village should join hand in reporting those who tamper with beacons.

The position of beacons should be placed according to survey laws and Regulations to avoid the destruction/defacing of beacons. The Federal and State Governments through the Surveyor-Generals should densify controls to all the villages, in Nigeria so as to expose and educate the public on the importance of survey marks. Every survey should be connected to a common and acceptable origin or datum. The rural dwellers should be made to understand that Government owes the land according to Land Use Decree of 1978, and therefore should not take law into their hands destroying Government and individual beacons.

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