

Marine Biology Section
University Gent
Sofie Deraus

5 MILITARY EXERCISES

5.1 DESCRIPTION

Military use of the Belgian part of the North Sea comprises different types of exercises that are executed both on land (on the beach) and at sea. These exercises are all assigned to specific zones. Although these zones cover a large part of the BPNS, the intensity of the exercises is rather small in comparison to the other use functions.

5.2 SUBUSES AND DESCRIPTION

Military exercises can be categorised into different sub-uses according to the zone in which they are executed and to the military component that is responsible for them.

Mixed land/sea

Responsibility: Army (land component):

Conducted by Army, Air Force and Navy → **Shooting exercises directed seawards from the land.** These exercises are held off the beach area located in Nieuwpoort – Lombardsijde. The purposes of the exercises are to test new ammunition or weapons and to train the staff (simulation of defense against sudden air attacks). During the shooting exercises two types of targets can be used:

- balloons filled with Helium (can only be used when the wind direction is Northeast)
- Ultima 2 (little plane that is controlled from safety tower): the wings of the plane contain microphones that register the ammunition that passes in a certain range around them (this target cannot be used when it rains, because the rain drops give false signals).

The exercise area is divided into three shooting sectors, namely K, M and G. K stands for small ('klein'), M for medium ('middelgroot') and G for great sector ('groot'). Depending on the calibre of the ammunition used (and the associated distance they travel), the sector is chosen.

The sectors where these shooting exercises are held are mentioned on hydrographical charts of the Belgian coast. During the exercises all ships are advised to avoid the sector. The periods in which the exercises are held are announced to ships (Messages to Seafarers - 'Berichten aan Zeevarenden: BaZ') and airplanes (military bases send messages to the airports of Oostende and Koksijde who send them to the relevant airports).

Ammunition remainders are not cleaned (or captured by bullet catchers) from the seabed after termination of the exercises. The metal casings of the bullets that fall on land are cleaned afterwards.

Sporadically also 'chaff and flare' exercises with A109 helicopters are executed in this training area. These exercises are defense/decoy exercises (Adj. Debreyer pers. comm. 2003).

Responsibility: Army/Navy/Air Force → Amphibian exercises:

These are exercises to train the survival performance of Air Force pilots. They are dropped in sea and their survival capacities are tested. These exercises are only sporadically executed (not more than 5 times a year, mean of 3 exercises a year). Since impacts coming from airspace traffic are not considered in the project, this sub-use will not be considered further. The impact of the pilots in the water can be ignored (comparable to very low intensity of recreational bathing) (Cmdt. Morris pers. comm. 2003).

At sea

Responsibility: Navy → Shooting exercises at floating targets:

These exercises are held in a training area which forms a five-sided polygon. The naval ships are situated at the southern limit of the polygon and the shooting exercises are directed toward the north. The shots are aimed at a floating target that is dragged by another ship or anchored. The exercises can be executed during day or night time. The exercises are announced in BaZ and on NAVTEX ('Urgent Messages' from DVZ). During the exercises all ships are advised to avoid the sector. The exercises are performed from naval frigates employing canons with 100 mm ammunitions. The amount of ammunitions that is fired is classified information (Cmdt. Morris pers. comm. 2003).

Responsibility: Navy → Exercises in which experience is gained in the detonation of war ammunitions and training mines:

These exercises are held north of the anchor area Westhinder (hereafter called **mining exercises**). As the destruction of explosives at sea is forbidden the detonation of mines during mining exercises is also prohibited. Instead training mines are used. These are tape recorders simulating mines. The training mines are always cleared from the seabed after exercises. When real war ammunitions, that need to be swept due to safety reasons, are encountered by naval ships or fishermen/dredging vessels the mines can be detonated in this area (announced through 'Urgent Messages' – Dringende Berichten – which are broadcasted with NAVTEX (telex system of ships). When the location of discovery is not suited for explosion, the ammunition will first be brought to one of the training areas in the vicinity. War ammunitions are only seldom found in the study area. These exercises are held in a circular training area, which has only been in use since 2001. Different types of ships of the Belgian Navy can use this area. The exercises that are organised can be of two types:

- Defensive mining: many mines are put in groups in front of a harbour (simulated by other target in the exercise) and a secret entrance route is provided. This exercise simulates a war situation in which a strategic place needs to be defended against enemies. At the end of the exercise the training mines are swept.
- Offensive mining: in this kind of mining the enemy tries to put mines in front of the harbour (or target) of their enemy. The mines that are used can be much more sophisticated than the ones used for defensive mining. Sometimes they are adjusted in such a way that they are sensitive for one type of ship (all ships show different pressure waves or acoustics when they pass the water). The mine explodes when the specific ship moves over it. The mines can also be dropped by aircraft or by little fishing boats. This is all simulated during the exercises and afterwards the mines are swept (Cmdt. Morris pers. comm. 2003).

Responsibility: Navy → Exercises for putting, hunting and sweeping bottom mines: In the framework of training areas for mine sweeping in the North Sea, the Channel and the waters around the British Isles, two zones are situated on the BPNS.

The first zone (NB-01) is situated around the Westhinder sandbank and can be used by different types of ships of the Belgian Navy for individual or group exercises. The area is also used as a 'deep water zone'

by the mine hunting ships to practice the use of sonar, underwater vehicles and divers. Most ship movements can extend into the training area of exercise (4).

The other training zone (NBH-10) is situated around the Wenduine sandbank and can be used by mine hunting ships of the Navy from Belgium or other nations. This area is a 'shallow water zone' and can be used to gain experience in the use of sonar, underwater vehicles and divers in mining operations. Additionally the training area can be used to test and evaluate mine hunting systems. Due to manoeuvre characteristics of the mine hunting ships and weather conditions the ship movements can extend beyond the limits of the designated training area into a zone situated between the harbour of Oostende and the Wenduine sandbank. This training area is only very seldom used (Cmdt. Morris pers. comm. 2003).

The frigates of the Navy are equipped with anti-submarine warfare sonar. These produce 4000 – 5000 kHz to detect submarines and could have a negative effect on sea mammals and fishes.

Responsibility: Navy → Navigation:

The Navy is directly responsible for the exercise areas at sea. The Navy uses the existing navigation routes that are used by commercial vessels to get to their training areas at sea. No records are held of these tracks by the Navy, but should be included in the data (amount of passages through harbours by naval ships) provided by the use function 'Shipping'. The amount of passages can also be derived by checking the amount of military exercises at sea. In times of war secret war routes (Q routes) can be used. These can obviously not be documented in this report. The impact of shipping by naval ships will be minor since the speed of these ships (frigates: 16 knots cross speed; mine hunting ships: up to 15 knots) is much lower than that of commercial ships. (Cmdt. Morris pers. comm. 2003) This sub-use will not be investigated further, since it is dealt with in the description of the use function 'Shipping'.

Responsibility: Air Force → Search and rescue exercises:

The Air Force, located in Koksijde, performs training flights and rescue operations in the study area. These exercises are performed with Sea King helicopters. Maximum speed: 226 km/h. The helicopters must fly at 200 feet (~60.96 m) above the water level. In application of the Convention of Chicago (also known as ICAO: Convention on International Civil Aviation) the Air force (and more specifically the Sea King helicopters) is obliged to secure the rescue of victims of airplane crashes within Belgian's territorial boundaries. The helicopters can also be used to rescue people at sea. All these operations need to be rehearsed to gain experience. Since impacts coming from airspace traffic are not considered in the project, this sub-use will not be considered further. On average 100 search and rescue operations occur each year. At least one exercise is held per day and these exercises have an average duration of one and a half hours (40ste Smaldeel Koksijde pers. comm. 2003).

Responsibility: Air Force → Passage flights to training area outside study area (North Sea – territory of UK):

The Air force base at Kleine Brogel is responsible for test flights with F16 jets. But no exercises with F16-jets are done in the air space of the study area. The aircraft do fly above the BPNS, however, to get to their training area (above North Sea - territory of UK). The aeroplanes do not use fixed flying routes above the North Sea. All flight passages above the BPNS are restricted in breeding or migration times of birds (Cmdt. Morris 40ste smaldeel Koksijde pers. comm. 2003). Since the impacts of airspace traffic are not considered in this project, this sub-use will not be considered further.

Responsibility: cooperation of different NATO countries → Extensive naval exercises on mine defense:

Extensive international (NATO) large-scale naval exercises are held within the BPNS once every two years. The maritime squadron of NATO that is responsible for these exercises is the Mine

Countermeasures Force Northern Europe. During exercises it is usually composed of seven mine hunting ships and one commando ship. The exercises are permanently held in all European waters. Different countries participate in these mining exercises. The program consists of two phases: first a zone is delineated in which several training mines are placed (As discussed above, no explosive devices are detonated during training). Then the members of the different countries need to cooperate to locate and sweep the "mines". The mining exercises can be of the defensive or offensive type (see above).

Notes

- No exercises with depth bombs are organised in the study area since the water is not sufficiently deep to perform these exercises.
- Also no exercises with rocket launchers can be executed in the study area. These armaments are tested in the Caribbean waters.
- According to the different spokesmen of the military forces no plans exist for the designation/closure of (new) training areas (Cmdt. Morris and Adj. Debreyer pers. comm. 2003).

5.3 LEGISLATIVE FRAMEWORK APPLICABLE TO ALL SUBUSES

(updated by Cliquet A.)

(Cliquet et al. 2004 ; Maes and Cliquet 2005)

International legislation and Belgian implementation:

- United Nations Convention on the Law of the Sea, Montego Bay, 10 December 1982.
 - Implementation in Belgium:
 - Law of 18 June 1998 on the approval of the Convention on the Law of the Sea of 10 December 1982 and the Agreement relating to the implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982 of 28 July 1994, *BS* 16 September 1999.

The United Nations Convention on the Law of the Sea of 10 December 1982 assigns the authority for military activities in the territorial sea to the coastal state. This is in accordance with the sovereignty of the coastal state over the territorial sea. This allows the coastal state to execute fleet exercises, shooting exercises ... etc in the territorial sea. The right of innocent passage by foreign ships can be temporary cancelled by the coastal state in case the cancelling is indispensable to the protection of their safety, including military exercises. Such cancelling is only legal when it is announced in a suitable way (art. 25, § 3). The coastal state can also take measures to avoid the non-innocent passage of foreign ships through the territorial waters (art. 25, §1). Activities that are not included within the term 'innocent passage' are: exercises with weapons and the launching, landing or boarding of military equipment (art. 19, §2, b and f). Coastal states can voluntarily make exceptions to these articles with the aim of organising international NATO exercises in the territorial sea.

The principle of 'freedom of shipping' provides for the free movement of vessels on the high seas. Although this is not explicitly described in the Convention on the Law of the Sea, this freedom could also include the execution of military exercises. In any case its provision for the freedom of shipping includes the passage of war ships. The freedom of shipping is also valid in de EEZ. However, the coastal state has the right to take measures to protect the marine environment of the EEZ.

Several conventions limit the execution of certain military activities at sea.

- Convention concerning the banning of nuclear weapon tests in the atmosphere, in outer space and under water (Partial Test Ban Treaty - PTBT), Moscow, 5 August 1963.

In this convention the different parties agreed to stop the tests of nuclear weapons under water, including both the territorial sea and open sea.

- Implementation in Belgium:

- Law of 26 January 1966 on the approval of the Convention concerning the banning of nuclear weapon tests in the atmosphere, in outer space and under water, *BS* 20 April 1966

- Convention on the prohibition of the emplacement of nuclear weapons and other weapons of mass destruction on the seabed and the ocean floor and in the subsoil thereof, London, Moscow and Washington, 11 February 1971.

This Convention states that no strategic or nuclear weapons may be placed outside a sea area of 12 nautical miles from the coastline.

- Implementation in Belgium:

- Law of 18 August 1972 on the approval of the Convention on the prohibition of the emplacement of nuclear weapons and other weapons of mass destruction on the seabed and the ocean floor and in the subsoil thereof, *BS* 13 September 1973

National legislation:

- Law of 20 January 1999 on the protection of the marine environment in the marine areas under Belgian jurisdiction, *BS* 12 March 1999; as amended.

The limitations concerning the marine protected areas, described in the Law of 20 January 1999 on the protection of the marine environment in the marine areas under Belgian jurisdiction, are not valid for military activities (art. 7, § 4). The military authority, in accordance with the Minister of Environmental Affairs, will take all the necessary measures to prevent damage and environmental disturbance, without compromising the effective work of the defense units. There are also exceptions on the prohibition statements concerning the marine nature reserves made for military activities (art. 8, vi). Exceptions for military activities were also made on the limitations for shipping in marine protected areas (art. 20): the special routing system does not hold for war ships and marine assistance ships (art. 20, § 6). The report duty for captains involved in a shipping accident also doesn't hold for these ships (art. 21, § 3). In the sea areas certain activities are subject to a preceding license or authorization (art. 25), but military activities can only be subject to such license or authorization after a joint recommendation by the Minister, with authority on the protection of the marine environment, and Minister of Defense (art. 27). Furthermore, article 30 (§ 2) exempts military activities from compliance with environmental effects reporting and the environmental impact assessment.

- The legal coordinates of the zones for execution of the different sub-uses are given in Messages to Seafarers (Messages to Seafarers (Berichten aan Zeevarenden – BaZ), published by the Department of the Environment and Infrastructure, Administration Waterways and Maritime Affairs, Ministry of the Flemish Community). These coordinates are updated every year and announced before the beginning of a new year. The coordinates for 2003 are given below.

5.3.1 Legislative framework for shooting exercises directed seawards from the land

Description

There are three shooting sectors available:

- K-sector (small sector): the dangerous zone is comprised in a sector with a radius of 2.5 NM and with the lighthouse of Nieuwpoort as centre. The zone is confined by the 114° mark of the lighthouse of Nieuwpoort and the 191° mark of the old water tower of Westende (position: 51°10.14'N – 2°46.62'E).
- M-sector (medium sector): the dangerous zone is comprised in a sector with a radius of 7.5 NM and with position 51°08.62'N – 2°46.15'E as centre (confined by the same marks as the K-sector).
- G-sector (great sector): the dangerous zone is comprised in a sector with a radius of 12 NM and with the same centre and marks as the M-sector.

There are no limitations on the number of shooting exercises per year in this zone, but since these exercises cannot take place during the summer school holiday (extended to 15th of June until first week of September) and during weekends, the maximum number of shooting days is 175 days.

Legislation

Messages to Seafarers (Berichten aan Zeevarenden – BaZ), published by the Department of the Environment and Infrastructure, Administration Waterways and Maritime Affairs, Ministry of the Flemish Community 2001; 2002; 2003, www.lin.vlaanderen.be/awz/baz, consulted on 10 October 2003.

5.3.2 Legislative framework for shooting exercises at floating targets

Description

Shooting exercises, executed by the ships of the Navy, can be executed in the zone, confined by the following points:

- Point A: 51° 39,95'N - 2° 37,92'E
- Point B: 51° 36,95'N - 2° 37,92'E
- Point C: 51° 32,95'N - 2° 54,92'E
- Point D: 51° 38,95'N - 2° 56,92'E
- Point E: 51° 39,95'N - 2° 54,92'E

The shooting is executed from the southern limit (line A-B-C) in northern direction. The shooting area is not guarded. The surface exercises can be executed during night and day on a towed or anchored floating target.

There are no limitations on the number of shooting exercises per year in this zone. The zone can be used the whole year through.

Legislation

Messages to Seafarers (Berichten aan Zeevarenden – BaZ), published by the Department of the Environment and Infrastructure, Administration Waterways and Maritime Affairs, Ministry of the Flemish Community 2001; 2002; 2003, www.lin.vlaanderen.be/awz/baz, consulted on 10 October 2003.

5.3.3 Legislative framework for mining exercises

Description

Since 2001 an area has been delineated for the detonation of war ammunitions and training mines. This area is situated northeast of the anchorage area Westhinder. The zone has a radius of 4 NM and the centre is situated at position 51°29.07'N – 2°49.92'E. The zone is mostly used to detonate old war ammunitions that are found by navy ships or by fishing vessels or dredging boats. If necessary also other zones can be used for detonation. Special procedures need to be respected in such cases (BaZ no. 1, 1/13 – 2003).

There are no limitations on the number of detonations per year in this zone. The zone can be used the whole year through.

Flexibility:

Mining exercises can also be conducted in areas other than the one designated in BaZ, but only when emergency situations (accidental discovery of unexploded war ammunitions) evoke the immediate detonation of the mine. But the safety measures that need to be taken in such cases are also outlined in BaZ.

Legislation

Messages to Seafarers (Berichten aan Zeevarenden – BaZ), published by the Department of the Environment and Infrastructure, Administration Waterways and Maritime Affairs, Ministry of the Flemish Community 2001; 2002; 2003, www.lin.vlaanderen.be/awz/baz, consulted on 10 October 2003.

5.3.4 Legislative framework for putting, hunting and sweeping bottom mines

Description

Two training areas for the putting, hunting and sweeping of bottom mines are situated on the BPNS.

Zone NB-01 (Westhinder):

This zone is confined by the following points:

- Point A: 51° 28,85'N - 2° 44,92'E
- Point B: 51° 26,75'N - 2° 44,92'E
- Point C: 51° 26,75'N - 2° 35,52'E
- Point D: 51° 28,85'N - 2° 35,52'E

Zone NBH-10 (Wenduine) :

This zone is confined by the following points:

- Point A: 51° 20,55'N - 2° 55,42'E
- Point B: 51° 18,55'N - 2° 55,12'E
- Point C: 51° 18,65'N - 2° 53,52'E
- Point D: 51° 20,65'N - 2° 53,82'E

There are no limitations on the number of mining exercises per year in these zones. The zones can be used the whole year through.

Flexibility:

Movements of ships, executing mining exercises in zone NB-01, can extend into the training area of exercise (4) ('mining exercises').

Due to manoeuvre characteristics of the mine hunting ships in zone NBH-10 and weather conditions the ship movements can extend beyond the limits of the designated training area into a zone situated between the harbour of Oostende and the Wenduine sandbank.

Legislation

Messages to Seafarers (Berichten aan Zeevarenden – BaZ), published by the Department of the Environment and Infrastructure, Administration Waterways and Maritime Affairs, Ministry of the Flemish Community 2001; 2002; 2003, www.lin.vlaanderen.be/awz/baz, consulted on 10 October 2003.

5.3.5 Legislative framework for extensive naval exercises on mine defense

Description

The zones where these exercises are held are not predefined, but are announced by NATO before the exercises are held. One of the zones that can be used for mining exercises by NATO countries is the zone NBH-10 (Wenduine) described above.

Legislation

If NATO exercises are held in the Belgian part of the North Sea this is announced in Messages to Seafarers (Messages to Seafarers (Berichten aan Zeevarenden – BaZ), published by the Department of the Environment and Infrastructure, Administration Waterways and Maritime Affairs, Ministry of the Flemish Community 2001; 2002; 2003, www.lin.vlaanderen.be/awz/baz, consulted on 10 October 2003.).

5.4 EXISTING SITUATION

5.4.1 Existing situation of shooting exercises directed seawards from the land

5.4.1.1 Spatial delimitation

See legal coordinates (Map I.3.5a)

5.4.1.2 Intensity and frequency

The shooting sectors are reserved in advance from 8.00 AM until 17.00 PM, but usually the exercises do not comprise the whole time period. The reservation of such large time period is only done to make sure that no ships/aircraft pass through the sectors during the exercises. They can be cancelled when weather conditions are bad (too much wind or rain) or when the training staff is late. (Map I.3.5b)

Sector K and M are most intensely used; the G sector is only used 3 times a year on average.

In accordance to the frequency/intensity mentioned in jurisdiction (see above) the maximum number of shooting days is 175. The spokesman of the Army stated that on average 120-150 of this type of exercise are executed per year.

It is announced in BaZ when a certain shooting sector is reserved for exercises. The following overview (Table I.3.5a) gives the number of reserved days for 2001-2003 (these are the legally permitted amounts of shooting exercises for these years):

Table I.3.5a: Overview of the number of reserved days for shooting exercises directed seawards from the land.

	No exercises	K-sector	M-sector	G-sector	Total number of shooting days
2001	202	5	148	10	163
2002	196	33	118	18	169
2003	193	31	128	13	172

The actual amount of shooting days was given by the spokesman of the Army. Only data for 2001 were available (Table I.3.5b).

Table I.3.5b: Actual amount of shooting days (for shooting exercises directed seawards from the land) for 2001.

	No exercises	K-sector	M-sector	G-sector	Total number of shooting days
2001	278	0	78	9	87

This table shows that the actual amount of shooting days is much lower than the amount of days reserved in BaZ (only 53.37 %).

The next tables give an overview of the spreading of these exercises throughout the year.

Table I.3.5c: Amount of reserved days for 2001

2001	BaZ			
	0	K	M	G
January	13	0	18	0
February	11	0	17	0
March	11	0	20	0
April	20	0	10	0
May	12	0	19	0
June	16	0	14	0
July	31	0	0	0
August	31	0	0	0
September	15	0	5	10
October	11	0	20	0
November	15	5	10	0
December	16	0	15	0
Total	202	5	148	10

Table I.3.5d: Actual shooting days during 2001

2001	actually executed			
	0	K	M	G
January	20	0	11	0
February	22	0	6	0
March	16	0	15	0
April	30	0	0	0
May	19	0	12	0
June	19	0	11	0
July	31	0	0	0
August	31	0	0	0
September	16	0	5	9
October	21	0	10	0
November	29	0	1	0
December	24	0	7	0
Total	278	0	78	9

Table I.3.5e: Reserved shooting days for 2002

2002	BaZ			
	0	K	M	G
January	12	0	19	0
February	13	0	15	0
March	10	5	16	0
April	18	7	0	5
May	11	7	13	0
June	16	4	0	10
July	31	0	0	0
August	31	0	0	0
September	14	0	16	0
October	12	0	19	0
November	12	0	15	3
December	16	10	5	0
Total	196	33	118	18

Table I.3.5f: Reserved shooting days for 2003

2003	BaZ			
	0	K	M	G
January	11	10	10	0
February	8	0	20	0
March	15	0	16	0
April	18	5	7	0
May	13	3	10	5
June	17	0	13	0
July	31	0	0	0
August	31	0	0	0
September	13	0	12	5
October	8	5	15	3
November	12	3	15	0
December	16	5	10	0
Total	193	31	128	13

These tables show that the intensity of shooting exercises is highest in January, March, May and October.

Type of exercise:

Testing of new ammunition/weapons: 1 time in 2001

Training staff (shooting exercises): 87 times in 2001

No heat or infrared searching missiles can be used. There are no other limitations on the calibre of the ammunition. There is no information available on the constitution of the ammunition. On average 50000 pieces of ammunition are shot in one week (5 working days). For 2001, with a total of 88 shooting days this gives an approximate number of 880000 pieces of ammunition.

Ammunition:

For an overview of the weapons used in each shooting sector, see Table I.3.5g:

- Machine guns: calibre ammunition from 5.56 up to 30 mm
- Cannons: mortars up to 155 mm
- Rocket launchers (during "chaff and flare" exercises): missiles
- No bombs are used during the exercises

Table I.3.5g: Overview of the different weapons and their characteristics used in the different shooting sectors

Sector	Weapon	Maximum travel distance of ammunition	Ammunition calibre	Fire speed
K	- Collective infantry weapon (MAG)	0.6 km	7.62 mm	600-900/min
	- Anti-tank weapon (MILAN)	0.075-2 km	122 mm	-
	- Collective automatic weapon (MINIMI)	2.72 km	5.56 mm	400/min
	- Collective infantry weapon (Mortier 60 mm)	1.8 km	60 mm	18/min
	- Collective infantry weapon (Mortier 81 mm)	3 km	81 mm	18/min
M	- Collective weapon for air defense (Mi 50)	7.4 km	12.7 mm	450-500/min
	- Air target weapon – missile (MISTRAL)	5.4 km	90 mm	-
	- Collective infantry weapon (Mortier 120 RT)	8.17 km (up to 13 km with long-distance ammunition)	120 mm	10/min during 3 min
	- Collective infantry weapon (Mortier 4"2)	6 km	4"2	5/min
G	Artillery (Houwitzer GIAT LG 1 MkII)	14985 km	105 mm	12/min

No information is available on the frequency of the use of a certain weapon or ammunition, but this can roughly be extrapolated from the frequency of the sector used.

The intensity/frequency of the exercises is largely dependent on the supply of ammunition and on the subsidies assigned to a certain military unit.

The safety level during the shooting exercises is very high:

- Radar control to detect ships in sector
- Air control through images from airport of Oostende/Koksijde
- Target aircraft with GPS system to determine if it is not moving out of the used sector
- Radio connection with relevant airports/ships/pilotage

Source

Adj. Debreyer (pers. comm. 2003) and www.mil.be/def/index.asp?LAN=nl

5.4.2 Existing situation of shooting exercises at floating targets

5.4.2.1 Spatial delimitation

The exercises only take place in the assigned zones, described in BaZ. However, these zones change every year (Map I.3.5a).

5.4.2.2 Intensity and frequency

These exercises are infrequently executed. The training area is only used for military exercises (Map I.3.5b).

For the years 2001, 2002 and 2003 no data were reserved in BaZ. The spokesman of the Navy stated that in other years on average 3 exercises are held per year (with a maximum of 5 exercises per year) (Cmdt Morris pers. comm. 2003).

The exercises are held from frigates. These cause, when loaded, a water displacement of 2200 tons. The cruising speed is 16 knots (~ 30 km/h).

Ammunition:

Automatic cannon: calibre ammunition 100 mm.

Source

Cmdt. Morris (pers. comm. 2003)

5.4.3 Existing situation of mining exercises

5.4.3.1 Spatial delimitation

The exercises only take place in the assigned zones, described in BaZ. However, these zones change every year (Map I.3.5a).

5.4.3.2 Intensity and frequency

According to BaZ 15-20 explosions are executed per year. According to the Navy spokesman (Cmdt. Morris pers. comm. 2003) the number of exercise days is less than 10 per year. In 2001 there was a total of 10 training days. Next to these exercises detonations of recovered war mines can also take place. No data on the number of these explosions is available (Map I.3.5b).

The exercises are executed with frigates or tripartite mine hunting ships. The latter cause a water displacement of 560 tons when loaded. The maximum speed is 15 knots (~ 28 km/h).

Ammunition:

Machine guns: calibre ammunition 12.7 mm.

Source

Cmdt. Morris (pers. comm. 2003) and www.mil.be/def/index.asp?LAN=nl

5.4.4 Existing situation of putting, hunting and sweeping bottom mines

5.4.4.1 Spatial delimitation

The exercises only take place in the assigned zones, described in BaZ. However, these zones change every year (Map I.3.5a).

5.4.4.2 Intensity and frequency

This training area is only used on very limited occasions for military exercises. According to the Navy spokesman the maximum number of this type of exercises is 10 per year (on average 7 exercises a year). For the years 2001, 2002 and 2003 no data were reserved in BaZ (Map I.3.5b).

The exercises are also executed with tripartite mine hunting ships. These cause a water displacement of 560 tons when loaded. The maximum speed is 15 knots (~ 28 km/h).

Ammunition:

Machine guns: calibre ammunition 12.7 mm.

Source

Cmdt. Morris (pers. comm. 2003) and www.mil.be/def/index.asp?LAN=nl

5.4.5 Existing situation of extensive naval exercises on mine defense

5.4.5.1 Spatial delimitation

The zones where these exercises are held are not predefined, but are announced by the NATO before the exercises are held (Map I.3.5a).

5.4.5.2 Intensity and frequency

These exercises are held once in two years on the BPNS. The exercises have the purpose of training the staff in mine hunting and sweeping, with simulation of real war situations. No data is available on the duration of these exercises (Map I.3.5b).

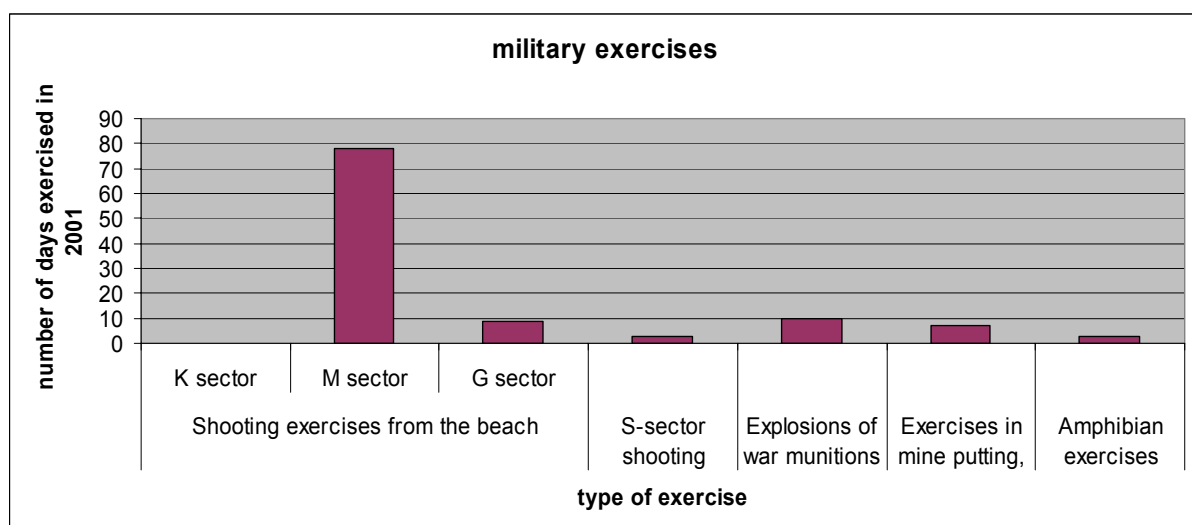
5.4.5.3 Summary of intensities of all sub-uses (where data are available) for the year 2001

The following table and graph give an overview of the number of exercises of each type for 2001 (where no data is available, the average number per year is used):

Table I.3.5h: Number of exercise days in 2001 of each sub-use within military exercises.

Type of exercise	number of days in 2001
Shooting exercises from the beach	0
K sector	0
M sector	78
G sector	9
S-sector shooting exercises with floating targets	3
Explosions of war ammunitions and training mines	10
Exercises in mine putting, hunting and sweeping	7
Amphibian exercises	3

Figure I.3.5a: Overview of the number of exercise days in 2001 of each sub-use within military exercises.



5.5 INTERACTIONS

5.5.1 Suitability for user

Details – if applicable – can be found in the chapter that is specifically dedicated to “Suitability”.

5.5.2 Impact on other users

Details – if applicable – can be found in the chapter that is specifically dedicated to “Interaction among users”.

5.5.3 Impact on environment

Details – if applicable – can be found in the chapter that is specifically dedicated to “Interaction between users and the environment”.

Biological

Mine explosions:

Mine explosions have a negative impact on the benthos, fish and sea mammals occurring in the mining zones (Baan et al. 1998). However, during exercises only training mines (not producing an explosion) are used, so impact can only occur when real war ammunitions are found and detonated on the BPNS.

Dropped ammunition:

There is a potential Impact of dropped ammunition on benthos, fishes... etc due to a change of substrate, danger of unexploded ammunition on the seabed, mechanical disturbance (abrasion, smothering) and pollution effects (Baan et al. 1998).

Acoustical disturbance:

Acoustical disturbance (Larkin 1996; Baan et al. 1998): influence of noise (due to shooting, ships and helicopters) on wildlife (birds... etc) is possible. The nature reserve ‘De Ijzermunding’ is situated near the shooting area of Lombardsijde. This kind of impact is unavoidable as the Belgian defense capacities need to be maintained, but can be partly diminished by good timing (exclusion of exercises in breeding times). Only a limited amount of the noise production will be transmitted in the water phase (mostly the lower frequencies). No information is available on the extent of disturbance by this kind of noise in the water, but it is generally assumed that the effects are minimal.

Chemical

Dropped ammunition:

Impact of dropped ammunitions on the chemical composition of the seabed: ammunition usually consists of heavy metals, but the constitution is different for the different types of ammunition. The heavy metals, present in ammunition, are mostly copper and lead, next to steel, aluminium, magnesium, chrome, molybdenum, potassium and vanadium. The 7.62 mm ammunition consists of 2 g copper and 7 g lead per bullet. Of other types of ammunition the constitution is not known. However, it is unknown how many 7.62 mm bullets are shot per year, so it is not possible to calculate the amount of copper and lead that enters the marine environment through military shooting exercises. It is known that copper leaches continuously out of the ammunition when entering the salty marine environment (2% leaching in one year). The total amount of copper entering the system this way will probably be much lower than the

amount coming from other sources, but can still have a local impact on the ecosystem. The leaching velocity of lead is much lower (0.0001 % per year), so this impact will be negligible. It is possible that the ammunition sinks in the sea bottom, without leaching, which could reduce the local impact. Ammunition that drops on the sea bottom can cause mechanical disturbance. This effect will be very small and negligible in case of single shooting exercises. The effect could be significant in places where ammunition used to be dumped (Baan et al. 1998).

Impact from associated shipping to exercise areas:

Since military ships are not obliged to follow the OSPAR Convention and the Marpol Convention (on prevention of pollution by dumping and discharges from ships at sea) pollution could be possible.

Geological/Physical

Solid waste pollution:

From dropped ammunition (Baan et al. 1998).

Real mine explosions:

Impact of real mine explosions on sediment (Baan et al. 1998).

Hydrological

Real mine explosions:

Temporary impact of real mine explosions on hydrology (Baan et al. 1998).

Impact from associated shipping to exercise areas:

The speed of the naval ships is low when compared to commercial ships (Cmdt. Morris pers. comm. 2003) so the impact on hydrology will be negligible.

5.5.4 Impact on socio-economy

Economic

Not available

Social

Employment:

No data on employment can be given for this use function, since the military exercises are only part of the training programme of the staff.

5.6 REFERENCES

Baan, P.J.A., Menke, M.A., Boon, J.G., Bokhorst, M., Schobben, J.H.M. and Haenen, C.P.L., 1998. Riscio Analse Mariene Systemen (RAM). Verstoring door menselijk gebruik. Rapport T1660.

Cliquet, A., Lambrecht, J. and Maes, F., 2004. *Juridische inventarisatie van de kustzone in België, 2^e update*. Studie in opdracht van de Administratie Waterwegen en Zeewezen, Afdeling Waterwegen Kust,

(Departement Leefmilieu en Infrastructuur, Ministerie van de Vlaamse Gemeenschap), Gent, Maritiem Instituut/Vakgroep Internationaal Publiekrecht, 88 p.

Larkin, R.P., 1996. Effects of military noise on wildlife: a literature review. Center for Wildlife Ecology, Illinois Natural History Survey.

Maes, F. and Cliquet, A., 2005. Codex wetgeving kustzone, Brugge, Vanden Broele, vol. 2.

Websites:

<http://www.mil.be/def/index.asp?LAN=nl>. Consulted on 23 October 2003.

Messages to Seafarers (Berichten aan Zeevarenden – BaZ), published by the Department of the Environment and Infrastructure, Administration Waterways and Maritime Affairs, Ministry of the Flemish Community 2001; 2002; 2003, www.lin.vlaanderen.be/awz/baz, consulted on 10 October 2003.