

CYCLONE WARNING ORGANISATION OF INDIA METEOROLOGICAL DEPARTMENT



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1. Introduction

Cyclone warning is one of the most important functions of the India Meteorological Department and it was the first service undertaken by the Department as early as in 1865 and thus the service started before the establishment of the department in 1875. The historical development of the cyclone warning system leading to the organisation as it is today has been given in the above paragraphs. The functions and responsibilities of the various offices of the cyclone warning organisation will be described briefly in the subsequent sections of this chapter so as to provide a bird's eye view. More details about the functions will be dealt with in subsequent chapters itemwise. Two important limbs of an efficient storm warning system are an observational organisation and a telecommunication organisation. These two will also be dealt with in subsequent chapters.

2. Organisational Structure

2.1. Historical perspective

In 1864, two severe cyclonic storms in quick succession hit the east coast of India, causing enormous loss of human lives and property – the first one struck Kolkata in October and the second one struck Machilipatnam in November. Concerned with these disasters, the Government appointed a committee in 1865 to formulate a scheme to develop a system of cyclone warnings. On the recommendations of the committee, Kolkata became the first port where a storm warning system was organised in 1865. Thus the issue of storm warning messages started even before the establishment of the Department in 1875. The storm warning scheme for west coast ports (Mumbai, Karachi, Ratnagiri, Vengurla, Karwar and Kumta) came into force in 1880. In 1882, besides Kolkata, the ports at Sagar Islands, Mud Port and Diamond Harbour were also included in the list of ports getting storm warning messages. By 1886, the system of early warnings against cyclones was extended to cover all Indian ports.

Upto 1898, two different systems of storm warning signals (one for the east coast ports and another for west coast ports) were in use. As this was leading to some confusion, a uniform system of storm warning signals was introduced at all the Indian ports from 1898. Kolkata office was responsible for issuing storm warning to all the ports (including those of Burma) around the Bay of Bengal, while the west coast ports were served by the Bombay Meteorological Reporter initially and later from Shimla which was then the headquarters of the Department. After the shift of the HQ of the Department from Shimla to Pune in 1928, the storm warning work for west coast was done from Pune. From 1928 till 1945, the storm warning work was managed between the Kolkata and Pune offices for Bay of Bengal and Arabian Sea respectively.

2.2 Formation of Regional Centres

With the formation of Regional Meteorological Centres soon after the World War II, the storm warning work for the Bay ports on the east coast from

Kalingapatnam southwards was transferred to Chennai (Meenambakkam) in 1945. Similarly, the responsibility for the Arabian Sea ports was taken over by the Meteorological Office at Santacruz (Mumbai) in 1947. As the combination of the meteorological activities for aviation and marine interests in the same office had some drawbacks, these two activities were bifurcated to achieve a more efficient functioning of the storm warning service. Separate storm warning centres came to be established at Colaba (Mumbai) in 1956 and at Nungambakkam (Chennai) in 1969. The responsibility for the ports on the west coast from Karwar southwards was also transferred from Mumbai to Chennai in 1969.

2.3 Formation of CWCs

In 1969, the Government of India appointed a committee called the Cyclone Distress Mitigation committee (CDMC) for Andhra Pradesh to examine various measures to mitigate human suffering and reduce loss of life and property due to cyclonic storms. Subsequently similar committees were set up for Orissa and West Bengal. The Cyclone Distress Mitigation committees for Andhra Pradesh and Orissa recommended in 1971-72 that the India Meteorological Department should establish storm warning centres at Visakhapatnam and Bhubaneswar for issuing cyclone warnings to coastal Andhra Pradesh and coastal Orissa respectively. Consequently, a storm warning centre was set up at Visakhapatnam in 1974, and at Bhubaneswar in 1973 for catering to the needs of Andhra Pradesh and Orissa respectively.

In pursuance of the recommendation of Cyclone Review Committee, another Storm Warning Centre was established at Ahmedabad in 1988 for catering the needs of Gujarat, union territory of Diu, Daman, Dadra and Nagar Haveli.

2.4. Present organizational structure

2.4.1. Regional Specialized Meteorological Centre (RSMC) Tropical Cyclones New Delhi

Regional Meteorological Centre (RMC) New Delhi has been redesignated as Regional Specialized Meteorological Centre (RSMC) Tropical Cyclones New Delhi with effect from 1st July 1988 and assigned the responsibility of issuing Tropical Weather Outlooks and Tropical Cyclone Advisories for the benefit of the countries in the WMO/ESCAP Panel region bordering the Bay of Bengal and the Arabian Sea, namely, Bangladesh, Maldives, Myanmar, Oman, Pakistan, Sri Lanka and Thailand.

2.4.2. Cyclone Warning Division

As per one of the recommendations of the Cyclone Review Committee (CRC), a Cyclone Warning Directorate co-located with RSMC Tropical Cyclones New Delhi was established in 1990 in the Office of the Director General of Meteorology, New Delhi to co-ordinate the cyclone warning work in the country in totality.



2.4.3. ACWCs/CWCs

With the establishment of the additional Centres at Bhubaneswar and Visakhapatnam, the Storm Warning Centres at Kolkata, Chennai and Mumbai were named as *Area Cyclone Warning Centres (ACWC)* and the Storm Warning Centres at Visakhapatnam, Bhubaneswar and Ahmedabad as *Cyclone Warning Centres (CWC)*. CWCs Visakhapatnam, Bhubaneswar and Ahmedabad function under the control of the ACWCs-Chennai, Kolkata and Mumbai respectively. M. C. Hyderabad liaises between CWC Visakhapatnam and Andhra Pradesh Government officials; warnings issued by CWC Visakhapatnam are sent to M. C. Hyderabad also for briefing the Andhra Pradesh Government officials at the State Capital.

The present organisational structure for cyclone warnings is a three-tier one, with the ACWCs/CWCs actually performing the operational work of issuing the bulletins and warnings to the various user interests, while the cyclone warnings (Directorate) New Delhi and the Deputy Director General of Meteorology (Weather Forecasting), through Weather Central, Pune coordinates and guides the work of the ACWCs/CWCs, exercises supervision over their work and takes necessary measures for continued improvement and efficiency of the storm warnings system of the country as a whole. The ultimate responsibility for operational storm warning work for the respective areas however, rests with the ACWCs and CWCs.