Public Works (1899) Department.

G.O., No. 2615 W

Dated 6 Oct 1899.

[Despatch Abstract.]

Lighthouses, Lights &c in the Bombay Presidency: Enot from the P.W.D forwarding a copy of the annual report on the ____ Annual 1898-99, recorded

Indexed. 18/10

BACK PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

R. W.

~~Marine~~ (1899) Department.

7811

CURRENT No. ~~1274~~

From The Presidency Post-Office, Madras

B/

Order No: 2615 W 3 6-10-99. Recorded.

No. 534/314 G

Dated 16th September 1899.

Received 18-9-99

Enclosures One { Plans-Nil / Others-one } Voted

Spare copies —

SUBJECT.

Forwarding 1 copy of Annual Report on the Light-houses, Lights, &c in the Bombay Presidency for 1898-99.

OLS 534 Marine

BACK PAPERS.

No.	Date.
2431 W	19-9-98
~~4465 C~~	2-~~11~~-97
~~3004 W~~	22-10-~~96~~

FURTHER PAPERS.

No.	Date.

ANNUAL REPORT

ON THE

LIGHT-HOUSES, LIGHTS, &c.,

IN THE

BOMBAY PRESIDENCY

FOR THE

YEAR 1898-99.

Pwr 1
78 11/99

B 703—1

REPORT

ON THE

LIGHT-HOUSES, LIGHTS, &c.,

UNDER THE CONTROL

OF THE

BOMBAY PORT TRUST.

B 703—2

Name of Light.	Location.	Latitude N.	Longitude E.	Nature of Construction, Colour, or any peculiarity of Light-house.	Colour of Light.	Fixed, Flashing, Intermitting, Alternating or Revolving.	Interval of Revolution or Flash or Occultation.	Miles visible in clear Whether.	Arc of Illumination (Bearings are Magnetic and from Seaward).	Character and order of Illuminating Apparatus.	Height of Lantern above High Water (in feet).	For what period of the year exhibited.	Year in which first exhibited.	Additions, Alterations, Improvements or Repairs executed since Last Annual Report.	Additions, Alterations, Improvements or Repairs considered necessary during current year.	Annual Cost of Maintenance. Establishments.	Stores.	Total.	State of Lightning Conductor.	Remarks
																Rs.	Rs.	Rs.		
Prongs Light-house.	Near extreme of reef extending southward from Colaba.	18° 53′	72° 48′	Circular masonry tower with white, red, white and black bands.	White...	Flashing .	Ten seconds.	18	All round the horizon ...	D. 1st order.	136	All round.	1874 ...	Repairs estimated to cost Rs. 800.	Repairs estimated to cost Rs. 800.	6,067	3,485	9,552	In good order.	Electric telegraph to Bombay.
Kennery Light-house.	On the highest part of the Kennery Island.	18° 42′	72° 48′	Octagonal masonry tower on centre of a flat-roofed house.	White with red sector.	Fixed ...	.....	19	From N. 25° W., through north-east and south to S. 20° W.	C. D. 1st order.	153	Do. ...	1867 ...	Repairs estimated to cost Rs. 500.	Repairs estimated to cost Rs. 500.	5,099	4,574	9,673	Do. ...	A Red ray is visible from seaward from north to N. 25°W. A flag-staff 200 feet high with yard stands N. E. by N. from the Light Tower. Electric Telegraph to Bombay, *vid* Alibág.
Sunk Rock Light-house.	On the rock ...	18° 53′	72° 50′	Circular masonry tower painted black.	Red and white.	Occulting.	Five seconds	14	From S. 7° W. through west and north to N. 69° E., White between S 7° W. and S. 30° W., Red from S. 30° W. through west to N. 15° E., White from N. 15° E. to N. 31° E., and Red from N. 31° E. to N. 69° E.	D. 3rd order.	64	Do. ...	1884 ..	Repairs estimated to cost Rs. 500.	Repairs estimated to cost Rs. 500.	3,321	2,000	5,321	Do. ...	The Eclipses are from one to two seconds.
Dolphin Rock Light-house.	Do. ...	18° 55′	72° 50′	Grey masonry tower with white dome.	Green and white.	Fixed ...	.....	5	*Green* from north to west, *White* from west to S. 56° W. and Green from S. 56° W. to S. 34° E	D 5th order.	35	Do. ...	1856; altered 1878; altered 1897.	Repairs estimated to cost Rs. 200.	Repairs estimated to cost Rs. 200.	516	800	1.316	Do. ...	The White light indicates the anchorage for the English Mail Steamers at night.
Light Vessel "Bombay."	In 6½ fathoms, 4½ miles S. 22° W. from Colaba Point.	18° 49′	72° 47′	Light vessel painted red. By day shows a red ball at mast-head.	Red ...	Revolving.	Twenty seconds.	10	All round the horizon.	C. ..	36	Do. ...	1842 ...	Repairs estimated to cost Rs. 800.	Repairs estimated to cost Rs. 800.	8,631	7,500	16,131	None ...	A Blue light is burnt every half hour from 1st June to 30th September, and from 1st October to 31st May, a Blue light is burnt every hour and a torch every half hour. In daylight, a Red flag is hoisted when a vessel is seen.

Port Office, Bombay, 1st April 1899.

GEORGE WILSON, Commander, R. I. M.,
Port Officer, Bombay.

(True Copy)
F. G. DUMAYNE,
Secretary, Bombay Port Trust.

REPORT

ON THE

LIGHT-HOUSES, LIGHTS, &c.,

UNDER THE CONTROL

OF THE

POLITICAL RESIDENT, ADEN.

B 703—3

ADEN.

Name of Light.	Location.	Latitude N.	Longitude E.	Nature of Construction, Colour, or any peculiarity of Light-house.	Colour of Light.	Fixed, Flashing, Intermitting, Alternating or Revolving.	Interval of Revolution or Flash or Occultation.	Miles visible in clear Weather.	Arc of Illumination (Bearings are Magnetic and from Seaward).
Aden Cape ...	On Ras Marshag S. E. part of Cape.	12° 45′	45° 03′	Dark Grey Stone ...	White...	F. ...	.....	20	All round the horizon ...
Aden Light Vessel.	South side of Channel, inner harbour, moored in 18 feet of water.	12° 47′	44° 58′	Light Vessel painted red.	White...	Fl. ...	One minute.	10	Ditto. ..
Morbat Shoal Light Vessel, Aden.	On the edge of Morbat Shoal in 22 feet of water 2¾ cables S. 27° W. from Aden Light Vessel.	12° 47′	44° 58′	Light Vessel painted red. By day carries a red ball at mast head. By night two red vertical lights.	Red ...	F. ...	.....	8	Ditto. ...
"Anadyr" Wreck Light Vessel.	At "Anadyr" Wreck.	12° 47′	44° 57′	Light Vessel painted green. By day carries two black balls horizontally and at night three white lights in triangle.	White...	F. ...	.....	5	.....

Aden, 25th May 1899.

Character and order of Illuminating Apparatus.	Height of Lantern above High Water (in feet).	For what period of the year exhibited.	Year in which first exhibited.	Additions, Alterations, Improvements or Repairs executed since last Annual Report.	Additions, Alterations, Improvements or Repairs considered necessary during the current year.	Annual Cost of Maintenance.			State of Lightning Conductor.	Remarks.
						Establishments.	Stores.	Total.		
						Rs.	Rs.	Rs.		
D. 1st Order.	244 ...	Whole year.	1867 ...	Nil	.....	2,244	.....	...	Good ...	
C.	39 ...	Do. ...	1850, altered 1889.	.....	.....	2,244	.....	...	None ...	
D.	20 (Lower light).	Do. ...	15th January 1895.	.....	.....	432	.....	...	None ...	
.....	...	Do. ...	...	.....	.....	432	.....	...	None ...	

F. BARWICK,
Commander, R.I.M.,
Port Officer, Aden.

B 703—4

PERIM.

E 703—5

Name of Light.	Location.	Latitude N.	Longitude E.	Nature of Construction, Colour, or any peculiarity of Light-house.	Colour of Light.	Fixed, Flashing, Intermitting, Alternating or Revolving.	Interval of Revolution or Flash or Occultation.	Miles visible in clear Weather.	Arc of Illumination (Bearings are Magnetic and from Seaward).
High Light ...	On the summit 1,100 yards S. W. of Obstruction Point.	12° 39′	43° 25′	Dark blue stone ...	White...	Revolving.	One minute ...	22	All round horizon ...
Obstruction Point.	Obstruction Point.	12° 39	43° 26′	Grey Octagonal stone tower.	Do. ...	Occulting.	Ten seconds, *i.e.*, light seven seconds, eclipse one second, light one second, eclipse one second.	14	From North 42° W. through West to S. 26° E.

Character and order of illuminating Apparatus.	Height of Lantern above High Water (in feet).	For what period of the year exhibited.	Year in which first exhibited.	Additions, Alterations, Improvements or Repairs executed since last Annual Report.	Additions, Alterations, Improvements or Repairs considered necessary during current year.	Annual Cost of Maintenance.			State of Lightning Conductor.	Remarks.
						Establishments.	Stores.	Total.		
						Rs.	Rs.	Rs.		
C. D. 1st order.	249	Whole year	1861; altered 1871.	Nil	.....	3,371	3,032	6,403	Defective.	Eclipse not total within 15 miles.
D. 4th order.	85	Do. ...	1885 ...	.....	New roof required.				.....	* The light appears dim about the bearing of limits of visibility; a bearing of the light is, therefore, a necessary precaution.

* 1. These remarks are extracted from the previous annual report and there is nothing to show whether any alteration has been made.

2. If such faults exist, I am of opinion that the lights are seriously defective.

3. An early opportunity will be taken to check the eclipse of High Light and the arc of visibility of the Obstruction Light.

Aden Port Office, 22nd April 1890.

F. BARWICK, Commander, R. I. M.,
Port Officer, Aden.

REPORT

ON THE

LIGHT-HOUSES, LIGHTS, &c.,

UNDER THE CONTROL

OF THE

KARA'CHI PORT TRUST.

B 703—6

Letter from the PORT OFFICER, Karáchi, No. 1048, dated the 9th May 1899 :—

In compliance with the Resolution of Government No. 155, dated 17th July 1895, I have the honour to submit the accompanying statement showing the details required with respect to the Manora Light-house, and the light at the end of the Breakwater for the past official year with the following observations :—

2. During the year no complaints were received with respect to its range of visibility.

3. The heavy guns in the Forts at Manora were fixed during the year without any damage to the structure or lantern apparatus.

4. The highest temperature registered inside the lantern was 90° at noon on the 25th July 1898, and the lowest 54° at 6 A. M. on the 16th January 1899.

5. The light at the end of the Breakwater was efficiently maintained throughout the year.

6. Ninety-two persons visited the light-house on permits issued by the Chairman.

7. The Light-house, Signal Station and Lascars' quarters were maintained in efficient condition at a cost of Rs. 450, and the Lightning Conductor was tested during March last and found in good condition.

8. The usual statement showing the particulars required is attached.

ANNUAL Report of Light-houses Lights, &c., under the control of the Karáchi Port Trust for the year ending 31st March 1899.

Name of Light.	Location.	Latitude N.	Longitude E.	Nature of Construction, Colour, or any peculiarity of Light-house.	Candle Power.	Colour of Light.	Fixed Flashing, Intermitting, Alternating or Revolving.	Interval of Revolution or Flash or Occultation.	Miles visible in clear Weather.	Area of Illumination (Bearings are Magnetic and from Seaward.)
(1) Karáchi ...	Near St. Paul's Church, Manora Point, west side of Entrance 16 yards to the northward.	24° 47′ 37″	66° 58′ 36″	Round tower built of drab coloured stone; seaward half white-washed and 91 feet in height from ground to top of coping.	10,000	White...	Fixed...	...	20	Visible seaward with full brilliancy from N. 56 W. to S. 56 E.; landward semi-circle, partially screened by a dioptric mirror.
(2) Breakwater Light.	At the extreme end of the Breakwater.	24° 47′ 23″	66° 59′ 6″	Run out from top of cliff to beacon at end of Breakwater, from whence it is exhibited by means of an endless wire-rope supported by masts at intervals.	...	Red ...	Do. ..	...	5	.....
(3) Leading Light, Outer.	On Kiamari Island.	.....	.....	Wooden structure painted black with white marks at the top.	...	Green...	Do. ...	...	3	.....
(4) Leading Light, Inner.	On Kiamari Groque.	24° 49′ 0″	66° 59′ 0″	Do. ...	...	Red ...	Do. ...	...	3	.....

PORT OFFICER'S OFFICE, MANORA,
9th May 1899.

the Karáchi Port Trust for the year ending 31st March 1899.

Character and order of illuminating Apparatus.	Height of Lantern above High Water (in feet).	For what period of the year exhibited.	Year in which first exhibited.	Additions, Alterations, Improvements or Repairs executed since last Annual Report.	Additions, Alterations, Improvements or Repairs considered necessary during current year.	Annual Cost of Maintenance.			State of Lightning Conductor.	Remarks.
						Establishments.	Stores.	Total.		
						Rs.	Rs.	Rs.		
Dioptric 1st order.	148	Throughout the year.	1849; improved 1877; altered 1888.	Ordinary repairs, costing Rs. 450.	Nil	3,227	2,437	5,664	Good ...	During the S.-W. monsoon visible from 10 to 15 miles. *Harbour Channel Buoys.* 6 Starboard-hand buoys show red lights. 5 Port-hand buoys show green lights.
Anchor Lamp No. 3, Cera Light Co.	54½	Do. ...	Improved 1890; altered 1897.	Nil	Nil	...	...	...	.....	During the S.-W. monsoon visible at least 2½ miles. This light is worked by the Light-house establishment.
Cera Light Co.'s Patent Lamp.	20	When it is impossible to light the buoys.	1896 ..	Nil	Nil	...	...	...	.....	These Lights, in line bearing N. by W., ½ W., lead through the channel.
Do. ...	*Upper 30′ Lower 20′	Do. ...	1896 ...	Nil	Nil	...	...	...	.....	*Two lights are shown on this beacon.

CHARLES C. HEWETT, Commander, R. I. M.,
Port Officer, Karáchi.

B 705—7

REPORT

ON THE

LIGHT-HOUSES, LIGHTS, &c.,

UNDER THE CONTROL OF THE

SALT DEPARTMENT.

B 703—8

Letter from the Collector of Salt Revenue, Bombay, No. 3783, dated the 29th June 1899.

I have the honour to submit the annual report on light-houses under the control of this Department, for the year 1898-99, in the form prescribed by Government in their Resolution in the Marine Department, No. 155 of the 17th July 1895.

The number of Coast and Harbour lights during the year is the same as that during the previous year. The light-house at Harnai, which was in course of construction, was completed during the year and the light was for the first time exhibited on the 1st April 1899.

3. During the year under report the light-houses noted in the margin have been provided with lightning conductors. The work of providing lightning conductors to some of the light-houses in the Southern Division is in hand and will be completed during the current year.

Bulsár, Bhagwa, Dándi, Lohara, Gogo, Dholera.

4. The Oyster Rock Light-house, Kárwár, has during the last year been fitted with a new apparatus from England, and heavy mineral oil has been substituted for cocoanut oil, with excellent results.

5. All the light-houses were repeatedly visited and inspected during the year under report by the Sarkárkúns, Coast Guard Inspectors and Assistant Collectors of Salt Revenue. They were efficiently maintained throughout the year and the conduct of the establishment was satisfactory.

Name of Light.	Location.	Latitude N.	Longitude E.	Nature of Construction, Colour, or any peculiarity of Light-house.	Colour of Light.	Fixed, Flashing, Alternating or Revolving.	Interval of Revolution or Flash or Occultation.	Miles visible in clear Weather.	Arc of Illumination (Bearings are Magnetic and from Seaward).
Bulsár ...	At the mouth of the Auranga River (Southern side).	20° 37′ 15″	72° 32′ 35″	Wooden staff with service cabin at the base, *White*.	White ...	Fixed ...	*Nil.*	9 to 10	180° E.
Tápti	At the mouth of the Tapti River (North side).	21° 5′ 0″	72° 37′ 0″	Stone masonry column, white, plate glass lantern house.	Do. ...	Do. ...	Do. ...	18	South, through Eastward and North to 8° W. 250°.
Bhagwa Dándi.	On a sand mound S. W. by W. ¾ W. from Dándi Village.	21° 19′ 20″	72° 35′ 0″	Wooden staff with iron travellers, *White*.	Do. ...	Do. ...	Do. ...	10	S. ½ W., through East and North to N½ W. 213° 45′ 0″.
Piram	On the Island of Piram near Gogo, 3 miles from the mainland.	21° 35′ 30″	72° 20′ 0″	Stone masonry column with black balcony and plate-glass lantern house, *White*.	Do. ...	Do. ...	Do. ...	18	N. E., by N½ N., through North and West, to S. E½ E., 288°.
Lohara ...	At the entrance of the Narbuda River, Gulf of Cambay.	21° 39′ 0″	72° 30′ 0″	Trellis work, iron structure.	Red ...	Do. ...	Do. ...	8	S. E., through East and North, to N. W. 202° 30′ 0″.
Devjágan ...	On the north bank at the entrance of the Dhádhur River, Gulf of Cambay.	21° 55′ 0″	72° 30′ 0″	Brick masonry column, *White*.	White ...	Do. ...	Do. ...	12	South, through East and North, to N. 670° W. 248°.
Gogo	On the Southern side of the town of Gogo.	21° 40′ 43″	72° 15′ 38″	Trellis work, iron structure.	Do. ...	Do. ...	Do. ...	10	N. W., through West and South, to S. S. E., 247° 30′ 0″.
Dholera ...	Western shore of the Gulf of Cambay, 2 miles from Chilkhari or Whittle Bandar.	22° 13′ 0″	72° 13′ 33″	Wooden structure, with platform at the top for lantern.	Do. ...	Do. ...	Do. ...	12	E½ N., through North and West, to S. S. E. 270°.
Talkeshvar Light.	On Talkeshvar Point, south side of entrance to Dábhol Creek.	17° 34′ 0″	73° 0′ 0″	An iron column with house at base painted white.	Do. ...	Do. ...	Do. ...	15	Seaward from N. 15 W. through East, to S. 17° E.
Anjanval Green Light.	Northernmost point of Anjanvel Port.	17° 34′ 0″	73° 0′ 0″	Teakwood post with iron bracket for lantern to rest on.	Green ...	Do. ...	Do. ...	5	Do. ...
Dábhol Red Light.	West end of the Dábhol Bandar.	17° 35′ 0″	73° 0′ 0″	Do. do. ...	Red ...	Do. ...	Do. ...	4	Do. ...
Jaigad Headland Outer Light.	Jaigad Headland near Dhaman Khol.	17° 18′ 0″	73° 11′ 0″	A structure of open iron work.	White ...	Do. ...	Do. ...	13	Seaward from South, through East to North.
Jaigad Port Inner Light.	Northern bastion of Jaigad Fort.	17° 18′ 0″	73° 11′ 0″	Mounted on the wall of the Fort.	Red ...	Do. ...	Do. ...	13	.....
Ratnágiri Light	On the western-most point of the south on the highest bastion of the Fort.	16° 59′ 0″	73° 0′ 0″	White masonry tower.	White ...	Do. ...	Do. ...	15	From N. 17° W., through North and East, to S. 30° W.,
Jaitápur Light.	On the end of the cliff at the south point of the Bay.	16° 36′ 0″	73° 0′ 0″	Do. do. ...	Do. ...	Do. ...	Do. ...	9	S. 30° W., through South and East, to N. 15° W.
Málvan Floating Light.	South-east of the rock at the entrance.	16° 0′ 0″	73° 0′ 0″	A small red barge fitted as a light vessel.	Red ...	Floating...	Do. ...	4	.....
Málvan Green Shore Light.	On the beach, 230 yards north of a white stone cross.	16° 0′ 0″	73° 0′ 0″	White mast ...	Green ...	Fixed ...	Do. ...	2	One quadrant between S. 67° E. and North 22° E.
Vengorla Rock Light.	On the north-west point of the extreme S.-E. Island.	15° 73′ 0″	73° 0′ 0″	White masonry tower or square building.	White ...	Do. ...	Do. ...	16	From S. 15° W., through East to North 75° W.

Character and order of Illuminating Apparatus.	Height of Lantern above High Water (in feet).	For what period of the year exhibited.	Year in which first exhibited.	Additions, Alterations, Improvements or Repairs executed since last Annual Report.	Additions, Alterations, Improvements or Repairs considered necessary during current year.	Annual Cost of Maintenance. Establishments.	Stores.	Total.	State of Lightning Conductor.	Remarks.
						Rs. a. p.	Rs. a. p.	Rs. a. p.		
6th order dioptric, two flat wicks, kerosine.	58	9 monthly 1st September to 31st May.	1883 ...	Nil	Nil	547 10 8	99 2 0	646 12 8	Newly attached.	
4th order dioptric. two round wicks. Douglas burner, heavy mineral oil.	91	Throughout the year.	1867 ...	New platform boards in the light-house room.	Nil	574 7 3	54 9 0	629 0 3	In good order.	
6th order dioptric, two flat wicks, kerosine.	36	9 monthly, 1st September to 31st May.	1886 ...	Nil	Earthwork at the base of the cabin.	411 0 0	68 14 0	479 14 0	Newly attached.	
4th order dioptric, two round wicks, Douglas burner, heavy mineral oil.	115	Throughout the year.	1865 ...	New iron bracing straps on the outside of the lantern house.	Nil	966 0 0	47 11 0	1,013 11 0	In good order.	
6th order dioptric, one round wick, kerosine.	30	9 monthly, 1st September to 31st May.	1887 ...	Nil	New quarters for the Khalásis.	486 0 0	70 6 0	556 6 0	Newly attached.	
5th order dioptric, kerosine, two flat wicks.	40½	9½ monthly, 1st September to 15th June.	1889 ...	Nil	Nil	457 3 7	84 12 0	541 15 7	In good order.	
6th order dioptric, one round wick, kerosine.	25	Throughout the year.	1895 ...	Nil	Nil	439 12 0	96 2 0	535 14 0	Newly attached.	
5th order dioptric, two flat wicks kerosine.	44	9 monthly, 1st September to 31st May.	1888 ...	Nil	Nil	681 3 1	97 0 0	778 3 1	Do.	
5th order dioptric.	333	Throughout the year.	1880 ...	Nil	Nil	514 0 0	208 7 0	722 7 0	No Lightning Conductor attached.	
Ordinary lantern, country made.	36	9 monthly, 16th September to 15th June.	1889 ...	Nil	Nil	.....	46 4 6	46 4 6	Do.	
Do. ...	24	Do. ...	1889 ...	Nil	Nil	72 0 0	54 14 6	126 14 6	Do.	
5th order dioptric.	134	Throughout the year.	1896 ...	Nil	Nil	638 0 0	225 13 9	863 13 9	Do.	
.....	...	Do. ...	1896 ...	Nil	Nil	432 0 0	150 2 3	582 2 3	Do.	
6th order dioptric.	320	Do. ...	1867 ...	Nil	Nil	504 0 0	270 5 9	774 5 9	Do.	
Do. ...	75	Do. ...	1873 ...	Nil	Nil	629 11 7	349 2 9	978 14 4	Do.	
Round lantern.	28	9 monthly, 16th September to 15th June.	1878 ...	Nil	Nil	323 0 0	82 11 0	405 11 0	Do.	
Square lantern.	20	Do. ...	1878 ...	Nil	Nil	.....	32 1 6	32 1 6	Do.	
4th order dioptric.	132	Throughout the year.	1890 ...	Nil	Nil	1,391 1 8	406 2 6	1,797 4 2	Good.	

Name of Light.	Location.	Latitude N.	Longitude E.	Nature of Construction, Colour or any peculiarity of Light-houses.	Colour of Light.	Fixed, Flashing, Intermiting, Alternating or Revolving.	Interval of Revolution or Flash or Occultation.	Miles visible in clear Weather	Are of Illumination (Bearings are Magnetic and from Seaward).
Vengorla Por Light.	On Vengorla Point one mile west of the town.	15° 51′ 0″	73° 0′ 0″	Mast above roof of a white masonry house.	White two vertical lights one 20 ft. above the other.	Fixed ...	Nil ...	9	180° from S. 18° E., through E. to N. 18° W.
Oyster Rock Light.	On the summit of the Oyster Rocks.	14° 49′ 25″	74° 2′ 50″	Circular masonry tower painted white.	White ...	Do. ...	Do. ...	20	185° Seaward, also visible rest of the circle Landward.
Koney Light ...	Port Office, Kárwár	14° 48′ 20″	74° 6′ 20″	Flag staff	Red ...	Do. ...	Do. ...	3	In every direction Seaward.
Tádri Light ...	On the summit of a hill to the north of the entrance of the Tádri River.	14° 31′ 0″	74° 29′ 0″	Wooden mast ...	White ...	Do. ...	Do. ...	8	In every direction Seaward, through N. to N. by W½ W.
Kumta Light...	On the headland forming the north horn of the Bay.	14½°	74½°	Bright fixed light hoisted and lowered by a small chain leading through an iron tabular mast.	Do. ...	Do. ...	Do. ...	12	270° of Horizon ...
Honávar Light.	On the south bank of the Honávar Creek.	.....	.....	Wooden mast ...	Do. ...	Do. ...	Do. ...	6	In every direction Seaward.
Bhatkal Light .	On the summit of the hill which forms the Northern boundary of the Bay.	13° 58′ 0″	74° 31′ 0″	Do. ...	Do. ...	Do. ...	Do. ...	8	Do. ...

POONA, *29th June 1899.*

Character and order of Illuminating Apparatus.	Height of Lantern above High Water (in feet).	For what period of the year exhibited.	Year in which first exhibited.	Additions, Alterations, Improvements or Repairs executed since last Annual Report.	Additions, Alterations, Improvements or Repairs considered necessary during current year.	Annual Cost of Maintenance. Establishments.	Stores.	Total.	State of Lightning Conductor.	Remarks.
						Rs. a. p.	Rs. a. p.	Rs. a. p.		
6th order dioptric.	Upper 371 feet lower 350 feet.	Throughout the year.	1869 ...	Nil	Nil	595 6 0	440 3 6	1,035 9 6	No lightning Conductor attached.	
1st order dioptric.	138	Do. ...	1864 ...	Apparatus for burning mineral oil has been substituted for old apparatus made for Vegetable oil	Nil	3,308 4 0	5 915 13 4	9,254 1 4	Good ...	
Red lantern ...	65	Do. ...	1864 ...	Nil	Nil	157 0 0	194 6 3	351 6 3	No lightning Conductor attached.	
Ship's mast head light.	120	For 9 months from 16th September to 15th June.	1891 ...	Nil	Nil	455 7 6	50 12 8	506 4 2	Do. ...	
5th order dioptric.	116	Throughout the year.	1888 ...	Nil	Nil	660 15 6 Grain compensation 1 0 0 661 15 6	304 1 6	966 1 0	Do. ...	
Ship's mast head light.	23	For 9 months from 16th September to 15th June.	1891 ...	Light mast having worn out a new one has been supplied.	Nil	264 0 0	184 9 10	448 9 10	Do. ...	
Do. ...	120	Do. ...	1890 ...	Nil	Nil	264 0 0	90 8 9	354 8 9	Do. ...	

H. O. QUIN,
Acting Collector of Salt Revenue.

REPORT

ON THE

LIGHT-HOUSES, LIGHTS, &c.,

UNDER THE CONTROL

OF THE

POLITICAL DEPARTMENT.

B 703—10

KOLABA POLITICAL AGENCY.

REPORT on the Cambay Light Boat

Name of Light.	Location.	Latitude N.	Longitude. B.	Name of Construction, Colour or any peculiarity of Light-house.	Colour of Light.	Fixed, Flashing, Intermitting, Alternating or Revolving.	Interval of Revolution or Flash or Occultation.	Miles visible in clear Weather.	Arc of Illumination (Bearings are Magnetic and from Seaward.)
1	2	3	4	5	6	7	8	9	10
The Cambay Light Boat.	Situated at the mouth of the Creek.	22° 17′ 20″	72° 38′ 50″	There is no Light-house at Cambay, but the light is exhibited from a light boat specially built for the purpose.	White ...	Fixed ...	...	8 miles ...	All round the horizon.

Cambay, 1st April 1899.

for the year ending 31st March 1899.

Character and order of Illuminating Apparatus.	Height of Lantern above High Water (in feet).	For what period of the year exhibited.	Year in which first exhibited.	Additions, Alterations, Improvements or Repairs executed since last Annual Report.	Additions, Alterations, Improvements or Repairs considered necessary during the current year.	Annual Cost of Maintenance.			State of Lightning Conductor.	Remarks.
						Establishment.	Stores.	Total.		
11	12	13	14	15	16	17	18	19	20	21
						Rs. a. p.	Rs. a. p.	Rs. a. p.		
It is a simple large kerosine oil lamp attached to the mast head of the Light Boat.	25 feet ...	From 1st October to 15th of June.	1885 ...	Ordinary repairs were made.	Petty repairs, such as oiling or painting the boat, may be necessary.	156 0 0	51 2 3	207 2 3	The light has no Conductor.	

MADHAVRAM A.,
Diván.

KOLÁBA POLITICAL AGENCY.

B 703—12

Letter from the State Kárbhári, Janjira, No. 512, dated the 6th April 1899.

* * * * * *

2. The light exhibited is 4th order dioptric flashing white light and is visible from a distance of 24 miles in clear weather. It was regularly exhibited from the white masonry tower throughout the year under report and has been efficiently maintained to the entire satisfaction of the navigators for whose assistance and guidance it was set up. 182½ gallons of heavy mineral oil of 250° test were consumed on exhibition of the light.

3. The working establishment consisted, as last year, of one head light-keeper and three subordinate light-keepers, who were all in good health and kept the lighting apparatus, &c., in good order.

4. The light-house was inspected by Mr. Payne, the Inspector, Coast Guard Service, in the months of April 1898 and February 1899, and remarked to have been in good order.

5. The lightning conductor attached to the light-house was tested on 8th March 1898 by Mr. Framji, Apprentice Engineer in the Southern Division, and was found in perfect condition. The conductor earth of the light-house was improved by filling the pit with more charcoal and scrap iron, and arrangement for watering to keep the earth moist, has been made as suggested by the Superintending Engineer, Southern Division (*vide* this office No. 1254, dated 16th August last).

6. Comparative statements of expenses, &c., are herewith appended.

ANNUAL REPORT of the Nánowli Light-house

Name of Light.	Location.	Latitude N.	Longitude E.	Nature of Construction, Colour, or any peculiarity of Light-house.	Colour of Light.	Fixed, Flashing, Intermitting, Alternating or Revolving.	Interval of Revolution or Flash or Occultation.	Miles visible in clear weather.	Arc of Illumination (Bearings are Magnetic and from Seaward).
Rájpuri Point ...	Near the village of Nánowli on a rock point near extreme.	18° 17′	72° 56′	Masonry tower painted white.	White .	Flashing...	Ten seconds "Light" and five seconds "Dark."	24	From S. 35° W., through South and East, to N. 40 W.

Murud Janjira, 6th April 1899.

ending 31st March 1898.

Character and order of Illuminating Apparatus.	Height of Lantern above High Water (in feet).	For what period of the year exhibited.	Additions, Alterations, Improvements or Repairs executed since last Annual Report.	Additions, Alterations, Improvements or Repairs considered necessary during current year.	Year in which first exhibited.	Annual Cost of Maintenance.			State of Lightning Conductor.	Remarks.
						Establishment.	Stores.	Total.		
						Rs. a. p.	Rs. a. p.	Rs. a. p.		
Dioptric 4th order.	179	Throughout the whole year.	Ordinary repairs to the existing buildings, &c., made.	Nil	1884 ...	431 0 0	540 10 2	971 10 2	In good order.	

V. S. KOPPIKAR,
State Kárbhári, Janjira.

B 703—13

BARODA POLITICAL AGENCY.

B 703—14

ANNUAL Report on the Light-houses in Baroda

Name of Light.	Location.	Latitude N.	Longitude E.	Nature of Construction, Colour, or any peculiarity of Light-house.	Colour of Light.	Fixed, Flashing, Intermitting, Alternating or Revolving.	Interval of Revolution or Flash or Occultation.	Miles visible in clear Weather.	Arc of Illumination (Bearings are Magnetic or from Seaward).
Dwárka Point ...	On cliff West of Town and 117 yards within high water line.	22° 14′	68° 57′	Circular white stone tower.	White ...	Fixed ...	...	12	Arc of illumination 180. Bearings seaward from N. 33° W. through North and East to S. 33° E.
Samiani (Bet Harbour).	On the highest and nearly central part of Samiani Island, entrance to Harbour.	22° 29′	69° 94′	Circular white stone tower.	White with red sector.	Fixed ...	...	12	Arc of illumination 360. Bearings seaward from N. 53° E. through East, South and West to N. 8° E. A red sector visible between the Bearings of S. 37½° W. and S. 67½° W. is shown over the Chinri reef. A red sector is also shown over the Pagar sand bank lying to S. E. of Chinri and between the Bearings 80° W. and N. 69°.
Madhwad Point near Div Head (Baroda State).	On a high rock near the Velan Creek.	20° 41′	70° 50′	Tower is built of lime stone and masonry, is hexagonal in form and the colour is white.	White ...	Revolving.	10 seconds	14	Every direction Seaward .

BARODA, *6th May 1899.*

Territory for the year ending 31st March 1899.

Character and order of Illuminating Apparatus.	Height of Lantern above High Water (in feet).	For what period of the year exhibited.	Year in which first exhibited.	Additions, Alterations, Improvements, or Repairs executed since last Annual Report.	Additions, Alterations, Improvements or Repairs considered necessary during current year.	Annual Cost of Maintenance. Establishment.	Stores.	Total.	State of Lightning Conductor.	Remarks.
						Rs. a. p.	Rs. a. p.	Rs. a. p.		
C. D. 4th order.	70	Whole year.	1866 ...	Nil	Nil	232 8 0	283 15 10	522 7 10	Lightning Conductor in good order.	Maintained at the cost of His Highness the Gáekwár.
D. 4th order.	71	Whole year.	1876 ...	Petty repairs...	Nil	360 0 0	215 14 7	575 14 7	Lightning Conductor in good order.	Maintained at the cost of His Highness the Gáekwár. Cost of petty repairs, Rs. 11-0-0.
D. 5th order.	106	Throughout the year.	1882 ...	Except white washing, no other repairs have been executed.	2 panes of glass are cracked. These should be replaced.	510 11 5	256 6 1	767 1 6	Good ...	Maintained at the cost of His Highness the Gáekwár.

N. C. MARTELLI, Lieut.-Colonel,
Resident at Baroda.

KÁTHIÁWÁR POLITICAL AGENCY.

Statement showing particulars regarding Light-houses

Name of Light.	Location.	Latitude N.	Longitude E.	Nature of Construction, Colour or any peculiarity of Light-house.	Colour of Light.	Fixed Flashing, Intermitting, Alternating or Revolving.	Interval of Revolution or Flash Occultation.	Miles visible in clear Weather.	Arc of Illumination (Bearings are magnetic and from Seaward).
Rojhi ...	On temple at the mouth of the Navánagar Creek.	22° 33′	70° 01′	Cast iron column on circular white tower.	White...	Fixed...	.....	12	Every direction seaward, but cut off by the Island of Pirotan.
Karámbhár .	On the Karámbhár Island in the Salaya Creek.	22° 26′	69° 35′	Small square masonry tower, painted white.	Do. ...	Do. ...	.....	10	From S. 59° W. through South and East to N. 18° W.
Pirotan ...	On Pirotan Island.	22° 36′	69° 56′	Cast iron column on a circular masonry tower with black bands.	Do. ...	Do. ...	.....	12	Visible through an arc of 270° or between the bearings of N.-E. by E. to N.-W. by N.
Porbandar ...	Sea face of town.	21° 38′	69° 36′	Round bastion, white stone tower.	Do. ...	Do. ...	.....	15	From North 48° W. through N. to S. 48° E.
Tower of Administrator's House at Porbandar.	Do. ...	21° 37′	69° 37′	Square tower on bungalow.	Red ...	Do. ...	.....	3	From existing Light-house 3-57 East.
Navibandar...	Do. ...	21° 26′	69° 47′	Square bastion in town wall, white.	White ..	Do. ...	.....	5	180° from North, 48° W. through N. to S. 48° E.
Mangrol ...	On a bungalow situated opposite the anchorage.	21° 06′	70° 06′	On the top of a square house with wooden roof having a dark appearance.	Do. ...	Do. ..	.....	4	North-West to South-East.
Verával ...	On the Verával Wharf.	20° 54′	70° 22′	White octagonal building with two outside galleries in the form of plain tower and painted green and red.	Do. ...	Do. ...	.....	10 or 12	141° seaward made up as under:—35° from the South to the East, 106° from the South to the West as already ascertained.
Jáfrábád ...	On the promontary at the entrance to the Port of Jáfrábád.	20° 52′	71° 23′	The light is fixed at the top of the building, painted white. The building has two stories. The first square and the second round.	Do. ...	Flashing.	Single flash, every 20 seconds and a complete revolution of the apparatus in every 2 minutes.	16	360° visible all round the compass.
Mahúvá ...	Mainland ...	21° 02′	71° 49′	Masonry standing on a prominent cliff. The armature being placed on a terrace over the Keeper's residence.	Do. ...	Fixed...		13-2 English miles.	360° ... ...
Gopunáth ..	Mainland, Gopunáth Point.	21° 12′	70° 06′	Limestone masonry tower.	Do. ...	Do. ...	.....	6 miles .	180° ... ...
Bhávnagar...	Mainland ...	21° 47′	72° 14′	An iron cabin, 12 feet square and 10 feet high to the cave on iron screw piles through the roof of which rises a wrought iron taper master 40 feet high to centre of light, all painted white.	Do. ...	Do. ...	.....	8-8 English miles.	360° ... ...

Káthiáwár Political Agent's Camp,
15th June 1899.

under the Kathiawar Political Agency for 1898-99.

Character and order of Illuminating Apparatus.	Height of Lantern above high Water in feet.	For what period of the year exhibited.	Year in which first exhibited.	Additions, Alterations, Improvements or Repairs executed since last Annual Report.	Additions, Alterations, Improvements or Repairs considered necessary during current year.	Annual Cost of Maintenance. Establishments.	Stores.	Total.	State of Lightning Conductor.	Remarks.
						Rs. a. p.	Rs. a. p.	Rs. a. p.		
Dioptric, 6th order.	48′	Throughout the year.	1869 ...	Nil	Nil	90 0 0	150 0 0	240 0 0	Conductor removed.	
2 common Kerosine lamps.	36′	Do. ...	1882 ...	Do.	Do.	174 0 0	112 0 0	286 0 0	Not tested, but will on receipt of testing apparatus.	
Dioptric, 5th order.	44½	Do. ...	1898 ...	Do.	Do.	258 0 0	120 0 0	378 0 0	No Lightning Conductor.	
Dioptric, 4th order.	90′	Do. ..	1876 ...	Do.	Do.	280 0 0	691 12 6	971 12 6	Good.	
Anchor light.	80′	15th September to 15th June.	1887 ... 1898 ...	Newly exhibited .	Do.	24 0 0	50 0 0	74 0 0	Do.	
Anchor light Lenus Duplex Lamp for mineral oil.	60′	1st April to 15th June 1898. 16th September 1898 to 31st March 1899.	1896 ...	Nil	Do.	84 0 0	23 1 3	107 1 3	No Lightning Conductor.	
A country lantern containing 5 burners, burning Kerosine oil.	75′	Whole year.	1877 ...	Nil	Do.	72 0 0	44 6 3	116 4 3	Nil.	
Dioptric, 4th order.	56′	Do. ...	1865 ...	Petty necessary repairs made.	Do.	230 10 6	135 8 0	366 2 6	Good.	
Do. ...	85′	Do. ...	1876 ... 1895 ...	Ordinary repairs executed.	Do.	372 0 0	710 11 1	1,082 11 1	Do.	
Catoptric sideral, 3rd order.	99′	Do. ...	1871 ...	Do. ...	Do.	366 0 0	224 0 0	590 0 0	Good order.	
Cato-Dioptric, 6th order.	67′ 7″	Do. ..	1879 ...	Do. ...	Do.	252 0 0	240 0 0	492 0 0	Do.	
Dioptric, sideral, 5th order.	43′ 6″	Do. ...	1891 ...	Do.	Do.	411 0 0	120 0 0	531 0 0	Do.	

J. M. HUNTER, Colonel,
Political Agent, Káthiáwár.

CUTCH POLITICAL AGENCY.

B 703—16

Name of Light.	Location.	Latitude.	Longitude.	Nature of Construction, Colour, or any peculiarity of Light-house.	Colour of Light.	Fixed, Flashing, Intermitting, Alternating or Revolving.	Interval of Revolution or Flash or Occultation.	Miles visible in clear Weather.	Arc of Illumination (Bearings are Magnetic and from Seaward).
Cutch-Mándvi ...	On the S. W. bastion of the foot.	22 49 41	69 20 21	White masonry tower above the foot-wall.	White ...	Revolving.	Three flashing short intervals every 30 seconds.	18 miles...	Visible all direction seaward 180° facing S. W.
Mándvi Breakwater.	At the end of Breakwater.	.....	.....	On the jib of the Hercules (crane).	Red ...	Fixed ...	...	8 to 9 miles.	.....
Navinal	Navinal Point.	22 44 18	69 41 36	White masonry tower.	White ...	Do. ...	...	15 miles...	E. N. E. round by the north to W. S. W. 180°.
Tekra	Tetra Island south of Tuna.	22 55 30	70 7 10	Cast iron column based on masonry platform.	Do. ...	Do. ...	...	12 miles...	270° ...

Cutch for the year 1898-99.

Character and order of illuminating Apparatus.	Height of Lantern above High Water in feet.	For what period of the year exhibited.	Year in which first exhibited.	Additions, Alterations, Improvements or Repairs executed since last Annual Report.	Additions, Alterations, Improvements or Repairs considered necessary during current year.	Annual Cost of Maintenance.			State of Lightning Conductor.	Remarks.
						Establishment.	Stores.	Total.		
	Feet.					Rs. a. p.	Rs. a. p.	Rs. a. p.		
Holophotal 4th order.	115	Throughout the whole year.	December 1873 altered December 1889.	Painting to Lantern case, balcony, &c., was made.	Petty repairs such as white-washing may be necessary.	421 8 1	60 15 2	482 7 3	Good order.	
Dioptric 6th order.	30	Do. ...	1st April 1890.	New canvas curtains provided.	.....	...	43 3 11	43 3 11	.....	No lightning conductor.
Cato dioptric 4th order.	58 above mean sea level.	Do. ...	23rd April 1892.	Painting to Lantern case, balcony, &c., was made.	Petty repairs such as white-washing may be necessary.	421 8 1	24 8 8	446 0 9	Good order.	
Dioptric 6th order.	32'-2"	Do. ...	1878-79 ...	The cast iron column ladder and platform, &c., were coloured and the masonry building was repaired during the year which cost Rs. 57-12-9.	.....	227 15 9	24 5 6	252 5 3	.....	No lightning conductor.

KESHAVJI S. KUDHBHATTI, C.E., A.M.I.C.E.,
State Engineer.

Heading Report on Light & Lighthouses.

Presidency Port Office,

No. 534/314 4

Madras, 16 September 1899.

From

The Presidency Port Officer, Madras.

To

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Forwarded to the Secretary to Government, Public Works Department, with reference to G.O., Financial, No. 751, dated 6th November 1896.

Thos O'R Dunn

Commander, R.I.M.,

Presidency Port Officer.

x
1 copy of Annual Report on the Light-houses, Lights, &c. in the Bombay Presidency for 1898-99.