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FISHERMAN'S HANDBOOK On Typhoons and Strong Winds in Vietnam

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On Typhoons and Strong Winds in Vietnam

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Map of the sea regions of Vietnam
(*Source: http://www.lyson.org*)

FISHERMAN'S HANDBOOK

On Typhoons and Strong Winds in Vietnam


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Foreword

The fisheries sector contributes significantly to the economy of Vietnam and provides employment opportunities to thousands of people. Conversely, the increase in the number of typhoons in the country has led to severe impacts in the economic, social and environmental sectors in the past. This ongoing trend challenges the coastal population, particularly the fishing communities which are considered to be the most vulnerable. In order to mitigate damages due to typhoons as well as to protect fishing communities, fishermen are required to have a good preparation and understanding to cope with future strong wind-related disasters.

This handbook is intended as an easily accessible reference guide for fishermen and their colleagues before and during disasters. It contents are divided into three main parts:

- Introduction
- Inland activities
- At sea activities

The handbook provides some skills and preparation activities that the fishermen should learn and practice during their daily activities and typhoon time. The handbook also provides some information on the core governmental regulations and other information on havens for sheltering, coastal stations, which are useful for each fishing trip. This handbook aims to stimulate communication among fishing communities to share their knowledge, especially their experiences, with each other towards safer communities. This handbook is not the ultimate safety guide for the fishers, but this is the very first step to enhance the awareness of the fishing communities, their associations, and related government departments. Hopefully, this handbook will contribute, even in a small way, to enhance the disaster awareness of Vietnamese fishermen for their safety from typhoons and strong wind-related disasters.

Rajib Shaw
Associate Professor
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How To Use This Handbook

1. How the handbook can be distributed to fishermen

In the context of Vietnam where fishermen work closely with officials of the Aquatic Product Agency, the officials can distribute the handbook to the fishermen. However one of the most efficient ways of handbook distribution is via training courses for fishermen related to typhoon disaster mitigation and prevention, and through the fishermen's association and other related associations.

2. How fishermen can use the handbooks

The handbook contains 3 main parts and the fishermen should read from part 1 to 3 carefully. The fisherman can also refer to each part directly in case of emergency.

There are some blank parts in this book where fishermen can write down the relevant experiences by enquiring others.

It is suggested that the fishermen should use this handbook daily. Once the handbook is received, every fisherman is encouraged to share the information in the handbook to their colleagues and their families.

3. Stay up to date

This handbook is updated from time to time thus all feedbacks on this book are welcomed to be sent to the following address:

Ms. Kieu Thi Kinh (E-mail: kieukinh@gmail.com)

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Typhoons can cause great damages to lives and properties: Especially in the context of climate change, typhoons may become more frequent and intense. The occurrence of typhoons recorded in Vietnam stands as the third most frequent amongst Southeast Asian countries.

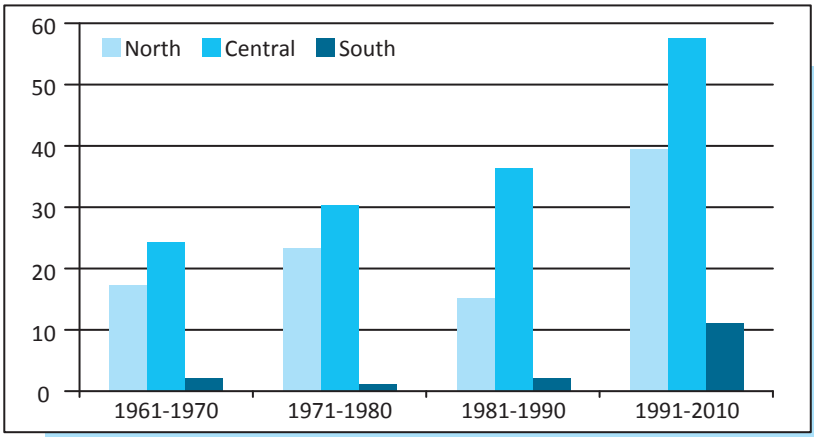


Figure 1 Number of typhoons and tropical depressions in the sea regions of Vietnam from 1961 to 2010

Figure 1 presents that the number of typhoons has increased significantly during the last 50 years, particularly in the south region. The occurrences of typhoons and tropical depressions are different from north to south region as shown in Table 1.

Table 1: Occurrences of typhoons and tropical depressions in different sea regions of Vietnam

Month	Quang Ninh - Thanh Hoa	Nghe An - Quang Binh	Quang Tri - Quang Ngai	Binh Dinh - Ninh Thuan	Binh Thuan - Ca Mau	East Sea
Jan					3	
Feb						
Mar					1	
Apr					1	1
May			2		0	2
June	9	1	4	2	1	3
July	27	4	1	1	0	1
Aug	23	11	6	1	0	
Sep	20	15	18	2	0	
Oct	5	11	11	21	4	
Nov	1	0	3	22	9	1
Dec	0	0	1	4	0	
Total	85	42	46	53	19	8

Source: Ministry of Natural Resource and Environment, Vietnam

Based on the distribution of typhoons in Table 1, the period from June to November can be considered as the stormy season in Vietnam. As for the regional occurrences, the peak season for typhoons in the northern, central, and southern parts is August, October, and November, respectively.
However recent typhoon records have shown uncertainties of typhoon occurrences and changing paths. For instance, in March 2005, there was a typhoon named Roke that occurred in East Sea region. Another typical example is typhoon Chanchu which struck the sea region of Vietnam quite early in May 2006 and its path was difficult to predict and resulted in the huge loss of offshore fishermen's lives.

Table 2: Damages due to severe typhoons in Vietnam from 2005-2009

Typhoon	Time	Damage			
		Deaths	Destroyed houses	Sunk ships	Economic losses (million USD)
Ketsana	September 2009	172	472,457	977	734
Hagupit	September 2008	41	11,690	38	53
Durian	December 2006	85	244,905	1,228	371
Xangsane	October 2006	72	349,348	951	533
Damrey	September 2005	68	118,269	65	180

Source: Central Committee for Flood and Storm Control, Vietnam

The fishermen are one of the most vulnerable groups once typhoons occur. Typhoons out at sea cause large waves, heavy rain and high winds, disrupting maritime travel and, at times, causing ships to sink. As a typhoon approaches land, its wind produces a rush of seawater called a storm surge that can devastate coastal areas.

Houses were damaged due to typhoon Xangsane, 2006.
Photo by Buu Lan

Ships were sunk at Tho Quang lock.
Source: Vietnam Net

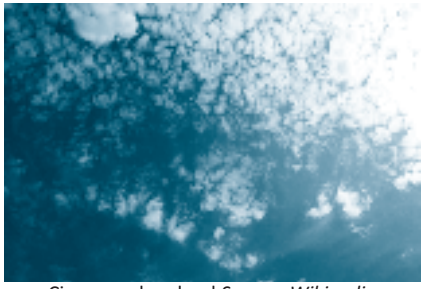
Besides typhoons, fishermen have to confront with other uncertainties of weather such as tropical low pressures or strong gust of wind. For instance, in December 2010, the sudden occurrence of the north east monsoon at the sea of central region caused damages to tens of ships and missing fishermen were reported. For these reasons, this handbook was written to build the capacity of fishermen in dealing with natural hazards.

2.1. Normal time

2.1.1. Update weather forecast

In order to update weather information, fishermen can rely on official weather forecast channels of Vietnamese Television, FM radio and local television channels. Apart from the weather forecast, indigenous knowledge is also an important channel for weather prediction.
Indigenous knowledge for typhoon occurrence

- **Based on sky status**
  - If the sky is clear and vast, the atmosphere is hot and muggy and windless for several days. Then cirrocumulus clouds converge at the horizon storm will come soon after that cumulonimbus clouds appear, wind comes to be strong, a typhoon will come from the direction of wind.
  - If flash of lighting occurs continuously and regularly, causes interference to radio, the typhoon is occurring at the direction of the brightest lighting. In Vietnam, before typhoon comes, flash of lighting often occurs in South East direction.
  - Experiences of coastal residents of the north region of Vietnam show that in the early morning if cirrocumulus clouds in the shape of pangolin scales appear and move from East to West, there will be a typhoon several days later.



Cirrocumulus cloud *Source: Wikipedia.org*

Cumulonimbus cloud *Source: maltaweather.info*

- **Based on status of sea surface**
  - Swells appear at sea-surface, spread direction of waves and wind is not the same, a typhoon occurs more than 100 kilometers far away. Usually, the spread direction of waves matches the moving direction of typhoon.
  - Sea surface becomes more bright and changes from calm to rough, the intensity increases bit by bit
- **Based on animal behaviors**
  - In July with north-east wind, if dragonflies fly, there will be storm
  - If ants build “wall”, there will be a typhoon; if ants carry their babies, there will be rain

2.1.2. Necessary kits for a ship before the voyage

Please check (✓) if your ship is equipped with the following kits for getting to the sea. This checklist is based on the circular 02/2007/TT-BTS of the Vietnamese government.

Table 3: Necessary kits for a ship before voyage

Kit	Item	Check	
		Enough	Well-working
Life saver	Life jacket: each ship must have 2 life jackets at cabin and 1 for each fisherman		
	Lifebuoy: 4/ship		
	Life-raft must contain **every** member of ship		
Communication equipment	Transceiver: each ship must have at least 1 transceiver with at least 100W capacity		
	Transistor radio: each ship should have at least 1 transistor radio		
	Long range transceiver: each offshore ship should have at least 1 transceiver, for example **ICOM 710, ICOM 77, ICOM 718**		
	FM radio		
Nautical equipment (each ship must have 1)	Compass		
	Radar		
	Depth gauge		
	GPS machine: 1/ship		
	Nautical binocular: 1/ship		
	Pole: 1/ship		
	Nautical chart: 1/ship		
	Tidal map of Vietnam		
Signal kit (each ship must have 1)	Left Side light: red color		
	Right Side light: Blue color		
	White light		
	Light for catching fish signal: one for each color (white, blue, red)		
	Red flag		
	White flag		
	Conical black flag		
Fire extinguisher	Fire extinguisher: 4/ship		
	Fire fighting pump: 2/ship		
	Other tools: crowbar, bucket, barrel of sand		
Shipwreck and hole prevention equipment	Dry suction pump		
	Canvas		
	Hand pump		
	Buffer, rags		
	Dau rai (dipterocarpus alatus Roxb oil)		
First aid kit and drug			

2.1.3. Regulations before going to the sea

The decree 66/2005/NĐ-CP of the Vietnamese government announced the regulations for ensuring the safety of fishing vessel and people working in the vessel. Based on the decree, before the voyage, fishermen must follow these regulations:

- Ensure the safety of the ship
- The necessary equipment for the trip is enough (see section 2.1.2)
- Important papers of the ship such as register certificate, safe ship certificate, etc.
- In case of offshore ship, every crewmember must have accident insurance
- Register your catch-fish location and communication frequency of ship to the Agency of Aquatic Protection
- Every crewmember must ensure their status of health for the trip

> ***Message:*** Being at sea in a confined space, the fishermen are vulnerable to some health factors, such as high levels of smoking and drinking alcohol, limitation of fresh food and working long hours with disrupted sleep patterns (Matheson et al., 2001). Thus they should have health insurances and health check-ups at times to ensure the state of health for intense periods of work.

2.1.4. Additional Preparedness

> ***Message:*** If you have any experiences of weather forecasting and/or facing typhoons and uncertainties at sea please share among your friends and neighbors and ask them to also share their experiences then write them down.

Experiences of weather forecasting:

Experiences of facing emergency cases:

2.1.5. Conduct emergency drills

In order to ensure that every crew member is conversant in dealing with emergency cases, especially when strong wind-related disasters occur suddenly

Content of drills

- Fire extinguishment
- Rescue and giving first aid
- Steering ship in accident
- Fixing holes of ship
- Abandoning ship

Before a drill, each of the members must be assigned tasks so that they can know what they need to act during the drill

Requirement

- Captain has to be experienced in appointing members to the posts
- All crewmembers have to attend on time
- Each of the members is proficient in his tasks and act as quick as possible

2.2. Typhoon time

2.2.1. Before the typhoon

Message: Usually 2 or 3 days before, typhoon can be detected but there are typhoons which are very fast and give little time to prepare perhaps only 1 – 1.5 days. Thus adequate and timely preparation before typhoons will mitigate the damages to properties and lives. Please read and check ( ) the following activities for typhoon preparation.

Time	Preparation activities	Check
2 days before	Small ships: secure them away from the reach of waves. Turn them upside down and tie securely to poles. In area known to flood, fill them with water and secure to strong points to prevent them from floating away. Ensure that boats are not in danger from falling trees or branches	
	Big ships (capacity more than 90Hp): move to lock to prevent them from strong winds, waves. Anchor them safely	
	Reinforce the doors, windows...of your ship	
	Take the fuel and other important stuff away from your ship	
	Update weather information	
1 day before	Help your colleagues to protect their ships	
	Ensure that you are at home or safe place with food and drinks at least for 3 days	
	Reinforce houses if required especially the glass windows. Watch for leaks around windows and doors. If the wind is strong enough, water may be blown into your home even when the windows are closed	
	Evacuate if the local authority requires you to Keep emergency kit (first aid kit, medicine, food, water, clothing, candles, important papers) stocked and easily accessible	
	Listen to updated weather forecast	
TYPHOON		

2.2.2. Typhoon signal gun

Signal gun meaning

When an offshore typhoon occurs: shooting number 1, including 9 shoots, blue color in 3 times, each time 3 shoots, repetitively 3 minutes. Time of first and second shooting is from 19:30 to 20:00 and from 4:30 to 5:00 repetitively.

When an inshore typhoon occurs: shooting number 2, including 9 shoots in 3 times, each time 3 shoots, repetitively 3 minutes. The 2 first shootings are red and the last is blue. Time of first, second and last shooting is from 19:30 to 20:00, from 22:30 to 23:00 and from 4:30 to 5:00 repetitively.

When an emergency typhoon or tropical depression occurs: shooting number 3, including 9 shoots red color, in 3 times, each time 3 shoots, repetitively 3 minutes. The 2 first shootings are red and the last is blue. Time of first, second, third and last shooting is from 19:30 to 20:00, from 22:30 to 23:00, from 0:30 to 1:00 and from 4:30 to 5:00 repetitively.

Table 4: Shooting positions of typhoon gun signal in Vietnam

No	Shooting unit	Position of shooting
1	Quang Ninh	Co To island, Co To District Ngoc Vung island, Van Don District
2	Hai Phong	Bach Long Vy island
3	Thai Binh	Diem Dien
4	Nam Dinh	Ngoc Lam, Nghia Trung District Con Lu, Xuan Thuy District Doanh Chau, Hai Hau District
5	Ninh Binh	Cua Day, Kim Son District
6	Thanh Hoa	Hoang Truong, Hoang Hoa District Truong Le, Sam Son city Duy Xuyen, Tinh Gia District
7	Nghe An	Hon Mat
8	Ha Tinh	Cua Sot, Thach Ha District
9	Quang Binh	Cua Gianh, Quang Trach District
10	Quang Tri	Cua Viet, Gio Linh District
11	Thua Thien Hue	Thuan An, Phu Vang District
12	Da Nang	Hai Van, Lien Chieu District Son Tra, Son Tra District
13	Quang Nam	Tan Hiep, Cu Lao Cham, Hoi An City Ban Than, Binh Son District
14	Quang Ngai	Sa Huynh, Duc Pho District Ly Son island Son Tra, Binh Son District
15	Binh Dinh	Nhon Chau, Quy Nhon City
16	Phu Yen	Hon Bu, Tuy An District
17	Khanh Hoa	Dam Mon, Van Ninh District Hon Mun, Nha Trang City Binh Ba, Cam Ranh Town

18	Ninh Thuan	Vinh Hy, Ninh Hai District Nhon Hai, Ninh Hai District Son Hai, Ninh Phuoc District
19	Binh Thuan	Cao Cat, Phu Quy District
20	Ba Ria Vung Tau	Con Dao, Con Dao District
21	Ho Chi Minh	Thach An, Can Gio District Ly Nhon, Can Gio District Dong Hoa, Can Gio District
22	Tien Giang	Vam Lang, Go Cong Dong District Cua Tieu, Go Cong Dong District
23	Ben Tre	Cua Ham Luong, An Thuy District
24	Tra Vinh	My Long, Cau Ngang District
25	Soc Trang	Tran De, Long Phu District Vinh Chau, Vinh Chau Town
26	Bac Lieu	Gianh Hao, Gianh Hao Town
27	Ca Mau	Song Doc, Song Doc Town Kinh Hoi, U Minh District Hon Khoai, Ngoc Hien District Hon Chuoi, Tran Van Thoi District
28	Kien Giang	Military headquarters of Kien Giang Nam Du, Kien Hai District An Thoi, Phu Quoc District Tho Chu, Phu Quoc District

2.2.2. During typhoon time

- Follow Four-On-Spot motto designed by the local government
- Stay at home or safe evacuation place
- Listen to the radio and watch TV for updating typhoon information
- Save the energy of batteries, just use in absolutely necessary cases
- Keep emergency kit with you at all times
- Your family should be at the strongest room
- Take care of your family members
- Cooperate and help your neighbors as well as friends

⚠ **Pay no attention to rumors**

⚠ **During the calm eye, DO NOT venture outdoor, stay where you are, as the other side of the typhoon is often more intense than before the eye**

Stories: During the Xangsane typhoon, there were thousands of injuries in Hoa Vang, Hoa Cuong, Danang city. During the calm eye, the residents thought that the typhoon had stopped, thus they tried to fix the roofs. However strong winds occurred with heavy rain. Subsequently, they were injured by the iron roofs. Especially, in case of Mr Quach Ngoc Liem, Vinh Trung ward, Thanh Khe District, when fixing his roof, he was fell down by strong wind and he lost his life.

Do not fix your roof when a typhoon has not yet fully passed. *Source: archi.vn*

2.2.3. After the typhoon

Immediate actions after the typhoon

- Stay indoor or in your shelter and wait for the all – clear announcement
- Be aware of the likelihood of fallen power lines
- Do not touch wet switches
- Venture outside only when really necessary (remember to wear boots, helmets...)

Do not touch wet switches. *Source: chinhphu.vn*

Fallen power lines. *Photo by Dat Viet*

- Make emergency repairs
- Continue listening to updated weather forecast

Activities after the typhoon 1 day

- Clean – up activities
- Keep listening to weather forecast
- Recover necessary utilities and check before using them
- Pay careful attention to sanitation after the typhoon, ensure personal hygiene
- Do not drink tap water until it has been checked for bacteria
- Always eat well-cooked food
- Write the experiences to prepare better for next typhoon

Inundation after typhoon
Photo by Vnexpress

Do not use unsafe food.
Source: giadinh.net.vn

Drink well – water only when it is sterilized. *Photo by Dang Khoa*

3. At SEA ACTIVITIES

3.1. Normal time

3.1.1. Update weather forecast

When typhoons or tropical low pressures occur in Vietnamese sea, Voice of Vietnam (VOV) will update weather information continuously through FM radio. In case of tropical low pressures and offshore typhoon, weather news will be updated 4 times per day. In case of incoming typhoons or inshore tropical low pressures, weather news will be updated 8 times per day. Besides, fishermen can update weather information through coastal stations.

Please check (✓) if you know the following radio stations

Name of radio station	Frequency	Time of now-casting		Check
		Weather forecast	Typhoon forecast	
Bach Long Vy	6920 KHz 5450 KHz	9h45 and 14h45	9h45 and 14h45	
FM radio	(594, 630, 648, 655, 666, 675, 690, 711) KHz (5975, 9530, 7210) KHz	Every 2 hours		
Ho Chi Minh radio	8294 KHz	9h and 19h	Every odd hour	
Danang radio	8294 KHz	7h30 and 19h30		
Hai Phong radio	8294 KHz	8h and 20h	Every even hour	

Message: When the ships are away from inland more than 100 sea miles, the frequencies are 8291KHz and 12290 KHz and when the ships are away from inland less than 100 sea miles, the frequencies are 2182 KHz, 6215 KHz, 7903 KHz, 7906 KHz.

List of coastal stations in Vietnam is shown in table 5

Table 5: Coastal stations in Vietnam

No	Name of station	Frequency	Available time	Note
1	Mong Cai radio	85155 KHz	24 hours	
2	Cua Ong radio	8143 KHz	24 hours	
3	Hon Gai radio	8173 KHz 12353 KHz	24 hours	
4	Hai Phong radio	6215 KHz 8291 KHz 12290 KHz	24 hours	Hai Phong radio is the information processing center 1
5	Ben Thuy radio	8155 KHz	24 hours	
6	Hue radio	8122 KHz	24 hours	
7	Da Nang radio	6215 KHz 8291 KHz 12290 KHz	24 hours	Da Nang radio is the information processing center2
8	Qui Nhon radio	8785 KHz 8149 KHz	24 hours	
9	Nha Trang radio	6215 KHz 8291 KHz	24 hours	
10	Ho Chi Minh radio	6215 KHz 8291 KHz 12290 KHz	24 hours	Ho Chi Minh radio is the information processing center 3
11	Vung Tau radio	6522 KHz 8291 KHz	24 hours	
12	Can Tho radio	8170 KHz	24 hours	
13	Kien Giang radio	8158 KHz	24 hours	

3.1.2. Daily check

Although typhoons do not occur however, every member of fishing fleet should check the quality and quantity of necessary equipment in the ship (as shown in section 2.1.2) and update weather forecast frequently as well as observe the changes of sea surface, sky to predict weather condition.

Conduct emergency drills often in order to improve the core skills of all crewmembers (as shown section 2.1.5).

3.2. Typhoon time

3.2.1. Before the typhoon

Once fishermen receive early warning of typhoons or tropical depressions, they should do the following activities timely:

- Know the current position of the ship in order to determine which way to steer
- Prepare to collect nets, in case of offshore catching, collect nets immediately
- Just steer your ship to come back only when the time is enough, if not find the closest places for sheltering
- Observe typhoon signal-gun
- Prepare for landfall because safe landfalls require good preparation, especially at night
- Update weather forecast continuously
- Check the necessary kit and every crewmember must prepare for contingencies
- Have a thorough understanding of typhoon center, direction, distance between your ship and typhoon center
- Collect your nets, in emergency case, you must cut the nets
- The core means of communication must be always available for updating weather information and rescue
- Inform all your colleagues' ships about typhoons or tropical depressions and closely contact them
- Wear lifejacket when strong winds occur, not only in typhoon time

Places for sheltering

If your ship cannot make landfall, these are places for sheltering

Table 6: Places for sheltering

Provinces/Cities	Address
Quang Ninh	Van Don (Van Don district); Co To island; Tien Yen (Tien Yen District)
Hai Phong	Ha Long (Cat Hai District), Bach Long Vy island
Thai Binh	Diem Lo seaport, Tra Ly, Ninh Co
Ninh Binh	Day river mouth (Kim Son district)
Thanh Hoa	Lach Truong (Hau Loc District); Lach Hoi (Sam Son town)
Nghe An	Lach Con (Quynh Luu District)
Ha Tinh	Cua Sot (Thanh Ha District), Cua Nghi Xuan (Cam Xuyen District)
Quang Binh	Giang river mouth (Bo Trach District), Cua Hon La (Quang Trach District)
Quang Tri	Cua Tung (Vinh Linh District), Cua Viet (Gio Linh District)
Thua Thien Hue	Phu Thuan, Thuan An seaport (Phu Vang District), Cau Hai (Phu Loc)
Da Nang	Tho Quang (Son Tra District), Han river mouth
Quang Nam	Cua Dai sea mouth (Hoi An town), An Hoa (Nui Thanh District), Cu Lao Cham (Duy Xuyen District)
Quang Ngai	Sa Ky, Co Luy (Tu Ngia District), My A (Duc Pho District), Ly Son island (Dao Ly Son District)
Binh Dinh	Tam Quan river mouth (Hoai Nhon District), Dam De Gi (Phu Cat District), Dam Thi Nai (Quy Nhon Town)

Phu Yen	Xuan Dai Bay, Dam Cu Mong, Vung Ro
Khanh Hoa	Da Tay island (Truong Sa District), Cua Be Song Tac-Hon Ro (Nha Trang town), Cam Ranh Bay (Da Bac)
Ninh Thuan	Cai river mouth (Phan Rang town), Ninh Chu (Ninh Hai District)
Binh Thuan	La Gi, Ba Dang river mouth (Ham Tan District), Phu Quy island (Tuy Phong District), Mui Ne (Phan Thiet town)
Ho Chi Minh	Song Dinh and Dinh Ba (Can Gio District)
Ba Ria – Vung Tau	Dinh river mouth, Con Son (Con Dao District), Ghenh Rai Bay
Tien Giang	Soai Rap river mouth (Go Cong Dong District)
Ben Tre	Cua Dai (Binh Thang commune, Binh Dai District), Cua Ba Lai, Cua Ham Luong, Cua Co Chien
Tra Vinh	Vam Hau, Cua Cung Hau, Cua Dinh An
Soc Trang	Cua Tran De, Kenh Ba – Long Phu
Bac Lieu	Cua Ganh Hao, Cua Cai Cungf, Cua Nha Mat
Ca Mau	Ong Doc river mouth, Cu Bo De, Cai Doi Vam, Cua Khanh Hoi, Cua Hon Khoai, Cua Rach Guoc (Ngoc Hien District)
Kien Giang	Cua Song Cai Lon – Cai Be, Hon Tre island, Mui Ganh Dau, Cua To Chau
In emergency cases, fishermen can contact with Chinese officials for sheltering	Khoi Thuy fish port, Loi Chau town, Quang Dong province Nam van fish port, Bai Hai city, Quang Tay Bat So fish port, Duong Pho fish port, Dong Phuong Town, Hai Nam province

Anchor safely in typhoon time

When typhoons or tropical depressions occur, if ships are not anchored properly, they can be damaged due to strong collisions among ships or ranging waves. In order to reduce the damages, the fishermen are required to follow these guides:

- Anchoring in a port without wharf
  - Ship should be perpendicular to the pier, the stern is directed towards the pier
  - Do not position the ship in parallel to the pier because surging tides may strike the freeboard and damage the ship.
- Keep tires or elastic stuffs along the freeboard to reduce strong bumps among the ships
- If there is no typhoon prevention dock available, find a place sheltered from the wind and anchor
- Anchoring technical requirement (Look at the figure 2 for more details)
  - Use **hall anchors** for **steel** cover ships
  - Use **nautical anchors** for **wooden** cover ships

Ships with tires at Ly Son island.
Photo by vovnews.vn

See the figure for more details

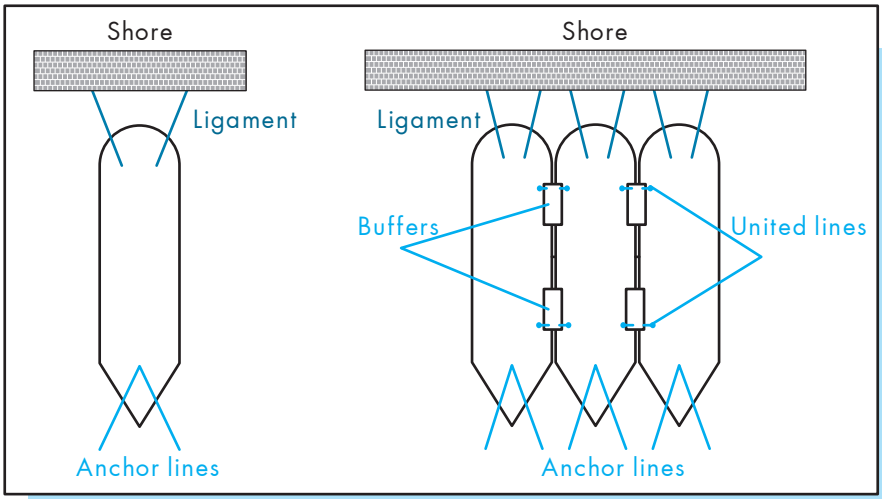


Figure 2: Anchoring safely

Personal survival techniques

Once typhoons occur, the fishermen may face dangerous situations, for instance, the ship is turned over, sunk or even broken. Thus personal survival skills are very important to save one's life.

Step 1:

- Wear warm clothing, if possible wear an immersion suit
- Put on the lifejacket
- Prepare food and drink for the crew
- Keep a whistle to make attention of Search and Rescue ship and others

Step 2:

- Release the lashings
- Launch the raft
- Put the raft alongside so that the crew can board dry
- Put the prepared food, drink to the raft
- Cut the painter when everyone is aboard
- At times the life-raft can be destroyed, the fishermen have to get off the raft/ship or accidentally, fishermen may fall overboard, thus they need to protect themselves from the decrease of body temperature like below:
- Do not swim unless you are very close to safe place
- If on your own, float as still as possible in the water with your knees raised up into your chest and hands tucked under your lifejacket

If two or more people are in the water together, form a huddle so that the sides of your bodies are close together

3.2.2. During typhoon time

How to escape from a typhoon

When the distance between a ship and the typhoon center is more than 200 nautical miles

- If the ship is on the right of the typhoon path or tropical depression movement, the captain must steer into the opposite way of the wind direction. At that time, the wind will blow to the prow of the ship, the degree of askew angle depends on the capacity of the ship. As shown in figure 3, the ship is moving towards North-North East direction
- If the ship is on the left of or in the same way as the typhoon path or tropical depression movement, the captain must steer in the same way of the wind direction. At that time, the wind will blow to the stern. As shown in figure 3, the ship is moving towards South-South West direction
- **Note: when steering a ship away from a typhoon or tropical depression, the captain must always keep the distance between the ship and typhoon center in the range of at least 350-400 kilometers (about 200 nautical miles).**

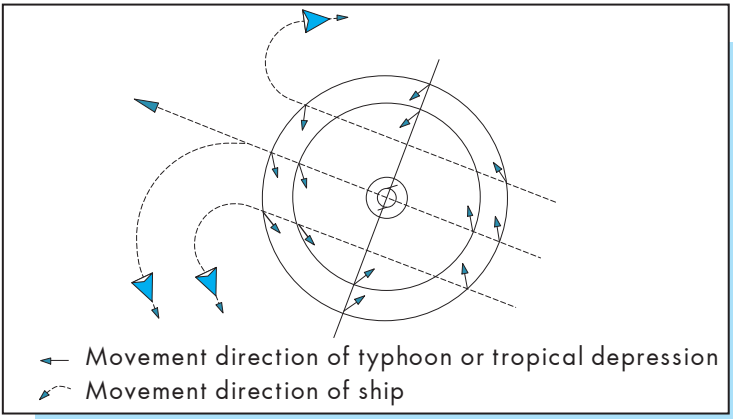


Figure 3: Steering ship from typhoons, tropical depressions

When the distance between the ship and typhoon center is less than 200 nautical miles

- The captain must be self controlled, concentrate to steering the ship far from the typhoon center as quickly as possible
- When the ship is in the right-half circle of typhoon/tropical depression, steer opposite with the wind direction in that way, the wind will blow to the prow and the degree of askew angle will be about 30-45° (like position 1 and 2 of figure 4), keep steering that way until the ship escapes from dangerous radius
- When the ship is in the left-half circle of typhoon/tropical depression, steer the same way of the wind direction in that way, the wind will blow to the prow and the degree of askew angle will be about 30-45° (as position 3 of figure 4), keep steering that way until you realize that the wind direction changes into Southern, at that time the ship escapes from dangerous radius (as position 4 of figure 4)

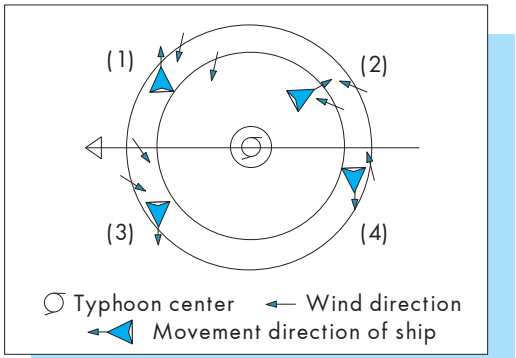


Figure 4: How to escape typhoon center region

Steering the ship in case of strong winds and high waves

- In the areas close to the typhoon center, the wind is very strong and waves are high. In order to reduce the power of waves, the fishermen should throw heavy and unnecessary stuff from the deck into the sea to keep the balance of the ship
- Steer the ship in a direction where the angle of the winds compared to the freeboard of ship is about 30-45°
- Do not steer the ship in the direction of wave trough, otherwise the ship may be turned over easily
- In any case, do not stop steering and letting the ship follow the direction of the wind, otherwise the ship will get closer to typhoon center
- When steering, control the movement direction of ship and wave at the right side to make an angle of 150-160° (as position A of figure) or at the left side 20-30° (as position B of figure 5)

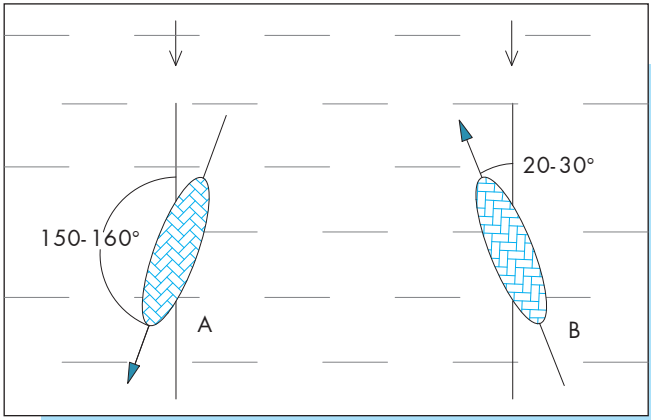


Figure 5: Steering ship to prevent from high waves
A: towards the waves B: against the waves

- If the captain wants to change the movement direction of the ship, he has to change at the time when the vessel lies in the wave trough

Contact for help
In stressful situations during typhoon time, the fishermen can contact with Search and Rescue (SAR) Centers, coastal stations and other ships for help

** Contact coastal stations:* Names and frequencies of coastal stations are shown in table 5 of section 3.1.1

Contact regulation: call out the coastal name and your ship's name less than 3 times with 3 following detailed information:

- Number of ship and registered place
- Time when accident happened
- Location of your ship when accident happened
- Do not use the frequency of coastal stations to communicate information amongst the ships

* Contact SAR Centers: There are 3 SAR Centers and 1 SAR station in Vietnam, through channel 16 HF, frequency

Table 7: Information of SAR Center

SAR Center	Contact Number	Address	Check
SAR region 1	+84.31.3795503	22 Ngo Quyen street, May Chai ward, Ngo Quyen District, Hai Phong City	
SAR region 2	+84.511.3924957	Vung Da Den, Tho Quang, Son Tra District, Da Nang City	
SAR region 3	+84.64.3856906	115/45, 30th April Street, 11 ward, Vung Tau City	
Truong Sa	+84.58.3590689	44 Tran Phu Street, Vinh Nguyen ward, Nha Trang City	

If the fishermen cannot contact SAR forces, they can contact the friends' ships and/or border stations.

Deal with hole

Hole can occur due to collisions between the ships and reef, thus knowing how to deal with the hole is extremely necessary, particularly during typhoon time. The following methods will help fishermen deal with the hole or slow down the sinking speed of the ship

- Big ships:
  - Close all the doors connected with the sea
  - Open pump machine to pump water from ship to sea
  - Fix the hole
  - If the hole is too big and cannot be fixed, all members must go to the deck, wear lifejacket, launch life-raft and prepare for abandoning ship
- Small ships:
  - Change the position of heavy stuffs far from the hole
  - Fix the hole, concurrently pump water to sea
  - Just keep the really necessary stuffs, the rest should be thrown to sea, even some fishermen must wear lifejackets and jump to sea and the rest must try to fix as quickly as possible
- Fixing technique:
  - Use canvas, scraps of fabric as fine as possible, wood to stop the hole from outside
  - Use thin planks and plastic bags, scraps to stop the hole from inside
  - Use dau rai or adhesive to fill the hole

Make SOS signals

When the communication equipment is destroyed or your crew must stay in life-raft...the SOS signals are very useful for attracting attention of SAR ships and surrounding ships

- Use torches (flashlights) or mirrors for attention
- Make a fire safely
- Use whistles or ring the bell to make noise

3.2.3. After the typhoon

When you are still at sea:

- Continue contacting SAR forces, friends' ships and making SOS signals
- Use "personal survival techniques" in section 2.1.4
- If your ship is in safe condition, support SAR force to help other ships

When you are at safe place inland, follow the guides in section 2.2.3

Experiences of facing emergency cases at sea

Experiences of facing emergency cases at sea

Summary

Make sure that after reading this handbook, you still remember the key parts

INLAND

- Update weather information
- Regulations before the voyage
- Conduct emergency drills

AT SEA

- Coastal stations
- Escape from the typhoon
- Anchoring techniques
- Personal survival techniques

Further information

Some guides and information in this handbook are based on the following sources:

In Vietnamese

1. The decree 66/2005/NĐ-CP of Vietnamese government announced the regulations of ensuring safety for fishing vessel and people working in the vessel
   http://www.thuvienphapluat.vn/archive/Nghi-dinh/Nghi-dinh-66-2010-ND-CP-Quy-che-phoi-hop-quan-ly-nha-nuoc-vb107303t11.aspx
2. Circular 02/2007/TT-BTS of Vietnamese government
   http://www.sonongnghiep.binhthuan.gov.vnimage/news/thong%20tu%2002_2007_TT-BTS _hdan%20nd66.doc
3. Handbook for coping with disasters of Ho Chi Minh City
   (http://www.phongchonglutbaotphcm.gov.vn/?id=43)
4. Indigenous knowledge of typhoon and tropical depressions in website of Hydrometeorology of Vietnam
   http://www.thoitietnguyhiem.net/ttnh/ttnh.aspx?page=1

In English

5. European handbook for the prevention of accidents at sea and the safety of fishermen. Initiative of the social partners of the sea fishing sector co-financed by the European Union, May 2007.
   www.bim.ie/uploads/text_content/docs/LR-Pages-EN.pdf
6. The health of fishermen in the catching of the fishing industry: a gap analysis. C. Mathesion, S. Morrison, E. Murphy, T. Lawrie, L. Ritchie and C. Bond. Occup. Med. Vol 51 No.5, pp. 305-311, 2001.
   http://occmed.oxfordjournals.org/cgi/reprint/51/5/305.pdf