(1) பக்தங்களின் எண்ணிக்கை 14

(2) புதுக்கித் திருப்பிய நாள் 2/7/91

(3) ஆதாரங்குறிப்பவர் சுருக்கொப்பம்

தமிழ்நாடு ஆவணக் காப்பகம்.

தமிழ்நாடு அரசு

பபப துறை

அரசாணை எண். —
மு. கோப்புத் தாள் எண். 1170

அச்சகம்
பலவகை

நாள் : 27. 4. 1893

198

7

மடிக்கவோ கண்டபடி கையாளவோ கூடாது

ஆவண. கா-1—18,006—15-6-87.

1170/2

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads,
Civil Works.

READ—the following paper:—

From Major W. L. C. BADDELEY, R.E., Executive Engineer, Tinnevelly Division, to the Superintending Engineer, VI Circle, dated 7th April 1893, No. 1050.

In reference to your No. 843 T.N., of 15th December 1892, on G.O., No. 3245 W., of 25th November 1892, I have the honour to inform you that I have lately inspected the light-house at Muttum.

2. The proposal to erect a separate terminal is based on the assumption that the socket connection at A (*vide* the accompanying sketch) is not in metallic connection with the dome of the light-house. The connection consists of a brass bush secured to the spindle of the vane, the bush again working in a brass socket which is in metallic connection with the dome.

3. The surfaces in contact between the bush and the socket are each nearly 32 square inches and I do not believe that with a thoroughly well-constructed vane, such as the one in question, there can ever be so much play in this connection that no portion of the surfaces shall be in contact. One thirty-secondth part of the available surface would be ample to pass any discharge into the metal dome and thence harmlessly to earth, and fortunately Mr. Chatterton, the lighthouse-keeper, has a record in his log of a lightning discharge on the dome of the light-house, which proves that even with the old conductor the building was safe.

4. On the 21st January 1891, at 5-5 P.M., the dome of the light-house was struck by a very vivid discharge of lightning, the dome being covered with the flash and the report being simultaneous with the flash, showing the close proximity of the electricity. The sky at the time this occurred was clear with the exception of one cloud and there was no repetition of the discharge anywhere in the neighbourhood. There was no damage done to this building. I think this is fairly conclusive evidence that a discharge of electricity was carried off harmlessly by the metal vane and dome to the lightning conductor and thence to earth.

5. The old conductor, consisting of a copper wire rope, is still attached to the dome and its other end connected to the new conductor about 30 feet from the base of the light-house; the building has therefore two conductors both leading to an earth which has been tested to be satisfactory.

6. If it is still considered that there is a risk at any instant of no portion of the 64 square inches of bearing surfaces between the brass bush and socket being in contact, there is another socket in which the lower portion of the vane spindle revolves, its extreme end resting on an agate point, and, as any contact between the spindle and the socket would safely pass any discharge of electricity without doing serious damage, the risk of the spindle being at any instant quite clear of both these connections is so very remote that it is scarcely worth considering.

7. To fix an independent terminal would also in my opinion by no means remove the possibility of a discharge passing down the vane spindle unless the rod is of such height that the vane will be brought within the protected cone * area.

* *Vide* the accompanying sketch.

8. The mechanical work required to fix a long rod like this would be difficult and expensive, as a good deal of scaffolding would be required, and, taking all things into consideration, I think it would be most advisable to leave the arrangements as they are at present.

No. 34 T.N.

Copy, together with the tracings, is forwarded to the Chief Engineer, Public Works Department, with reference to G.O., No. 3245 W., of the 25th November 1892.

2. The undersigned, who agrees with Major Baddeley, R.E., requests to be informed whether, under the circumstances reported, the work approved in the Government order need be carried out.

TRICHINOPOLY,
16th April 1893.

(Signed) W. HUGHES,
Suptdg. Engr., VI Circle.

ORDER—dated 27th April 1893, No. 1170 W., Public Works.

In the circumstances stated, the work approved in G.O., No. 3245 W., dated 25th November 1892, need not be carried out.

(True Extract.)

Major, R.E.,
Under-Secy. to Govt., P.W.D.

To the Superintending Engineer, VI Circle,
with two enclosures.
" Marine Department.

Exd. A. D. Xavier.
Spare Copies

2

1170

3

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of {1893} Madras.

PUBLIC WORKS.

Dated April, 27th.

Read. *Encl.*

G.O., 27th April 1893, No. 1170 W.

APRIL.

Light-house at Muttum

Directing that the work of fixing an independent terminal to the —, approved of in G.O., No. 3245 W., dated 25th November 1892, need not be carried out.

25TH NOVEMBER 1892, No. 3245 W., PUBLIC WORKS.

3

1170
T

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

READ—the following paper :—

From Lieut.-Colonel A. C. SMITH, R.E., Superintending Engineer, VI Circle, to the Chief Engineer, Public Works Department (through the Presidency Port Officer, Madras), dated Trichinopoly, 5th November 1892, No. 713 T.N.

I have the honour to report, for your information, that the lightning conductor attached to Mutham light-house was tested by Mr. Hendrick, Supervisor, on the 14th October 1892 and his report shows satisfactory result.

2. The supervisor states that the conductor is perfect from its connection with dome to ground line, but that the top of windvane, the highest point of the light-house, not being in metallic connection with the conductor, it revolves in a round socket. He suggests an independent terminal being put up in metallic connection with the conductor and about 3 feet higher than the top of the windvane.

3. As regards the earth connection it is stated that it consists of a coil 4 feet outer diameter buried in a pit 10 feet below ground level and 360 feet from the light-house, but not in permanently wet soil. The result obtained is however said to be good and that the conductor is put up neatly.

4. The Executive Engineer has been ordered to carry out the suggestion of the supervisor as to an independent terminal being put up in metallic connection with the conductor.

—

No. 690/230 P.W.

Forwarded.

(Signed) H. A. STREET, Commander R.I.M.,
Presidency Port Officer.

8th Nov. 1892.

ORDER—dated 25th November 1892, No. 3245 W., Public Works.

Communicated to the Marine Department.

2. The action reported in para. 4 of the Superintending Engineer's letter is approved.

(True Extract.)

(Signed) G. T. WALCH,
Ag. Secretary to Govt., P.W.D.

To the Marine Department.
,, Superintending Engineer, VI Circle.

Exd. A. D. Xavier.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated November, 25th.

Recd. *Encl.*

G.O., 25th Nov. 1892, No. 3245 W.

NOVEMBER.

Light-house at Mutham.

Report from the Superintending Engineer, VI Circle, stating that the lightning conductor attached to the — was tested by Mr. Hendrick, Supervisor, communicated, with remarks, to the Marine Department.

P. 31

Letter from Major W. L. C. Baddeley R.E. Executive Engineer, Tinnevelly Div. to the Superintending Engineer VI Circle No: 1050 dated 7th April 1893. 1179/4

In reference to your No: 843-T.W. of 15th December 1892 on G.O. No: 3245 W. of 25th November 1892, I have the honor to inform you that I have lately inspected the Light House at Mutham.

Encls. 2.

2. The proposal to reach a separate terminal is based on the assumption that the Locket connection at A. (Vide the accompanying sketch) is not in metallic connection with the dome of the light house. The connection to the brush secured to the spindle of the frame, the brush again working in a brass socket which is in metallic connection with the dome.

3. The surfaces in contact between the shank and the socket are each nearly 32. Sqre. inches and I do not believe that with so thoroughly well constructed frame such as the one in operation, there can ever be so much play in this connection that no portion of the surfaces shall be in contact. One thirty seventh part of the available surface would be ample to pass any discharge into the

the metal dome and thence harmlessly to earth, and fortunately Mr. Chatterton the light house keeper has a record in his log of a lightning discharge on the dome of the light house, which proves that even with the old Conductor the building was safe.

4. On the 21st January 1891. at 5.5 p.m. the dome of the light house was struck by a very mild discharge of lightning, the dome being covered with the flash, and the report being simultaneous with the flash, showing the close proximity of the electricity. The sky at the time this occurred was clear with the exception of one cloud and there was no repetition of the discharge anywhere in the neighbourhood. There was no damage done to the building. I think this is a fairly conclusive evidence that a discharge of electricity was carried off harmlessly by the metal vane and dome to the lightning Conductor and thence to earth.

5. The old conductor consisting of a copper wire rope is still attached to the dome and is often used connected to the new conductor about 30 ft. from the base of the light house,

the

the building has therefore two conductors leading to one earth which has been tested & be satisfactory. 117/5 ✓

6. If it is still considered that there is a risk at any instant of no portion of the 64. square inches of bearing surfaces between the bronze bush and socket being in contact, there is another socket in which the bronze portion of the vane spindle revolves, its extreme end resting on an agate point, and as any contact between the spindle and the socket would safely pass any discharge of electricity without doing serious damage the risk of the spindle being at any instant quite clear of both these conditions is so very remote that it is scarcely worth considering.

7. To fix an independent terminal would also in my opinion by no means remove the possibility of a discharge passing down the vane spindle unless the rod is of such height that the vane will be brought within the protected cone* area

8. The mechanical work required to fix a long rod like this would be difficult and expensive, as a good deal of scaffolding would be required,

and

*Vide the accompanying sketch.

ed taking all things into considera-
tion I think it would be most ad-
visable to leave the arrangements
as they are at present.

No 34 TN.

Copy together with the Tracings is
forwarded to the Chief Engineer Dun-
with reference to G.O. No 3245. Dated
25th November 1892.

2. The undersigned, who agree
with Major Baddeley R.E, request
to be informed whether, under the cir-
cumstances reported, the work approved
in the G.O. need be carried out.

Enclos:
2 Tracings

Supt 2 bugs office Guide,
Trichinopoly.
16 April 1893.

W. Hughes
Superintdg. Engineer
VI Circle

OTO/-

R. Aug 3245 & 3795 11.92

3729

From
The Supt. Engineer
Circle.

To
The Chief Engineer
P.W.D.

No 34 TR.
Dated 18
Dispd. 18 3 April 1893.
Accn. 19.4.93.
Sec 2 (Mans)

Light House at Mutlam:

Reporting on the condition of the lighting conductor attached to the ——— & requests to be informed whether the works approved in the GO need be carried out —

A P.O
No 1170-W dt/27th April/93

Civil Works
1.2.17

In the circumstances stated, the work approved in G.O No. 3245 W dated 25th November 1892 need not be carried out

Sd/- H Cecil
with 2 enclosures
Marine Dept
27.4.93

DESPATCHED
12 MAY 93

Sd/- H Cecil
with 2 enclosures
Marine Dept
27.4.93

C№ 3729

Govt. of (1893) Madras.

PUBLIC WORKS.

Dated

Read.

Read.

G.O. 27 apl 1893 No. 1170 W

Lighthouse at
Muttam

=

Directing that
the code of posting
an independent
terminal to the ___
approved of in
G.O. 3245 W dated
25 November 1892
need not be
carried out.

10/3

J.C. 28/4