

# NAVY NEWS

ABC Certified

November 2023

## PN - PLA (N) JOINT EXERCISE SEAGUARDIAN **2023**



# PRESIDENT OF PAKISTAN HONOURS NAVAL CHIEF WITH NISHAN-E-IMTIAZ (MILITARY)



President of Pakistan Dr Arif Alvi has conferred the insignia of Nishan-e-Imtiaz (Military) upon Chief of the Naval Staff, Admiral Naveed Ashraf during an impressive ceremony held at Aiwan-e-Sadr Islamabad.

The Military Award has been conferred upon the Naval Chief in recognition of his exceptionally commendable performance and selfless devotion to the maritime defence of the country. Admiral Naveed Ashraf in all his professional pursuits has exhibited dynamic leadership, impeccable moral strength, exemplary professional competence and remarkable sense of commitment while serving Pakistan Navy. During his outstanding service the Admiral has profoundly contributed in the development of Pakistan Navy.

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# NAVAL CHIEF ADDRESSES 25<sup>TH</sup> NATIONAL SECURITY WORKSHOP PARTICIPANTS

“MARITIME SECTOR HOLDS ENORMOUS  
POTENTIAL FOR PAKISTAN’S ECONOMY”  
Chief of the Naval Staff

Chief of the Naval Staff Admiral Naveed Ashraf said that Pakistan’s maritime zones have large deposits of natural resources which can enormously contribute to strengthen Pakistan’s economy. He addressed the participants of 25<sup>th</sup> National Security Workshop at Naval Headquarters, Islamabad.

Chief of the Naval Staff said that Pakistan Navy besides providing

impregnable defence of Pakistan’s maritime frontiers also contributes towards development of maritime sector. However, in order to exploit full maritime potential of Pakistan, private sector needs to invest in maritime related industries and can enormously benefit from it. Naval Chief highlighted that we need to increase Pakistan’s flag carriers particularly in the private sector, which will save significant

foreign exchange presently being paid to foreign shipping companies as freight charges. While highlighting the challenge of marine pollution, he said that it is a clear and present danger for Pakistan and needs to be addressed on urgent basis.

Earlier, the participants were briefed on Pakistan Navy challenges and responses





including PN contributions towards development of Maritime Sector.

The workshop participants led by Director General Institute of

Strategic Studies & Research Analysis (ISSRA) Major General Raza Aizad, comprised of parliamentarians, politicians, bureaucrats, armed forces officers as well as representatives

from academia and business community. The participants highly appreciated PN efforts and proposed valuable suggestions to the Naval Chief. ❌❌

# PN - PLA (N) JOINT EXERCISE

# SEA GUARDIAN **2023**



**O**pening Ceremony of Pakistan Navy and PLA (Navy) bilateral exercise Sea Guardian-2023 held at Pakistan Navy Dockyard, Karachi. Commander Qingdao Naval Base, Rear Admiral Liang Yang graced the occasion as Guest of Honour. Commander Pakistan Fleet, Vice Admiral Muhammad Faisal Abbasi was also present at the occasion.

In his opening remarks, Commander Pakistan Fleet welcomed the officers and

personnel of PLA (N) Flotilla, underscoring the close and strategic ties between the two countries in general and Navies in particular. The admiral emphasized on the importance of immaculate & sound planning during the exercise and hoped that this exercise will further enhance strategic cooperation and interoperability between the two navies. Commander Qingdao Naval Base, Rear Admiral Liang Yang thanked Pakistan Navy for hosting Exercise Sea Guardian and hoped to





EXERCISE SEA GUARDIAN-2023 WAS  
AIMED TO SHARE PROFESSIONAL  
EXPERIENCES ON CONTEMPORARY  
TRADITIONAL AND NON-  
TRADITIONAL THREATS IN INDIAN  
OCEAN REGION

have a mutually benefiting and professionally rewarding experience from the joint exercise.

In this regard, a joint press conference was also held to brief the audience about objectives, contours and conduct of the exercise. Commodore Asim Sohail Malik highlighted that exercise is

divided into two phases i.e Harbour and Sea phase. During harbour activities both navies will share their experiences on contemporary maritime security threats and challenges through various workshops, seminars and table top discussions. While, the Sea Phase to be conducted in North Arabian Sea to encompass advance level

naval operations i.e. maritime security Ops, tactical maneuvers, various warfare related exercises and search & rescue operations to deal with variety of threats at sea.

Chinese flotilla comprising of naval ships, Submarine and Submarine Rescue Ship along with PLA







(Navy) Marines Corps Detachment participated in the exercise. During exercise, frontline destroyers/ frigates along with Air and other assets and Marines/ Special Forces from Pakistan Navy and PLA (Navy) also carried out advance level joint drills and naval maneuvers in North Arabian Sea besides professional and social activities during the harbour phase.

The aim of Exercise Sea Guardian-2023 is to share professional experiences on contemporary traditional and non-traditional threats in Indian Ocean Region as well as to enhance bilateral cooperation and interoperability between the two Navies. First bilateral Exercise Sea Guardian with People's Liberation Army (Navy) was held in 2014 and has regularly been conducted each

year alternately in Pakistan and China.

The exercise is a reflection of strong bilateral military cooperation between Pakistan Navy and Chinese Navy and will foster greater bilateral cooperation between the two navies. The ceremony was attended by a large number of military officials from both the navies. ❖❖







# 16<sup>TH</sup> CNS AMATEUR GOLF CUP 2023



## GOLF CUP 2023





# NAVAL CHIEF VISITS SAUDI ARABIA

**C**hief of the Naval Staff Admiral Naveed Ashraf called-on top Leadership of Royal Saudi Armed Forces during an official visit to Saudi Arabia.

During meetings with Chief of the General Staff of Saudi Armed Forces, Gen Fayyadh bin Hamed Al-Ruwaili at Ministry of Defence and Commander Royal Saudi Naval Forces Vice Admiral Fahd Bin Abdullah al-Ghofaily at Royal Saudi Naval Forces (RSNF) Headquarters matters of bilateral naval collaboration and regional maritime security were discussed. The Naval Chief underscored the contribution of Pakistan Navy towards regional maritime peace and stability through its initiative of Regional Maritime Security Patrols (RMSP)



and participation in Combined Maritime Force. The Commander RSNF appreciated Pakistan Navy role in support of collaborative maritime security in the region and acknowledged significance of strong bilateral defence collaboration.

Earlier upon arrival at RSNF Headquarters, Chief of the Naval

**EXPANDING DEFENCE TIES BETWEEN THE TWO COUNTRIES, MATTERS OF BILATERAL NAVAL COLLABORATION AND REGIONAL MARITIME SECURITY WERE DISCUSSED**

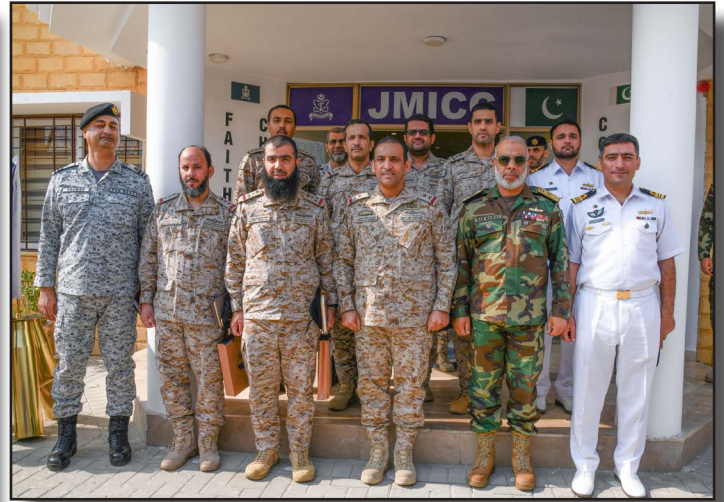
Staff was presented Guard of Honour and given a briefing on training setups and ongoing operations of Royal Saudi Naval Forces.

Pakistan and Saudi Arabia historically enjoy brotherly relations and the visit of Naval Chief will further augment and expand defence ties between the two countries in general and navies in particular. ❖ ❖



# RSNF EASTERN FLEET COMMANDER VISITS PAKISTAN

**R**SNF Eastern Fleet Commander Rear Admiral H.E Sajer Rafeed M Al Enazi along with Staff Officers visited Karachi. During the visit Commander RSNF called on COMPAK at FHQ, MD KS & EW, FOST, COMKAR and a visit to JMICC along with call on COMCOAST. Delegation also visited PNS ASLAT. ❌❌





## PRIZES WERE AWARDED TO WINNERS OF PN COMMUNICATION, IT AND EW PROFICIENCY COMPETITION 2023

# PAKISTAN NAVY COMMUNICATION, IT & EW PROFICIENCY COMPETITION

**P** prize distribution ceremony of PN Communication, IT and Electronic Warfare Proficiency Competition 2023 was held at PNS JAUHAR Auditorium. Admiral Naveed Ashraf, Chief of the Naval Staff graced the occasion as Chief guest. The welcome address was given by DG C41 Rear Admiral Muhammad Faisal Amin.

On the occasion, prizes were awarded to winners of PN communication, IT and EW Proficiency Competition 2023 in individual, team and overall.

In IT Proficiency Competition COMCEP/COMNOR was runner-up while COMPAK got the winner's title. COMDESRON-18 was the

runner-up, COMDESRON-25 was the winner of EW Proficiency Competition. Lastly, in Communication Proficiency Competition COMDESRON-25 was the runner-up while COMAUXMIN-9/COMAUXRON-21 won the title. ☒☒







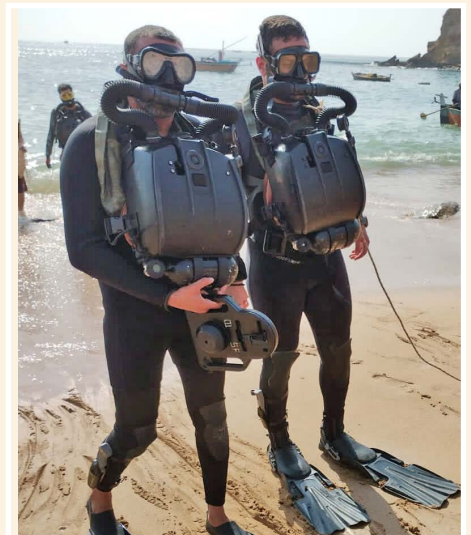
# PAKISTAN NAVY AND QATAR NAVY SPECIAL FORCES BILATERAL EXERCISE **MUHARIB-AL-BAHR**



The 6<sup>th</sup> edition of bilateral exercise MUHARIB-AL-BAHR between Pakistan Navy Special Service Group (SSG(N)) and Qatari Naval Special Forces (QNSF) was conducted at Karachi. The exercise is conducted annually alternatively at Pakistan and Qatar.

The two weeks long exercise comprised of various operations such as Frogman Ops, coordinated Maritime Interdiction Operations, Ship Visit- Board-Search & Seizure (SVBSS) Procedures, Sniper Weapon Firing, Day & Night Counter Terrorism Training, Close Quarter Combat (CQC) at Ship in a Box Mockup and Fast Rope Insertion Extraction Techniques (FRIETS). The exercise was aimed at strengthening military relationship and improving coordination and interoperability between Pakistan Navy Special Service Group (SSG (N)) and Qatari Naval Special Forces (QNSF).

The exercise proved highly beneficial to enhance professional acumen of SOFs of both navies with testimony to long lasting and historic brotherly relations between the two countries. ☒☒

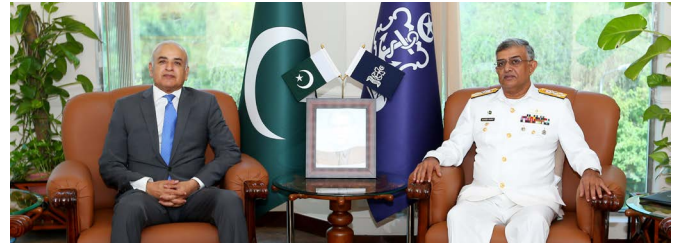


# DIGNITARIES/ DELEGATIONS VISIT NHQ

The visiting dignitaries appreciated Pakistan Navy's efforts and initiatives in support of collaborative maritime security and stability in the region. Matters of bilateral collaborations and regional security milieu were discussed



**Caretaker Minister for Maritime Affairs** Mr Shahid Ashraf Tarar



**General Sahir Shamshad Mirza**  
**Chairman Joint Chiefs of Staff Committee**



**H.E Mr Nawaf Bin Saeed Ahmed Al Malkiy**  
**Ambassador of Saudi Arabia to Pakistan**



**H.E Mr Mohammed Bello Abiyoe**  
**High Commissioner of Nigeria**





H.E Mr. Adam Mulawarman Tugio  
**Ambassador of Indonesia to Pakistan**



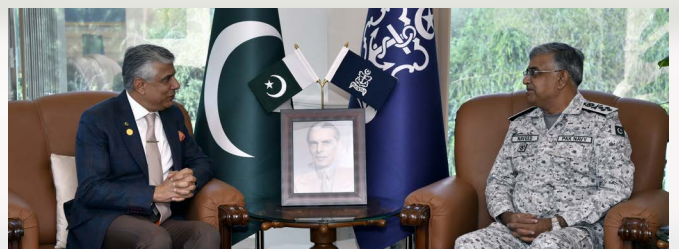
Rear Admiral Sajer Bin Rafeed Al-Enazi  
**Eastern Fleet Commander Royal Saudi Naval Forces**



H.E Dr Reza Amiri Moghadam  
**Ambassador of Iran to Pakistan**



Lt Gen (Retd) Hamood Uz Zaman Khan,  
**Secretary Defence**





# TURKISH FLEET COMMANDER VISITS PAKISTAN

**P**akistan and Turkiye have deep routed and historical relations. The two countries share a rich history of mutual cooperation and inspiration which can be traced back pre-partition. The stretch of cooperation caps others domains including economic and military fields. Pakistan Navy and Turkish Navy Multi – National Exercises; that includes AMAN Exercise conducted by Pakistan Navy and MAVI BALINA, TURGUTRIES Exercise conducted by Turkish Navy alongwith port calls by ships of both countries and high level dignitaries visits.

Turkish Fleet Commander Vice Admiral Kadir Yaldiz visited Pakistan. During his visit he called-on high ranking officials of Pakistan Navy, including Commander Coast

Vice Admiral Raja Rab Nawaz, Commander Pakistan Fleet Vice Admiral Muhammad Faisal Abbasi, Commander Karachi Rear Admiral M Saleem, Commander Logistics Rear Admiral Muhammad Sohail Arshad and MD KS&EW Rear Admiral Salman Ilyas. The discussions held during these meetings explored avenues for further collaboration in maritime domain. The Senior Turkish Navy official expressed commitment to further strengthen naval cooperation between two brotherly countries. Turkish Navy Fleet Commander also visited various PN HQs/ Institutions including Pakistan Naval Academy, Joint Maritime Information and Coordination Center and PN Ship TUGHRIL. He also chaired Pakistan – Navy Turkish Navy Seminar held

at Karachi during which future collaboration between both the Navies was discussed in various domains.

The close relationship between Turkiye and Pakistan has been consistently reinforced through various diplomatic, economic and defense initiatives. This visit represents a stronger partnership between the two nations which share common interests and values.

Visit of Turkish Fleet Commander reaffirms Turkish Navy's dedication towards working together in the maritime domain and further deepen the strategic partnership between Pakistan Navy and Turkish Navy. ❖❖





Pakistan Navy – Turkish Navy Seminar 2023 on Operational Matters of Mutual Interest



Turkish Navy delegation group photos during visit to Pakistan Navy Dockyard and Naval Stores Sub Depot



# CONFERMENT OF HONORARY AWARDS TO ADMIRAL MUHAMMAD AMJAD KHAN NIAZI

Pakistan Navy's former Chief of the Naval Staff, Admiral Muhammad Amjad Khan Niazi has been conferred with "King Abdul Aziz Medal" from Commander Western Region of Saudi Armed Forces in Makkah Saudi Arabia and "Honorary Award of Malaysian Armed Forces Order for Valour (First Degree) - Gallant Commander of Malaysian Armed Forces (Panglima Gagah Angkatan

Tentera)". The award was conferred by the Malaysian King Abdullah of Pahang at an impressive investiture ceremony held at Kuala Lumpur, Malaysia. The Award has been bestowed in recognition of untiring efforts and dedication of Admiral Muhammad Amjad Khan Niazi to strengthen bilateral relationship and mutual cooperation between the Armed Forces of Pakistan and Malaysia. ❖❖



**HONORARY AWARD OF MALAYSIAN ARMED FORCES ORDER FOR VALOUR BY KING OF MALAYSIA**



**KING ABDUL AZIZ MEDAL FROM COMMANDER WESTERN REGION OF SAUDI ARMED FORCES**

# NSWC PARTICIPANTS VISIT PN INSTALLATIONS/ PLATFORMS

**NSWC-24** participants visited onboard PN ships TAIMUR, TUGHRIL and ZULFIQUAR on 1 Oct 23 for a day sea trip. 225 participants/ faculty members, including officers from friendly countries and female participants boarded PN ships.

The delegation headed by Maj Gen Muhammad Aamer Najam was warmly welcomed onboard PN ships by COMDESRON-25 and respective Commanding Officers. Upon arrival of delegation onboard



ship, ships left harbor for a day sea trip, wherein multiple naval exercises were planned. During leave harbor, participants were briefed about preparations and measures taken onboard ship prior leaving harbor. Participants were

also briefed about equipment and systems fitted onboard ship.

Commanding Officer interacted with participants and briefed them about operational readiness of ship and PN War fighting capabilities.





Delegation was also briefed on significant shift in PN Combat readiness after acquisition of four x Type 054 A/P ships. Type 054 A/P ships are fitted with state of the art weapons & sensors having capability to undertake naval operations under multi-threat environment.

During the sea trip, Commander Pakistan Fleet Vice Admiral Muhammad Faisal Abbasi also

visited PN ships and interacted with the delegation. Speaking on the occasion, COMPAK underscored PN efforts in ensuring seaward defense of Pakistan and contribution of Pakistan Navy towards regional maritime peace and stability.

Commander Pakistan Fleet also emphasized on geo-strategic and geo-economic significance that necessitate a potent Naval Force



## **PARTICIPANTS BRIEFED ON OPERATIONAL READINESS OF SHIPS, PN WAR FIGHTING CAPABILITIES & WITNESSED VARIOUS NAVAL EXERCISES AT SEA**

to safeguard maritime frontiers of country and induction of modern naval ships have significantly strengthen the defense capabilities of Pakistan. The Admiral also enlightened the delegation on PN Fleet operations wherein employment of PN assets towards maritime defense/ security challenges and how PN Fleet operates were also discussed.

Later, the delegation witnessed naval exercises and also underwent orientation visit of NSWC-24 participants highly appreciated operational capabilities and hospitality of ship's crew. ☒☒



# 4<sup>th</sup> PN INTERNATIONAL NAUTICAL COMPETITION 2023

**P**akistan Naval Academy wins the fourth PN International Nautical Competition (INC) 2023. Closing ceremony of INC 2023 was held at PNS RAHBAR, Manora. Commander Karachi, Rear Admiral Muhammad Saleem was the Chief guest on the occasion.

Commander Karachi gave away prizes to the winners. Expressing satisfaction over the immaculate conduct of the event; he congratulated the winning teams and medal winners. He further urged the participants to





year for even higher standards of professional excellence. Earlier, Commandant Pakistan Naval Academy, Commodore Muhammad Khalid gave an overview of the championship.

The event was contested in the facets of sailing, swimming, lifesaving skills and seamanship. Pakistan Naval Academy clinched

the trophy with 02 Gold medals while team from Islamic Republic of Iran Imam Khomeini Naval university was declared runner's up. The competition witnessed participation from Azerbaijan, China, Indonesia, Italy, Kingdom of Saudi Arabia, Islamic Republic of Iran, Oman, Turkiye and host team of Pakistan Naval Academy (PNA).

INC aims to promote water sports in Pakistan and encourages competition among friendly navies in the field of sports.

The ceremony was also attended by senior naval officers, foreign service attachés and civilian dignitaries in large number. ☒☒





# 5<sup>TH</sup> PN INDUSTRIAL SEMINAR & EXHIBITION

**P**akistan Navy Industrial seminar was held at Bahria Auditorium, Karachi. Chief of the Naval Staff, Admiral Naveed Ashraf graced the occasion as Chief guest.

While addressing the participants of seminar, Naval Chief lauded the valuable participation of academia and representatives of various industries from private sector. He emphasised that technology

is continuously evolving and the armed forces also need to keep pace with the evolving technology. This necessitates close cooperation of the defence sector with local industry and educational institutions. This industrial seminar will provide significant opportunity for local industries to showcase their potential to support Pakistan Navy which is a technology intensive armed force of Pakistan.

Appreciating the response of private sector in a technologically challenging environment, Chief of the Naval Staff said that Pakistan Navy and local industries will together attain our aim of self-reliance. Speakers from different organizations also highlighted the importance of indigenization and self-reliance.

The seminar was attended by a large number of Naval officers, dignitaries, representatives of local industry and prominent members of academia. ❌❌





# PN TECHNICAL OFFICERS SEMINAR

**T**echnical Seminar is conducted biennially in Pakistan Navy, objective of the seminar is to review the technical aspects and operational requirements of Naval platforms, their up keeping strategies, future maintenance plans and training requirements of technical cadre to meet the challenges of emerging technologies in the Naval warfare. This year, Technical seminar 2023

was chaired by Chief of the Naval Staff, Admiral Naveed Ashraf graced the occasion as Chief guest. Besides a large number of serving technical officers, retired officers from technical branches and officers from other organizations also attended the seminar.

While addressing the audience, Chief of the Naval Staff Admiral

Admiral Naveed Ashraf appreciated the panel members for their strenuous efforts, research and valuable knowledge shared with the seminar members. He also applauded the technical officers for their meritorious efforts in aptly meeting the needs of PN fleet and shore installment. ❌❌







# NAVY THROUGH HISTORY

## FIRST-EVER VISIT BY A PRESIDENT OF PAKISTAN TO GWADAR



Field Marshal Ayub Khan on the bridge of PNS TIPPU SULTAN, en-route to Gwadar

President onboard a Pakistan Navy LCM, proceeding to land on Gwadar East Bay after disembarking from PNS TIPPU SULTAN



The President accompanied by high officials proceeded to address locals at Gwadar

## THE NAVY IN CAMOUFLAGE DRESS



I could have sworn one of those bushes saluted you!



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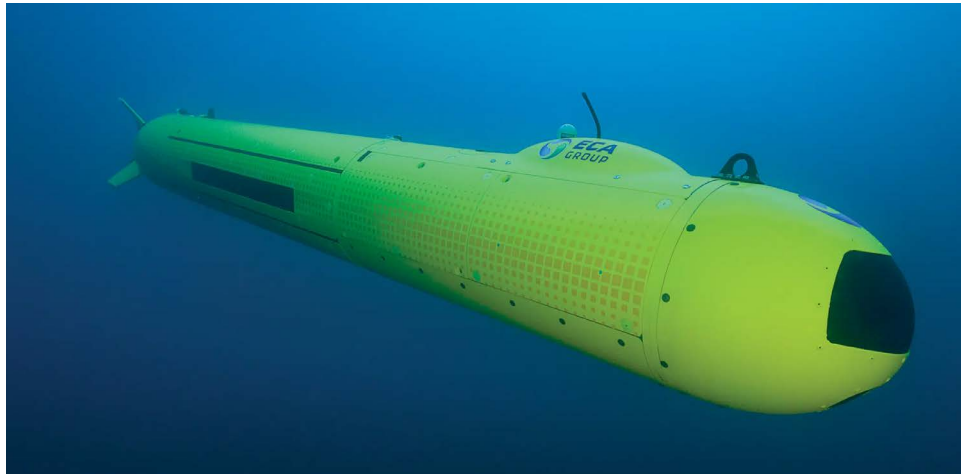
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# NAVAL LENS INTERNATIONAL FEATURED NEWS



## SIMULATED SONAR DATA FOR AUTOMATIC TARGET RECOGNITION



large-scale acquisition of simulated sonar data, produced by Mission Systems, which is based on computer models of how the sea floor appears to high-resolution imaging

sonar – an approach that is far quicker and more economical than sourcing actual sonar data. The collaboration between Exail and Mission Systems aims to expedite the deployment of AI-based Automatic Target Recognition capabilities by creating hybrid learning

databases of real and simulated sonar data. Mission Systems' sonar simulation, and automatic labelling of arbitrary 3-D objects, will be used by Exail's data scientists to develop more robust and higher performance neural networks for automatic target classification.

## FIN STABILIZING SYSTEM

WHICH ENABLES SHIPS TO OPERATE SAFELY  
IN ALL WEATHER AND SEA CONDITIONS



The Fin Stabilizing System provides support for helicopter operations as well as weapon stabilisation during firing and for supply, material, and personnel transfer at sea. Its design is resistant to challenging sea conditions and has automatic and adaptive operating features. The design and production phases of the Fin Stabilizing System have been completed, and the system will be integrated aboard two Corvettes being constructed under an export project carried out by STM.

**Courtesy:**

[www.navalnews.com](http://www.navalnews.com)  
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# MARSEW 2023-NAVIGATING ECONOMIC PROSPERITY



Maritime Transport



Coastal Tourism



Ship Building & Repair



Fisheries





**P**akistan is blessed with over 1000 km of coastline. Maritime commerce serves as the fundamental pillar of our economic structure. Country's reliance on maritime trade is a pivotal component of its economic framework. Dominant part of Pakistan's trade, in excess of 90 percent by volume, is conducted via maritime routes. However, Pakistani flag carriers transport only around 16 percent of the country's seaborne trade. This necessitates actively enhancing country's maritime infrastructure and connectivity.

Pakistan's National Security Policy (2022-2026) has taken a shift from geo-politics to geo-economics. Human security remains central theme of this change. The transition reflects recognition that economic stability and development alongwith human security are critical components of national security apart from other traditional security concerns.

The maritime interests of Pakistan encompass but are not limited to protection of sea commerce in times of peace and war, preservation and protection of maritime zones, combating crimes and illicit activities at sea, socio economic uplift especially in coastal regions safety and security of international sea lanes, environmental protection etc. The country's geographical location and on-going development of Gwadar port under CPEC has added to the national maritime interests consequently increasing tasks of the Navy. PN is the principal maritime military arm that protects and preserves all these interests and furthermore facilitates advancing

maritime interests overseas as, when and where needed. All in all, PN plays a central role in ensuring security of Gwadar port under CPEC, protecting and preserving national maritime interests whilst contributing to regional stability in the broader maritime environment of the Indian Ocean region. Oceans have gained significance in this century, often termed as "century of oceans". PN has been making an effort to generate appropriate understanding of this fact at the national level.

Accordingly, apart from holding a large-scale multinational exercise, AMAN every two years, Pakistan Navy has simultaneously launched several other initiatives to raise levels of awareness on maritime and ocean related matters across Pakistan including Maritime Security Workshop (MARSEW) at PN War College. Such engagement endeavours are aimed at increasing consciousness across the spectrum of country's academia and intelligentsia on the subjects of maritime security and blue economy. Alongside these efforts bring home the significance of national maritime sector and that of seas for sustaining human life on earth.

The annual conduct of academic cum informational initiative of MARSEW brings together a cross-section of Pakistan's literati who assemble to acquire insight into the vast maritime world. The participants are schooled on subjects like, maritime security, sea power, marine safety, blue economy, and other important geopolitical events unfolding in the Oceans. The nine day tour cum

educational activities at Pakistan Navy's premier professional learning institute, Pakistan Navy War College clubs military officers, lawmakers, bureaucrats, business owners, academics, and media representatives to interact with top experts and witness first hand on-site activities of various field commands in PN. Sixth edition of MARSEW is being held from December 6 through 14.

MARSEW activities are split into two phases. During first phase, participants engage in informed intellectual discussions and are provided first-hand knowledge on issues by a select panel of accomplished speakers. Participants are then taken to Islamabad and Karachi to acquaint them with Command and Control organization and mandate of various field commands. Briefings are held in Coastal and Creek Areas of Pakistan as well as at Gwadar port. This comes alongside visit to different installations at Karachi, Makran coast and other important sites. MARSEW is a laudable endeavour by PN that aims to facilitate suitable propagation of maritime knowledge and foster collaboration among diverse stakeholders of Pakistani society and intelligentsia. A strategic policy shift, sustainable development of maritime sector and marine resources could translate into a boon for country's economy and support socio-economic uplift over and above human security. ⊗ ⊗

***Dr. Marriyam Siddique***

# MODERN TRENDS IN CONVENTIONAL SUBMARINE DESIGN

**(Heavier in tonnage, Larger in Size, Greater in Firepower & Wide Array of Operational Roles)**

In historical context, the 'tonnage and size' of submarines passed through an interesting evolutionary cycle. Later half of World War II saw an abrupt increase in the tonnage and size of submarines. This upward trend continued until the early 1960s. However, by the late 1950s,


the use of nuclear propulsion in submarine technology proved to be one of the most influential milestones in submarine design history. Apart from offering new roles and employment options, nuclear-propelled submarines have deeply curtailed the growth of conventional submarine design in terms of tonnage and size. This

curtailment also snatched away the role for 'across-the-seas' or 'open ocean' operations from conventional submarines.

The blue-water navies gradually shifted their weights toward nuclear submarines. The USA, one of the leading submarine manufacturing countries, ceased to build conventional submarines after the 1960s. Similarly, after achieving success in nuclear-propelled submarines, the UK drastically reduced its conventional submarine production, with the exception of two classes in the last 60 years. The Soviet Union/ Russia also brought their conventional submarine manufacturing production to a minimum level. France also gradually lost interest in building conventional submarines



18 Lt Cdr Raheel Awais PN



for its navy, however its production became limited to exports only.

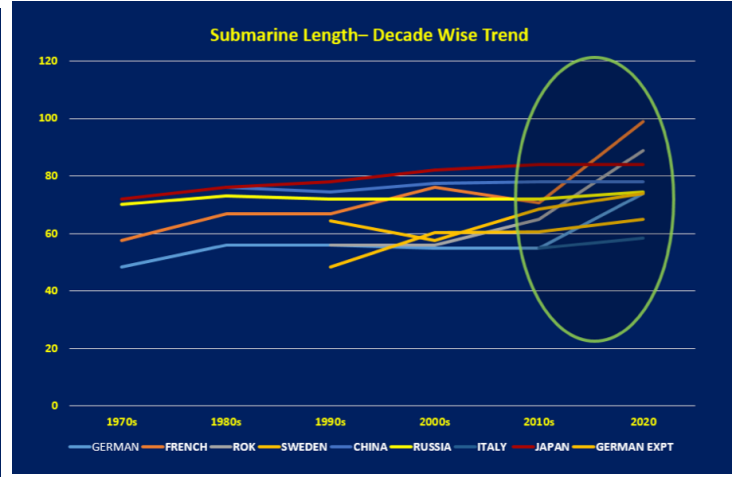
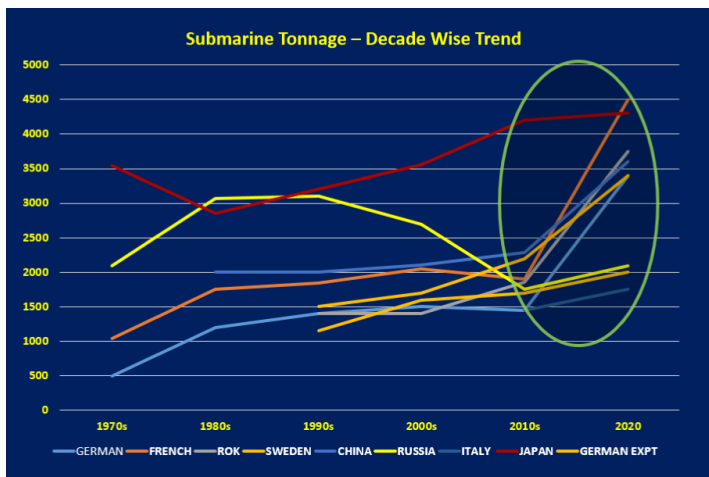
Consequently, Germany, France, Sweden, Spain, Italy, and Japan became the leading conventional submarine manufacturers. However, the upward trend in tonnage and size nearly stopped. Both the manufacturers and buyers focused on small to medium-sized conventional submarines, which were aimed at operations in the littoral. Since the 1970s, conventional submarines have generally been considered smaller or medium platforms with modest sensors and weapon payloads and limited underwater endurance. However, analysis of modern conventional submarine designs reveals an interesting phenomenon.

Undermentioned graphical data, while presenting the decade-wise trend of conventional submarine tonnage and length, help us identify this phenomenon.

There is a major deviation in conventional submarine tonnage and size from historical patterns. After hovering as 'small-medium' platform for 40–50 years, conventional submarines are now becoming 'large' size platforms. Almost all ongoing conventional submarine projects in the world tell us that these submarines will

be much heavier in tonnage and larger in size. Following are a few highlights from recent or ongoing projects:

- The ongoing German-Norwegian joint venture project for Type 212CD (Common Design) will have much heavier and larger submarines than their predecessors, i.e., Type 212A class



submarines. New submarines will be 65% heavier in size (from 1500 tons to 2500 tons), 30% larger in length (55 m to 73 m), and almost 50% wider in width (6.8 m to 10 m) than Type 212As.

- The new Swedish A26 Oceanic (Extended Range) variant will be much heavier and larger than legacy Gotland Class and A26 class submarines. The tonnage of this future submarine will be 100% greater (from 1500 tons to 3000 tons) than its predecessors. Similarly, the length of the submarine will be increased by 60% (from 60 m to 80 m).

- Future Israeli Dakar Class submarines (which are undergoing trials) will also be 40% larger in tonnage (from 2400 tons to 3400 tons) and 5% larger (from 68 m to 74 m) in length than Dolphin II class submarines.

- The French Barracuda (conventional) class submarine, which has been offered for export to multiple customers, will also witness the biggest ever increase in terms of tonnage and size compared to its previous exports (Scorpene). Barracuda (conventional) is more

than twice the tonnage (from 1600 tons to 4500 tons) and 30% larger (60 m to 99 m) in length compared to the Scorpene Class.

- The Chinese leading conventional submarine class, Type-039, has been gradually increasing tonnage and length with different upgraded versions. Modern Type-039C class submarines are 50% heavier (from 2100 tons to 3600 tons) and 5% larger than the Type-039 baseline design.

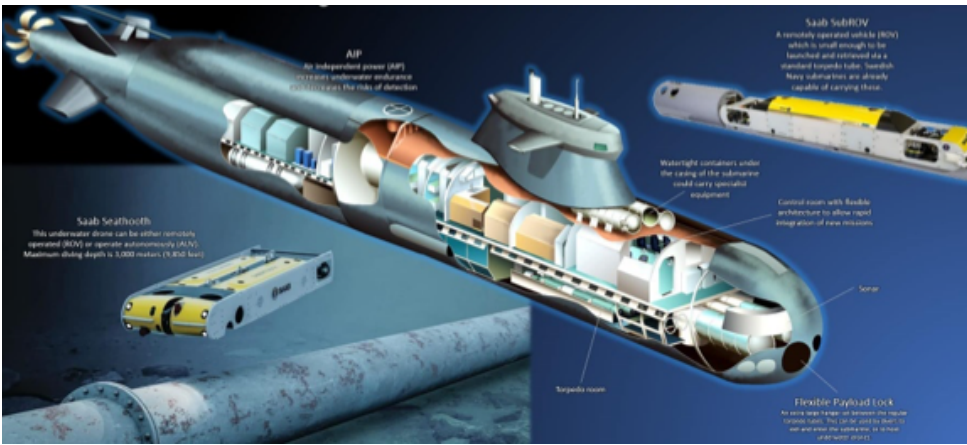
- The latest Japanese Taigei Class submarines also experienced around 8% increase in tonnage (from 4200 tons to 4500 tons) compared to Soryu Class submarines.

These examples clearly reflect that there is an upward trend in the tonnage and size of modern conventional submarines. It is very important to highlight that navies, which primarily operate their submarines in shallow waters or littorals, are also embracing this upward trend. Especially Baltic Navies (Germany, Sweden, and Norway) are not hesitant to increase the tonnage and size of submarines, despite the fact that the Baltic Sea is Constrained and Shallow Water

(CSW) sea. So why are conventional submarines getting heavier and larger? And how are designers addressing the requirement of shallow-water operating capability of these modern conventional submarines?

In the last 15 years, several technological breakthroughs have allowed navies to adopt larger conventional submarine designs. Few technological advancements are considered important enough to be mentioned here:

- Modern submarine design innovations are offering enhanced Constrained and Shallow Water (CSW) operating capability. In this regard, the introduction of X-rudder technology is one of the major breakthroughs. Compared to perpendicular rudders, X-rudder offers higher efficiency. X rudder is more reliable against stern plane failures, which is a major emergency in diving conditions and can be a major challenge in shallow waters. Moreover, the X rudder caters the stern "dipping" phenomenon during course changes, hence improving the stability of the submarine, which is critical in CSW. The X-rudder also reduces the generated noise.



- Artificial Intelligence (AI) is also revolutionizing submarine trim and depth controls. AI-enabled control features allow crew to operate submarine in CSW with more confidence and accuracy. Due to automatic steering, depth, and weight compensation, modern submarines can now even operate very close to the seabed with negligible human interference.
- Recent advancements in submarine's sensors and weapon payloads also allowed submarine designers to increase the tonnage and size. Due to the better adaptability and long ranges of modern sonars and torpedoes, submarine would not need to go into much shallower water by itself. Similarly, long-range torpedoes, which are designed to operate and engage targets in shallow waters, are giving submarines enough liberty to remain deeper (within CSW areas).
- The increasing trend of submarine borne Unmanned Underwater Vehicles (UUVs) is also an important factor in the increase in submarine tonnage and size.

Using UUVs, modern conventional submarines will expand their sensors as well as weapon payloads to shallow depths without physically entering those depths themselves. Hence, the tonnage and size of submarines can be increased to address other operational and technical requirements. This liberty in greater tonnage and size has allowed conventional submarines to increase range, endurance, and firepower. It has also allowed navies to equip conventional submarines with a variety of payloads and personnel. Air Independent Propulsion (AIP) is now considered part and parcel of most submarine projects. Emerging trends for conventional submarines will manifest in the following fields:

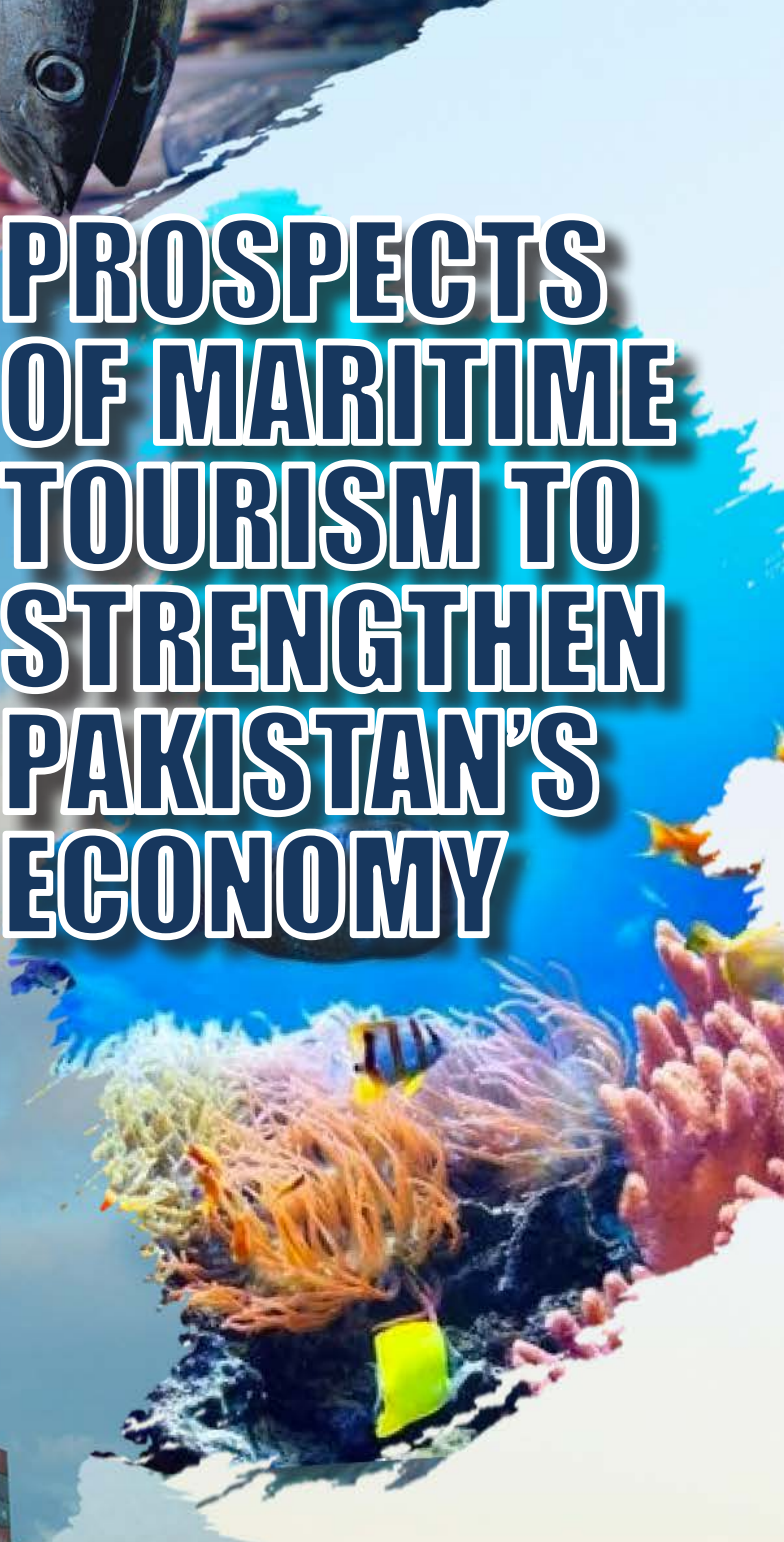
- In the near future, conventional submarines will be undertaking new roles. Heavier and larger submarines will carry out Seabed Operations more often. Similarly, submarine-borne UUVs will act as force multipliers for conventional submarines. Now submarines will access much shallower areas which was not possible in the past.

- Conventional submarines are getting equipped with far greater firepower, especially with land-attack missiles. In the near future, Precision Strike operations will be led by conventional submarines, especially for navies that do not have nuclear submarines. In this regard, Vertical Launching System (VLS) onboard South Korean KS-III class and Israeli Dakar class submarines are ongoing projects. Saab (Sweden) dished out a design variant of the A-26 class submarine with a VLS system.

- Apart from AIPs, UUVs and weapons, modern conventional submarine designs are offering dedicated facilities for special forces commandoes for SOF Operations. Dedicated facilities for special forces include accommodation, specialized escape trunks, armory and swimmer delivery vehicles etc. Hence, SOF insertion role by conventional submarines will be permanently available for Naval Operational Commanders.

The advancement in technology has enabled conventional submarine designers to handle the challenge of CSWs. The liberty of higher tonnage and size is being utilized to equip conventional submarines with additional payloads and roles. In the upcoming years, naval warfare will witness larger conventional submarine platforms with longer range and endurance, greater firepower, and a greater ability to influence warfare on land. ☒☒

# PROSPECTS OF MARITIME TOURISM TO STRENGTHEN PAKISTAN'S ECONOMY



*Cdre (Retd) Dr. Anjum Sarfraz*



The tourism industry of Pakistan, in 2022 earned USD 2.5 billion, over 300,000 jobs were created and contribution to GDP was 5%. By 2026 it is estimated that earnings will rise up to USD 4 billion, jobs increased to 500,000, and contribution to GDP would exceed to 7% (PTDC-2022). Pakistan Online Visa System is now open for the citizens of 192 countries, moreover, citizens from 64 Countries are eligible for visa under Tourist Category for 30 days stay on arrival. The citizens from 103 countries are eligible to apply for Visa on arrival under Business Category. To facilitate tourism especially in Northern areas, international flights have started operating from Skardu. In the world tourism ranking Pakistan is 84, which is four steps up after Covid 19. Whereas, Maldives is 62, Sri Lanka 74 and India 54. The road & air network and security conditions have much improved. The government should endeavor to identify and develop with public-private partnership, more historic, sightseeing and religious places. Also, facilitate private tour operators to promote tourism. This industry will not only advance economy, it will also create new jobs as well as promote image of Pakistan abroad. However, main focus of the government is to improve inland tourism therefore, the economic and job creation is mainly in the land areas and marginal from the maritime tourism and inland waterways. These sectors have tremendous potential. Their promotion will not only create more economic & leisure activities along the coast, at sea and waterways but also create jobs for the locals which is a dire need.

As per "Tourism Development International, 2007", Maritime tourism is "tourists and visitors taking part in leisure activities and holiday pursuits or journeys on (or in) sea, coastal & inland water ways, their shorelines and their immediate hinterlands". Over the years, it has become one of the most important economic pillars of the advanced countries. It represents approximately 50 percent of total global tourism which includes tourism infrastructure, impact, visitation, and spending. The main component of water based is sea cruises on ferries and harbor cruises on designed vessels. It also includes activities like swimming, canoeing, wind-surfing, fishing as a sport, snorkeling, scuba diving, whale watching, seabirds watching, boating, yachting and other nautical sports etc. The manufacturing of equipment, and services necessary for this segment of tourism form part of maritime tourism. The beach-based covers, beach resorts, sun bathing, walking on the beach, kite competitions, water sports as well as the supplies and manufacturing industries associated to these activities. Inland waterways tourism, include cruises, sailing, canoeing, rowing, water sports, watching the land-based sights, visiting holiday resorts, eateries and associated manufacturing industries like boat building landing sights and infrastructure development etc. Most of the developed and developing countries have promoted inland waterway tourism especially in rivers. Pertinent examples are river Thames (London), river Rhine in Cologne & river Elbe in Hamburg, river Nile in Cairo and may other worldwide.

Pakistan is blessed with 1001 Km plus coastline which is approximately 266.5 Km in Sindh and 734.5 Km in Balochistan. There are picnic spots, sightseeing places, sandy and sunny beaches, along the coast. Hingol National Park is situated on Makran coast covering 1650 Square Km area, which was declared as reserved park in 1988. This largest park is about 200 Km from Karachi which is full of attraction for tourists. The overall security conditions have much improved. Coastal high is operational. Gwadar, Ormara, Pasni and Turbot are reasonably developed cities now. Almost all civic amenities and hospitals are now available. Continuous patrolling of coastal high way by security agencies including Pakistan Navy (PN) Marines and at sea especially close to the coast by Pakistan Maritime Security Agency (PMSA) and Coast Guard. Holiday resorts can be developed at suitable locations which may have water sports as already described. Beach spots exclusively for foreigners may also be developed. A few resorts have been developed by private entrepreneurs at Gwadar. The Hawkes Bay and Sands spit areas belong to Karachi Port Trust (KPT) and government of Sindh which is given on lease for the construction of huts/ holiday resorts. The Manora highway is now operational. However, from tourism point of view these areas needs to be more developed. Holiday resorts can be built under Public Private Partnership. Manora beach is suitable to provide recreation facilities needs to be given more attention. It will ease the visitor's pressure on Clifton beach which has been reasonably developed

and is normally overcrowded. Harbor cruises may be organized in Karachi and Port Qasim like in other ports of the world. Coastal cruises on sea going ferries of the North Arabian may be arranged in calm season. Deep sea fishing as a sport may be arranged on suitable vessels. However, there is no jetty for boarding / landing for the tourists in Karachi port and PQA. To start with, KPT may consider giving on lease any berth suitable which can be converted for handling passenger ferries and vessels for harbor cruises. KPT has already given on lease the land inside Jinnah Bridge and the old Native Jetty Bridge to a private entrepreneur where Port Grand is functioning to provide leisure activities. Ferry service and harbor cruises will certainly promote tourism, provide leisure activities which will generate economic activities and jobs which is badly required. Moreover, modern ports should be able to handle all types of cargo including passenger ferries and boats for harbor cruises. It is pertinent to mention that a tourist ferry service "Gulf Dream Cruise" was started in OCT 2006 by a private entrepreneur which made its maiden voyage to Dubai in the first week of Nov (Dawn 25 Aug 2006). It was comparatively a large vessel having 540 cabins to accommodate 1250 passengers and about 400 crew equipped with almost all recreation facilities like restaurants, theaters, and indoor games. Since the feasibility study, planning and execution was half baked therefore, it only made maiden voyage. Major drawback is considered visa problems at Dubai which was not properly worked out

with the concerned authorities by the operators. If the project had started with a relatively smaller ferry with a day trip along the coast and subsequently to overnight / few nights and then to other countries after completely settling the visa formalities, would have been successful. It may be mentioned that passenger ferries can also do coasting in the territorial waters of the other countries like merchant ships.

There are a lot avenues for the promotion of Inland Waterway transport and tourism. Pakistan is blessed with rivers which are being regulated by Federal government under WAPDA Act and a number of canals, waterways and lakes under the control of respective provincial governments. Considering the benefits of inland waterway transport as the safest, cheapest and cleanest mode of transport, at the same time to promote tourism, the government of Punjab took the initiative to set up an Inland Water Transport Development Company (IWTDC) in 2014. It was manned mostly by retd naval personnel. The main task was studying and developing an Inland Water Transport & tourism system along the Indus River corridor from Port Qasim to Nowshera. In phase-1, the survey of the 220 Km long channel from Attock to Daudkhel has been carried out with the support of PN with funding by a group of entrepreneurs as a private sector initiative to evaluate the feasibility of this channel. To make this channel navigable, widening, and marking for the vessels to ply, massive rock blasting has been carried out to remove obstacles.

Moreover, landing / boarding jetties have also been constructed (Website IWTDC). With the changes in the Federal and Punjab governments in 2018 this company was stopped to function along with few other and the assets were transferred to Punjab government. However, this channel is functional and is being used by the tourists as well as for transportation of personnel and cargo. This company needs to be revived to continue work because there are quite a few other patches of about 200Km long which can be developed to promote tourism and for inland transportation.

To summarize, a lot of avenues are available for the promotion of maritime and inland waterways tourism for strengthening the economy. Few proposals for way forward are: i) Governments of Sindh and Balochistan may earmark water fronts which may be given on lease to entrepreneurs for building holiday resorts along the coast under Public Private Partnership. ii) Government of Sindh and KPT may actively consider giving water fronts on Hawks Bay and Sandspit on lease to entrepreneurs for building holiday resorts. iii) KPT may lease any suitable jetty for the operation of tourist ferries and vessels for harbor cruises. iv) Manora beach needs to be more developed for tourists by the Sindh government. v) Inland Waterway Development Company (IWTDC) may be revived by the Punjab government. In short Pakistan has ample potential of maritime and inland waterways tourism. We need to develop all the sectors to enhance economy and job creation which is a dire need of the country. ❌❌



# PN RECKONER IN NOVEMBER

Source: PN History & Archives Centre

- Nov 15, 1957:** Exercise Crescent-I held in the North Arabian sea. This was the first major maritime exercise organized by Pakistan Navy. Crescent Hall in PNS KARSAZ was specially constructed for the inaugural event of this exercise.
- Nov 28, 1960:** President General Mohammad Ayub Khan presented the National Standard to Pakistan Navy at PNS KARSAZ.
- Nov 24, 1972:** The third pair of Shanghai 2 Class Fast Patrol Craft was acquired from People's Republic China and commissioned in PATRON 10 as PNS GILGIT (P-144) and PNS PISHIN (P-145) at PN Dockyard.
- Nov 10, 1976:** The first pair of Hainan Class Submarine Chasers were acquired from People's Republic China and commissioned as PNS SIND (P-159) and PNS BALOCHISTAN (P-155) at Zhang Zhiang Shipyard China. Upon arrival in Pakistan, the chasers were inducted into the PATRON 10.
- Nov 1979:** The first of the SEASPAK series of bi-annual Maritime Exercise was held in the North Arabian Sea.
- Nov 05, 1984:** The first of the two PN Coastal Oil Tankers commissioned as PNS GWADAR (P-49).
- Nov 26, 1987:** Base camp established at Ormara Head and inaugurated as Remote Data Station MIANWALI.
- Nov 25, 1990:** Marine Battalion formed, PNS QASIM re-commissioned on Manora Island as a depot unit for Pakistan Marines.
- Nov 18, 2006:** Base camp established at Nathiagali Karachi for 'Navy Seal Group'.
- Nov 24, 2006:** First-ever Joint Force 'Amphibious Demonstration' conducted on Manora beach by PNS QASIM as part of PN arrangements in support of IDEAS 2006.
- Nov 15, 2016:** PNS HAMEED was commissioned in the coastal region near Karachi.
- Nov 01, 2019:** Steel cutting ceremony of two Type 054 A Frigates built for Pakistan Navy held at Hudong Zhonghua (HZ) Shipyard China.
- Nov 27, 2019:** A launching ceremony was held for the first indigenously designed Fast Attack Craft (Missile) / FAC (M) at KS&EW.
- Nov 13, 2020:** Commissioning Ceremony of Corvette PNS TABUK held at Black Sea port of Constanta Romania.
- Nov 08, 2021::** The Commissioning Ceremony of First Type 054 A/P Frigate PNS TUGHRIL (F-261) was held at Hudong Zhonghua (HZ) Shipyard, China.
- Nov 22, 2022:** Pakistan Navy Ship TABUK (F-272) deployed to Doha, Qatar for maritime security during FIFA World Cup 2022.
- Nov 25, 2022:** The Commissioning Ceremony of PNS KHAIBAR (282) was held at Istanbul Naval Shipyard Turkiye.

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# TRIBUTE TO CHOSEN ONES

You rose above the clouds  
Higher in roaring thunder loud  
to duty no shadow matched your light  
you'r alive, yet not in our sight...

your radiance beam in daughters' smile  
you left them a life, full of pride  
O' brave souls, courageous & determined to ride  
You all left us honour worth thousand lives

With grace you went to dwelling place  
In honoured abodes you stay in grace  
With wings of light in heavens you rest  
We envy on earth, you pass all tests

Lt Cdr Saba Riasat PN

