Sea Conditions Guide

Middle East Region: Persian & Arabian Seas

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Persian Gulf & Arabian Sea

The Persian Gulf & Arabian Sea has a subtropical desert climate with very mild winters and very hot summers.

Strong NW-ly winds, known as Shamal winds, are the largest influencing phenomena in the region that can trigger dust storms. Winter is the wettest part of the year with showers and thunderstorms affecting more northern areas more than the south. Further south, the NW-ly winds can bring very humid air making the heat quite oppressive in the summer.

The Arabian Sea has a monsoon climate with north-easterly (NE-ly) winds blowing across the basin during the winter months (November to March) backing to south-westerly (SW-ly) during the summer months (April to November).

How services and forecasts from DTN offshore can help

Early warning of stronger conditions is available with our proprietary Marine Forecasting System model, which is edited by forecasters to improve your forecast data. Synoptic situation can describe the risk of dust/sand storms as well as thunderstorms/showers for your location, and tropical cyclone warning bulletins can warn of storms that may affect your location with tracks and distances specific to your location.

Thunder & Dust Storms

During mainly the winter months, low pressure systems from the eastern Mediterranean can track through the northern states of Syria and Iraq towards the Zagros Mountains of Turkey, Iraq and Iran.

These systems bring colder air to the region and can cause heavy showers and thunderstorms especially through northern and central areas of the Persian Gulf. Ahead of these cold fronts, dust and sand can be entrained into the stronger winds and trigger dust storms.

The key impact on offshore operations

Dust and sand entrained in the strong winds reduce visibilities and can cause damage from scouring as well as impact the health and safety of personnel. Thunderstorms and showers can produce strong winds, gusts, elevated seas and lightning, all of which can disrupt offshore operations.

Shamal Winds

These are strong NW-ly winds that flow over Iraq and the Gulf states and funnel through the Persian Gulf. They are enhanced by the Zagros Mountains of Turkey, Iraq and Iran to the northeast and the high plains of Saudi Arabia to the southwest. These winds can occur at any time throughout the year but are generally strongest in the summer months of June and July.

Summer & winter shamal

The synoptic situation during this time consists of the monsoonal low pressure over NW India and Pakistan and the stationary high pressure to the west over the eastern Mediterranean, which creates a steep pressure gradient through the Gulf. Due to the relatively fixed positions of these systems, Shamal winds in the summer can last for many days with only brief pauses. Entrained in these strong winds is usually dust and sand carried from the Tigris-Euphrates basin of Syria and Iraq and these can reduce visibilities. Winter Shamal winds are created in much the same way but these events only usually occur for 3-5 days before subsiding as the systems are much more transient than in the summer.

The key impact on offshore operations

The strong NW-ly Shamal winds can increase to Bf 7, sometimes touching Bf 8 in very enhanced flow especially in central areas of the Persian Gulf, which produce rough sea conditions.

Monsoon & Tropical Storms

The SW-ly monsoon over the Arabian Sea brings heavy showers and thunderstorms with a much stronger flow and fetch producing higher waves through the entire region for prolonged periods of time causing a hazard to shipping routes.

During the winter months, the NE-ly monsoon winds are generally weaker and conditions remain calmer through much of the region.

Tropical storms

Tropical cyclones are possible in this basin but are rarer than in other areas of the world. These usually develop towards the beginning or end of the SW-ly monsoon when thunderstorms are active but the overall flow is not as pronounced so development is possible.

The key impact on offshore operations

Tropical cyclones are a possibility in the Arabian Sea, these can produce heavy, continuous rainfall, damaging winds, lightning and high seas that disrupt offshore operations.