

Missile Misfires

Why in News?

Recently, **India acknowledged** that "technical malfunction led to the **accidental firing of a missile"** which landed 124 km inside Pakistan's territory.

It was speculated that it was a test of one of India's top missiles, <u>BrahMos</u>, jointly developed with Russia.

What are the Provisions for Testing Missiles?

- Under the pre-notification of flight testing of ballistic missiles agreement signed in 2005, each country must provide the other an advance notification on the flight test it intends to take for any land or sea launched, suface-to-surface ballistic missile.
- Before the test, the country must issue Notice to Air Missions (NOTAM) or Navigational Warning (NAVAREA) to alert aviation pilots and seafarers, respectively.
- Also, the testing country must ensure that the launch site is not within 40 km, and the
 planned impact area is not within 75 km of either the International Boundary (IB) or the Line
 of Control (LoC).
 - The planned trajectory **should not cross the IB or the LoC** and **must maintain a horizontal distance** of at least 40 km from the border.
- The **testing country must notify the other nation "no less than three days** in advance of the commencement of a five day launch window within which it intends to undertake flight tests of any land or sea launched, surface-to-surface ballistic missile".
 - The pre-notification has to be "conveyed through the respective Foreign Offices and the High Commissions".

PYQ

In the context of Indian defence, consider the following statements: (2009)

- 1. The Shourya missile flies with a speed of more than 8 Mach.
- 2. The range of Shourya missile is more than 1600 km.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Ans: (d)

What is Notice to Air Missions (NOTAMs)?

• A NOTAM is a **notice containing information essential to personnel concerned** with flight operations but not known far enough in advance to be publicized by other means.

What is a Navigational Warning Service (WWNWS)?

- The World Wide Navigational Warning Service (WWNWS) was **established in 1977 for the promulgation of information** on worldwide hazards to navigation for international shipping.
- Navigational warnings provide early information of important incidents which may constitute
 a danger to navigation.
- Many navigational warnings are of a temporary nature, but others remain in force for several weeks and may be succeeded by Notice to Mariners (NMs).

PYQ

In the context of the Indian defence, what is 'Dhruv'? (2008)

- (a) Aircraft-carrying warship
- (b) Missile-carrying submarine
- (c) Advanced light helicopter
- (d) Intercontinental ballistic missile

Ans: (c)

What is Brahmos Missile?

- BrahMos is a joint venture between the <u>Defence Research and Development Organisation of</u>
 India (DRDO) and the NPOM of Russia.
 - BrahMos is named on the rivers Brahmaputra and Moskva.
- It is a **two-stage** (solid propellant engine in the first stage and liquid ramjet in second) missile.
- It is a multiplatform missile i.e it can be launched from land, air, and sea and multi capability missile with pinpoint accuracy that works in both day and night irrespective of the weather conditions.
- It operates on the "Fire and Forgets" principle i.e it does not require further guidance after
- Brahmos is one of the fastest cruise missile currently operationally deployed with speed of Mach
 2.8, which is nearly 3 times more than the speed of sound.

PYQ

With reference to Agni-IV Missile, which of the following statements is/are correct? (2014)

- 1. It is a surface-to-surface missile.
- 2. It is fuelled by liquid propellant only.
- 3. It can deliver one-tonne nuclear warheads about 7500 km away.

Select the correct answer using the code given below:

- (a) 1 only (b) 2 and 3 only (c) 1 and 3 only
- (d) 1, 2 and 3

Ans: (a)

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