1984 has been a key year for Zeebrugge.

A brand new inner harbour became operational and four important enterprises settled there: a multipurpose terminal, a bulk terminal, a fruit-and-perishables terminal, a terminal for the handling of new motorcars...

It has been a swift and promising take-off.

Zeebrugge's possibilities as a multipurpose deep sea port are henceforth largely extended: not only the accessibility, but also, and none the lesser, the technical equipment of these transhipment enterprises belong to the finest examples in modern ports.

At the same time the works for the extension of the new outer port were continued perseveringly. The gigantic breakwaters are approaching their eventual shape and length.

New ro-ro facilities have been set afoot there. As a matter of fact, short sea ro-ro services crossing the North Sea have been booming in the latter months. For these traffics Zeebrugge is the continental number one.

Zeebrugge fosters other aspirations as well:
- as soon as a deep water quay becomes available in the new inner harbour, it will be possible to receive and handle bulk carriers drawing 55 feet there;
- in the new western outer port, two new docks should provide Belgium with a real "balcony" onto the sea, for the big container and ro-ro services first and foremost;
- the so-called Northern Canal should improve in a near future, our inland waterway links with our belgian hinterland, with Northern France and with the Rhine.

We thank the numerous people who have toiled - with superb expertise and stamina - for the extension of the port.

But we do not forget that the world of maritime transportation is changing continuously, and that the ports must follow these demands and changes closely.

Fernand Traen
President
1st December 1984
A New western breakwater
B New eastern breakwater
C Planned new docks
D LNG-terminal
E Working harbour
F P. Vandamme-lock
G Connection dock
H North inlet basin
I South inlet basin
J Transhipment terminal for bulk goods
K Widening of Baudouin Canal
L Green buffer area
M Projected Northern Canal
### Historical Synopsis

<table>
<thead>
<tr>
<th>Year</th>
<th>Month</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1877</td>
<td>November</td>
<td>“Over eene rechtstreeksche verbinding van Brugge met de zee” (On a direct link of Bruges with the sea) published by Baron A. De Maere-Limnander.</td>
</tr>
<tr>
<td>1891</td>
<td>March 25</td>
<td>Installation of the “Commission mixte de Bruges Port de Mer” (Mixed Committee Bruges-Seaport), which on invites designs for the construction of a seaport at Bruges with an outlet to the sea via Heist.</td>
</tr>
<tr>
<td>1892</td>
<td>March 31</td>
<td>Opening of the entries. Approval of the design introduced by Messrs. Coiseau and Cousin.</td>
</tr>
<tr>
<td>1892</td>
<td>November 24</td>
<td>Approval of the design introduced by Messrs. Coiseau and Cousin.</td>
</tr>
<tr>
<td>1894</td>
<td>June 1</td>
<td>Convention concluded between the Belgian Government, the City of Bruges and Messrs. Coiseau and Cousin for the construction of the harbour complex along the lines of their approved project.</td>
</tr>
<tr>
<td>1895</td>
<td>August 23</td>
<td>Approval by the Chamber of Representatives and by the Senate, of the above mentioned convention. Publication in the Official Gazette of the law concerning approval of the convention.</td>
</tr>
<tr>
<td>1895</td>
<td>September 6</td>
<td>Foundation of the “Compagnie des Installations Maritimes de Bruges” (now: “Maatschappij van de Brugse Zeevaartinrichtingen”, or in short M.B.Z.) the Bruges-Zeebrugge Port Authority.</td>
</tr>
<tr>
<td>1907</td>
<td>July 23</td>
<td>Official inauguration of the harbour complex by His Majesty King Leopold II.</td>
</tr>
<tr>
<td>1924</td>
<td>April 23/24</td>
<td>Establishment of the “Société Belgo-Anglaise des Ferry-Boats” (Anglo-Belgian Company of Ferry-Boats) and inauguration of the first trainferry service between Zeebrugge and Harwich.</td>
</tr>
<tr>
<td>1953</td>
<td>June 27</td>
<td>Opening of the trainferry terminal in the outer port.</td>
</tr>
<tr>
<td>1962</td>
<td>June 1</td>
<td>Call of the first Sinclair tanker. Inauguration of the Prince Philip Dock.</td>
</tr>
<tr>
<td>1966</td>
<td>March 16</td>
<td>Start of the first carferry service between Zeebrugge and Dover by Townsend Thoresen Car Ferries.</td>
</tr>
<tr>
<td>1970</td>
<td>March</td>
<td>Government decision in favour of the extension of the port of Zeebrugge.</td>
</tr>
<tr>
<td>1971</td>
<td>June 10</td>
<td>Official inauguration of the “Ocean Containerterminal Zeebrugge”.</td>
</tr>
<tr>
<td>1972</td>
<td>March 1</td>
<td>Start of the construction of the new sealock.</td>
</tr>
<tr>
<td>1976</td>
<td>September</td>
<td>Approval by the Government of the framework contract for the construction of the outer port.</td>
</tr>
<tr>
<td>1980</td>
<td>August 9</td>
<td>Government decision on the final dimensions of the outer port.</td>
</tr>
<tr>
<td>1983</td>
<td>November 8</td>
<td>First commercial sea-going vessel passes through the new sea-lock.</td>
</tr>
<tr>
<td>1984</td>
<td>April 10</td>
<td>Official opening and Christening of the new sea-lock as P. Vandamme-lock.</td>
</tr>
</tbody>
</table>
3.1 Legal basis

The Port of Bruges-Zeebrugge is managed and operated by the “Maatschappij van de Brugse Zeevaartinrichtingen” (M.B.Z.), under a joint concession from the Belgian State and the City of Bruges.

3.2 Structure of M.B.Z.

The M.B.Z., founded on November 25, 1895, has the legal status of a “limited company”; but in its quality of “institution of public utility”, it is a semi-official body and is placed under the supervision of the Minister of Public Works.

The highest authority is the General Assembly of Shareholders.
The board of Directors counts at least 5 and, at most, 15 members; two of them are appointed directly by the Belgian Government, two other directly by the City of Bruges; the remaining members are appointed by the General Assembly of Shareholders. Directors are appointed for a period of 6 years and are reeligible.

The Board elects a President among its members, who also acts as Managing Director.

Control by the Higher Authority is exercised by an Auditor of the Government (Ministry of Public Works) and by a Representative of the Minister of Finance.

The College of auditors is appointed by the General Assembly; it counts at least 3 and at most 5 members. Daily Management is performed by the President-Managing Director in collaboration with the General Manager and the Inspector-General, and assisted by the department heads.
NEED TO RETAIN PREVIOUS EDITION OF THIS CHART.

NORTH SEA

DOVER AND CALAIS TO ORFORDNESS AND SCHEVENINGEN

FROM THE LATEST INFORMATION IN THE HYDROGRAPHIC DEPARTMENT TO 1982.

Underlined figures express, as feet, Drying Heights above Chart Datum. All other Heights are expressed in feet since Mean High Water Spring.

NATURAL SCALE 1:250,000 (Lat. 61° 30'N)

Projection - Mercator

NEED TO RETAIN PREVIOUS EDITION OF THIS CHART.
3.3
Organization

General Assembly of Shareholders
(G.A.S.)

Board of Directors (B.D.)
2 appointed by the Belgian Government (*)
2 appointed by the City of Bruges (**) 
11 appointed by the G.A.S.

President - Managing Director : Fernand Traen**
Members :
Albert Claes, Jean Cousin,
André Decloedt**, Johan Demoen*,
Louis Gilles, Robert Jonckheere,
Jean Leclercq, Hendrik Olivier,
Robert Simoen*,
Philippe Van den Borre,
Marcel Vandewiele, Olivier Vanneste

Auditor of the Government
Eric Stroobants

Representative of the Minister of Finance
Frans Schenk

College of Auditors
(5 members, appointed by the G.A.S.)
André Goossens, Erwin Priem,
Emile Tytgadt,
Andries Van den Abeele,
Johan Van Oostveldt

Revisor
Ernest Couckuyt

Management
General Manager : Maurice Michiels
Inspector-General : Jan Eerdekens

Departments
Administration
Johan Kimpe, Assistant Adviser
Financial Department :
Raymond Valcke,
Administrative Secretary
Commercial Department and
Commercial Adviser
Public Relations :
Walter Faileyn,
Administrative Secretary for
Information
Harbour Master's Office :
René Van Havere,
Senior Harbour Master
Robert Creyne, Harbour Master
Technical Department :
Jean Decort, Adviser
Donald Duthieuw, Project-leader
Addresses

Head Office:
Louis Coiseaukaai 2
B-8000 Brugge
Tel. 050/44 42 11
Tlx. 81 201 porbrg b
Telegrams:
Ports Brugge B
V.A.T. 205.097.392
Register of Commerce: 95 Brugge

Harbour Master's Office:
P. Vandamme sealock building
Aartshertogin Isabellalaan 1
B-8380 Zeebrugge - Brugge 5
Tel. 050/54 32 40
050/54 32 33 (Port Control)
050/54 32 34 (Port Administration)
Tlx. 81 205 porzbg b

Sealock operations:
P. Vandamme lock:
P. Vandamme sealock building
Aartshertogin Isabellalaan 1
B-8380 Zeebrugge - Brugge 5
Tel. 050/54 32 31

1907 sealock:
Kapitein Fryattstraat 1
B-8380 Zeebrugge - Brugge 5
Tel. 050/54 40 12

Technical department Zeebrugge:
P. Vandamme sealock building
Aartshertogin Isabellalaan 1
B-8380 Zeebrugge - Brugge 5
Tel. 050/54 32 10

Mole gate watchmen:
Tel. 050/54 47 67

Swedish Quay gate watchmen:
Tel. 050/54 47 67

Slipway, Prince Philip Dock:
Tel. 050/54 62 64

Bridge "Herdersbrug" at Dudzele:
Tel. 050/59 91 73
4.1 Geographical position

Zeebrugge lies directly at the Belgian coast of the North Sea, 22.4 km West of the mouth of the Scheldt estuary, 10 km West of the Dutch-Belgian border.

Geographical coordinates (lighthouse Mole): 51°20'N - 03°12'E.

Administratively, Zeebrugge forms a part of the City of Bruges, in the Province of West-Flanders, the only Belgian province bordering the North Sea.

Bruges counts approx. 118,000 inhabitants, 5,000 of whom live in Zeebrugge.

4.2 Maritime access

Approach:
starts at A.1 buoy, 14 miles N.W. of the port (co-ordinates: 51°22'30"N, 2°53'30"E).
Fairways: "Het Scheur" - "Ribzand" - "Wielingen".

Access Channel:
"Pas van het Zand". beaconed:
4,600 m long, 500 m wide:
dept Z (-11 m) LLWS over a width of 300 m; direction NW-SE.

Tidal currents:
rising tide: direction SW-NE
average velocity: 2 knots
outgoing tide: direction NE-SW
average velocity: 2 knots

Tidal discrepancies:

- mean tide:
  - + 4.35 m at HW
  - 0.70 m at LW
  - + 4 m from 50 min before HW to 1.20 hr after HW
  - + 3 m from 1.40 hr before HW to 2.50 hr after HW
- spring tide:
  - + 4.70 m at H.W.
  - + 0.40 m at L.W.
- neap tide:
  - + 3.82 m at HW
  - + 1.05 m at LW

Wireless traffic:
059/70 24 38
- Ostend Radio for all messages
- VHF channel 16
- pilotage:
  - A1 buoy: VHF channel 6
  - Port entrance: VHF channel 9
- port control: VHF channel 13 & 71
- tugs: VHF channel 13

Lighthouses:
- port entrance (top Leopold II mole): uninterrupted white light; occultation: 15 sec (12 sec light, 3 sec darkness) visible at 25 kms;
- leading lights (indicating channel axis): two superposed fixed white lights, visible at 9.5 kms.
### 4.3 Port subdivision

<table>
<thead>
<tr>
<th>Semaphore:</th>
<th>Entrance prohibited</th>
<th>Departure prohibited</th>
<th>All traffic suspended</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Day</strong></td>
<td>• sphere ▲ cone p. up ▼ cone p. down ▼ cone p. down</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>▼ cone p. down ▲ cone p. up ▲ cone p. up</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>● sphere ▲ cone p. up ▼ cone p. down ▼ cone p. down</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Night</strong></td>
<td>▲ cone p. up ▼ cone p. down ▲ cone p. up ▼ cone p. down</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>○ white ● red ○ white ○ white</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>● green ▲ red ○ white ○ white</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>○ green ▲ white ○ green ○ green</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Pilotage:**
- from A1-light buoy (14 miles NW of the port; co-ordinates: 51°22'30"N, 02°53'30"E) or
- from Zand-1 buoy (entrance "Pas van het Zand")
- applications to pilot station "Wandelaar", via Ostend Radio, VHF channel 16
- addresses Pilotage Service:
  - Ostend: Sir Winston Churchiklaai 2, B-8400 Oostende
  - Tel. 059 - 70.77.01/02/03
- Zeebrugge: Loodswezenstraat 30 B-8380 Zeebrugge-Brugge 5 Tel. 050 - 54.50.72

**Towage:**
- from Zand-1 buoy
- permanently available:
  - 3 tugs, from 1,500 to 4,000 HP (bollard pull: 19 to 43 tons):
  - extra tugs available on request
  - applications to U.R.S.
    (address below), via Ostend Radio, VHF, channel 13 & 71.
- Address Towage Service:
  - Unie van Reddings- en Sleepdiensten (U.R.S.)
  - c/o Ruys & Co
  - Leopold II Mole 2 B-8380 Zeebrugge-Brugge 5
  - Tel. 050 - 54.42.60
  - Tlx. 81.332

**Salvage:**
- via Ostend Radio, VHF channel 13
- operated by U.R.S.
  (see Towage, above)

**Water salinity:**
- 1,025

The port installations of Bruges-Zeebrugge cover a total net area of 743 ha.

**The three main port areas are:**
- the outer port at Zeebrugge, 125.5 ha
- the inner port at Zeebrugge
- the sea canal (Baudouin canal) from the sea locks up the "Herdersbrug" (road bridge) at Dudzele, 297.5 ha
- the Baudouin canal (from the "Herdersbrug" at Dudzele to the lock at Bruges) and the inner port at Bruges (comprising the new industrial area "Herdersbrug"), 320 ha.
4.4 The outer port at Zeebrugge
(See map, page 16)

1 The Harbour Mole or Leopold II-mole, area 11 ha.

The outer port and the roadstead are protected by a concrete massive breakwater, with a quarter circle shape.
Total length : 2,487 m, of which 1,571 m of quayage, fronting the roadstead.
width : 74 m

### Quays

<table>
<thead>
<tr>
<th>Number</th>
<th>Length</th>
<th>Water depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>1, 2, 3</td>
<td>450 m</td>
<td>10 m LLWS</td>
</tr>
<tr>
<td>4, 5, 6 (partly)</td>
<td>375 m</td>
<td>9 m LLWS</td>
</tr>
<tr>
<td>7, 8, 9 (partly)</td>
<td>746 m</td>
<td>7.20 m LLWS</td>
</tr>
</tbody>
</table>

### Cranes : 10 electric travelling cranes

<table>
<thead>
<tr>
<th>Number</th>
<th>Lifting capacity</th>
<th>Reach</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>8 t</td>
<td>24.50 m</td>
</tr>
<tr>
<td>2</td>
<td>8 t</td>
<td>32 m</td>
</tr>
<tr>
<td>16</td>
<td>16 t</td>
<td>16 m</td>
</tr>
<tr>
<td>2</td>
<td>3 t</td>
<td>26.25 m</td>
</tr>
</tbody>
</table>

### Sheds : total area : 11,581 sq.m.

<table>
<thead>
<tr>
<th>Number</th>
<th>Dimensions</th>
<th>Floor area</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>25 x 25 m</td>
<td>625 m²</td>
</tr>
<tr>
<td>II</td>
<td>50.40 x 15 m</td>
<td>776 m²</td>
</tr>
<tr>
<td>IV</td>
<td>25 x 25 m</td>
<td>1,250 m²</td>
</tr>
<tr>
<td>V</td>
<td>115 x 20 m</td>
<td>2,300 m²</td>
</tr>
<tr>
<td>VI</td>
<td>125 x 30 m</td>
<td>3,750 m²</td>
</tr>
<tr>
<td>VII</td>
<td>90 x 32 m</td>
<td>2,880 m²</td>
</tr>
</tbody>
</table>

### Open air storage : approx. 4 ha

### Other installations :
- **Bunkering station** :
  - 5 tanks, total capacity 20,450 m³
  - (bunkering from lighter, however, is possible on all quays).
  - (see 6.10.1)

- **Gasfreeing station** :
  - (near bunkering station);
  - capacity 4,000 m³ in gaseous nitrogen (see 6.10.2)

- **Maritime station** :
  - equipped for the embarkation and disembarkation of cruise-ship passengers (hall, banking services, refreshment rooms, etc.);
  - restaurant (capacity : two rooms with approx. 100 persons each)

- **Tank storage for molasses** :
  - 10 tanks with a total capacity of 87,350 tons

- **Berths for tugs** :
  - 4 berths for tugs in stand-by at quays nrs 9 and 10.

2 The carferry terminals

Area : 12 ha (for extension, see 8.2.3)
Quay 5 : 1 private ro/ro terminal, with 2 berths
Technical description : see 6.2.2
Quays 10, 11, 12 : 2 public ro/ro berths
Quay 13 : 1 private berth
Technical description : see 6.2.3

3 The western Pier

Area : 18 ha.
Quay length :
- quay n° 13 : 90 m of connecting quays
- quay n° 14, 15 : 715 m (OCZ)
- quay n° 16 : 205 m (OCZ and waiting quay)
- quay n° 17, 18 : 400 m (OCZ)
- quay n° 18 : 195 m (terminal for refined oil products)
Total : 1,615 m, of which 1,525 m with a water depth of Z (-13 m) LLWS
Quay height : 8 m above LLWS
4.5 The inner port at Zeebrugge
(See map, page 18)

4 The Train Ferry Terminal (T.F.T.)
Area : 4 ha
Quay n° 19 : berth for trainferry ships
water depth : Z (— 6.70 m) LLWS.

5 The Short-Sea Container Terminal (S.C.T.)
Area : 9.5 ha
Quays n° 21, 22 : length 270 m;
terminal for charging/discharging container vessels
water depth : Z (— 7 m) LLWS
quay height : Z (+ 7.30 m) LLWS.

6 The Swedish Quay
Area : 12.4 ha
Quays : A, B, C
length : 825 m
water depth : Z (— 18 m) LLWS
quay height : Z (+ 8 m) LLWS
Includes SeaRo terminal (see 6.4)

Note:
The prince Albert Dock and the Tidal Dock form no part of the MBZ concession. They constitute the Zeebrugge fishing harbour which is managed and operated by the City of Bruges.
Address:
Stedelijke Vismijn,
Vismijnstraat,
B-8380 Zeebrugge-Brugge 5
Tel. 050/54 41 20

1 The P. Vandamme sealock
Length : 500.30 m between outer gates
width : 57 m
Sill depth : Z (— 15.00 m) LLWS
The water level in the inner port is at
Z (+ 3.50 m) LLWS ;
according to the level of the tide in the outer port, the usable water depth in
the lock varies between 15.00 and
18.50 m.
Every lock head is equipped with two steel sliding doors, meaning that a reserve-door is always available.
Both the sea-side and land-side heads are equipped with two drawbridges each, in order not to interrupt traffic along the coastal road.
The sealock, which has been named “Ridder P. Vandamme lock” after the late Burgomaster of Bruges and President of the Port Authorities, was officially opened on April 10, 1984, by Mr. Louis Olivier, Minister of Public Works.

2 The sealock 1907
Length : 210 m
Width : 19.70 m
Sill depth : Z (— 5.50 m) LLWS
The water level in the Baudouin canal is at Z (+ 3.50 m); according to the level of the tide in the outer port, the usable water depth in the lock varies between 5.50 and 9 m.

3 The connection dock
Total length : 3,200 m, from
P. Vandamme sealock to Baudouin canal.
Width : 210 m at sealock exit; widening
to 400 m in first section, 600 m in front
of east quay of North inlet basin, and
again 400 m in front of west quay of
same basin to Baudouin canal.
Depth : 18.50 m (Z (— 15 m) LLWS, +
dock level Z (+ 3.50 m) LLWS).

4 The North inlet basin
Length : 1,130 m + extension of 216 m
over width of 125 m at Northern part.
Width : 225 m at Northern end, 275 m
at Southern end
Depth : 14.00 m
Quays : East quay : 890 m along actual
basin + 216 m of extension (see below)
West quay : 1,130 m
North quay : executed as ro/ro-ramp
over width of 100 m
Extension : 647 m (of which 216 m on
east side, as prolongation of East quay,
216 m on west side, and 125 m on
North side).
Equipment : Cranes and lifting devices
Electric travelling cranes
2 8 T 32 m
2 8 T 32 m
16 T 16 m
Cargoeyors
General cargo grab crane
Container gantry
Sheds
See 6.7. and 6.9
Open air storage area : approx. 75 ha.

5 The Baudouin canal
Total length : 12.000 km
Length between the sealock to the
bridge at Dudzele : 5.350 km
Width at water surface : 70 m
Width at bottom : 22 m
Depth : 8.40 m = Z (— 4.90 m) + canal
level Z (+ 3.50 m), from km 12.000 to
km 10.000 (northern part of canal)
7.00 m temporarily from km 10.000
onwards (to Bruges inner port).
Quays, with a length of 450 m, in front
of the Coke and Glass works.
4.6  
The inner port at Bruges  
(See map, page 20)  

1  
The Baudouin canal  
Length between the bridge at Dudzele  
to the junction lock : 6.650 km  
Width at water surface : 125 m  
Width at bottom : 77 m  
Depth : 7.00 m temporarily  

2  
The East dock  
Length : 370 m  
Width : 90 m  
Depth : 8 m  

3  
The West dock  
Length : 550 m  
Width : 90 m  
Depth : 8 m  

4  
The Industrial dock  
Length : 1,080 m  
Width : 125 m  
Depth : 8 m  

5  
The junction lock  
Length : 115 m  
Width : 12 m  
Sill depth : 4 m  

6  
The turning area  
Length : 500 m  
Width : 175 m  
Depth : 8 m  

7  
The Prince Philip dock  
Length : 560 m  
Width : 200 m  
Depth : 8.40 m  

8  
The former Ferrydock  
Length : 500 m  
Width : 130 m  
Depth : 8 m
### 6 Equipment

#### Quays

<table>
<thead>
<tr>
<th>Number</th>
<th>Dock</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 2 - 3 (Quenastkaai)</td>
<td>East dock</td>
<td>389 m</td>
</tr>
<tr>
<td>4 - 5 (Kaap Hoornkaai)</td>
<td>East dock</td>
<td>228 m</td>
</tr>
<tr>
<td>6 (Albertakaai)</td>
<td>East dock</td>
<td>148 m</td>
</tr>
<tr>
<td>7 - 8 - 9 (Graaf Visartkaai)</td>
<td>West dock</td>
<td>315 m</td>
</tr>
<tr>
<td>10 - 11 - 12 - 13 - 14 (Julius Sabbekaai)</td>
<td>West dock</td>
<td>520 m</td>
</tr>
</tbody>
</table>

Total quay area: 35,000 m²
Total length of embankments (including quays): 13,080 m

#### Sheds

<table>
<thead>
<tr>
<th>Number</th>
<th>Dimensions</th>
<th>Floor area</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>150 × 15 m</td>
<td>2,250 m²</td>
</tr>
<tr>
<td>II</td>
<td>130 × 30 m</td>
<td>7,800 m² (two storeys)</td>
</tr>
<tr>
<td>III</td>
<td>60 × 30 m</td>
<td>1,800 m²</td>
</tr>
<tr>
<td>IV</td>
<td>50 × 30 m</td>
<td>1,500 m²</td>
</tr>
<tr>
<td>V</td>
<td>40 × 26 m</td>
<td>1,040 m²</td>
</tr>
<tr>
<td>VI</td>
<td>96 × 60 m</td>
<td>6,000 m²</td>
</tr>
<tr>
<td>VII</td>
<td>40 × 25 m</td>
<td>1,000 m²</td>
</tr>
<tr>
<td>X</td>
<td>20 × 30 m</td>
<td>600 m²</td>
</tr>
</tbody>
</table>

Total area: 21,990 m²
Open air storage area: approx. 25 ha

#### Cranes

<table>
<thead>
<tr>
<th>Number</th>
<th>Make</th>
<th>Lifting capacity</th>
<th>Reach</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>BM</td>
<td>5 t</td>
<td>32 m</td>
</tr>
<tr>
<td>2</td>
<td>BM</td>
<td>8 t</td>
<td>32 m</td>
</tr>
</tbody>
</table>
PORT FUNCTIONS

5.1
Port of call for various North Sea freight and passenger services, mainly to and from Great Britain and Scandinavia

Located at the sea-board, Zeebrugge is especially suited for all forms of modern, quick turn-round traffic. However, it is also a multi-purpose port and plays an important role in the Belgian economy. These functions vary widely.

More than:
- 160 sailings per week or 8,000 per year
- 7 million tons of cargo
- 2 million passengers.

Evolution

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of sailings</th>
<th>Cargo ($\times$ 1,000 t)</th>
<th>Passengers ($\times$ 1,000)</th>
<th>TEU's (number)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>2,750</td>
<td>1,805</td>
<td>498</td>
<td>± 92,000</td>
</tr>
<tr>
<td>1975</td>
<td>4,888</td>
<td>3,596</td>
<td>1,164</td>
<td>112,500</td>
</tr>
<tr>
<td>1980</td>
<td>6,085</td>
<td>5,414</td>
<td>2,305</td>
<td>108,200</td>
</tr>
<tr>
<td>1983</td>
<td>6,027</td>
<td>6,227</td>
<td>2,021</td>
<td>127,200</td>
</tr>
</tbody>
</table>

Regular services calling at Zeebrugge

<table>
<thead>
<tr>
<th>Zeebrugge-Harwich</th>
<th>Operated by</th>
<th>Number sailings</th>
<th>Type of service</th>
<th>Represented in Zeebrugge by</th>
</tr>
</thead>
<tbody>
<tr>
<td>British Rail</td>
<td>2 or 3 per day</td>
<td>Trainferry (freight and passengers)</td>
<td>B.E.V. der Ferry-Boats Tel. 050/54 47 91</td>
<td></td>
</tr>
<tr>
<td>Zeebrugge-Dover</td>
<td>Townsend Thoresen 13 per day (5 freight only)</td>
<td>Carferry (freight and passengers)</td>
<td>Townsend Belgium Tel. 050/54 50 50</td>
<td></td>
</tr>
<tr>
<td>Zeebrugge-Felixstowe</td>
<td>Townsend Thoresen 3 per day</td>
<td>Carferry (freight and passengers)</td>
<td>Townsend Belgium Tel. 050/54 50 50</td>
<td></td>
</tr>
<tr>
<td>Zeebrugge-Hull</td>
<td>North Sea Ferries 1 or 2 per day (second sailing freight only)</td>
<td>Carferry (freight and passengers)</td>
<td>North Sea Ferries (Belgium) Tel. 050/54 50 48 54 34 11 (from 1/4/85)</td>
<td></td>
</tr>
<tr>
<td>Zeebrugge-Oslo</td>
<td>Fred Olsen Lines 1 per week</td>
<td>Ro/ro (freight only)</td>
<td>Zeebrugge Transport Tel. 050/54 42 00</td>
<td></td>
</tr>
<tr>
<td>Zeebrugge-Harwich</td>
<td>British Rail 2 per day</td>
<td>container (freight only)</td>
<td>B.E.V. der Ferry-Boats Tel. 050/54 52 11</td>
<td></td>
</tr>
<tr>
<td>Zeebrugge-Chatham</td>
<td>Norfolk Line 6 per week</td>
<td>Ro/ro (freight only)</td>
<td>Cobelfret Tel. 050/54 53 12</td>
<td></td>
</tr>
<tr>
<td>Zeebrugge-Immingham</td>
<td>Cobelfret 6 per week</td>
<td>Ro/ro (freight only)</td>
<td>Cobelfret Tel. 050/54 53 12</td>
<td></td>
</tr>
<tr>
<td>Zeebrugge-Dagenham</td>
<td>Ford Motors Cy 2 per week</td>
<td>Ro/ro (vehicles only)</td>
<td>Zeebrugge Transport Tel. 050/54 42 00</td>
<td></td>
</tr>
</tbody>
</table>
## 5.2
**Base port for intercontinental container and ro/ro services**

### Regular deep sea services calling at Zeebrugge

<table>
<thead>
<tr>
<th>Operated by</th>
<th>Number of sailings</th>
<th>Ports of call</th>
<th>Represented in Zeebrugge by</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Australia/New Zealand</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A.N.Z.E.C.S.</td>
<td>every 10 days</td>
<td>Fremantle, Melbourne, Sydney, Auckland, Wellington, Lyttelton, Port Chalmers</td>
<td>C.G.M. Tel. 050/54 53 01</td>
</tr>
<tr>
<td>A.C.T./A.N.L.</td>
<td>every 10 days</td>
<td>Fremantle, Melbourne, Sydney, Auckland, Wellington, Lyttelton, Port Chalmers</td>
<td>A.Z.A. Tel. 050/54 52 01</td>
</tr>
<tr>
<td>A.B.C. Container Line</td>
<td>every 3 weeks</td>
<td>Melbourne, Sydney, Fremantle, Adelaide, Brisbane + U.S. Gulf Ports : New Orleans, Houston and Savannah</td>
<td>Zeebrugge Transport Tel. 050/54 42 00</td>
</tr>
<tr>
<td>ScanCarriers A/S</td>
<td>every month</td>
<td>Fremantle, Adelaide, Melbourne, Burnie, Sydney, Newcastle, Brisbane, Townsville, Auckland, Napier, Timaru and Jeddah</td>
<td>Best &amp; Osterrieth Tel. 050/54 51 06</td>
</tr>
<tr>
<td><strong>North America</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caribbean Islands Carol</td>
<td>every week</td>
<td>Bridgetown, Port-of-Spain, Willemstad, Oranjestad, Ponce, Rio Haina, Port-au-Prince, Kingston, Santo-Tomas-de-Castilla, Puerto Cortes</td>
<td>A.Z.A./C.G.M./A.M.M. Tel. 050/54 52 01 - 54 53 01 - 54 50 97</td>
</tr>
<tr>
<td>Streamline</td>
<td>every month</td>
<td>La Guaira, Cristobal, Puerto Cortes, Santo-Tomas-de-Castilla, Port Limon, Cartagena, Santa Maria</td>
<td>Best &amp; Osterrieth Tel. 050/54 51 06</td>
</tr>
</tbody>
</table>
Africa

Africatainers
S.N.C.D.V.

every 2 weeks
Abidjan, Apapa, Téma, Lomé, Cotonou, Douala, Libreville, Port Gentil, Pointe Noire
Zeebrugge Transport
Tel. 050/54 42 00

Woermann Linien
D.A.L.

every 2 weeks
Abidjan, Apapa, Téma, Lomé, Cotonou, Douala, Libreville, Port Gentil, Pointe Noire
Zeebrugge Transport
Tel. 050/54 42 00

East Asiatic Cy

every 2 weeks
Dakar, Freetown, Monrovia, Abidjan, Téma, Lomé, Lagos, Apapa, Douala, Las Palmas de Gran Canaria, Santa Cruz de Tenerife
Best & Osterrieth
Tel. 050/54 51 06

O.T. Africa Line AB

every 2 weeks
Dakar, Abidjan, Téma, Lagos/Apapa + other ports
Zeebrugge Transport
Tel. 050/54 42 00

Safcon (Saecs)

every 5 days
Durban, Port Elisabeth, Cape Town.
Zeebrugge Shipping & Bunkering Co
Tel. 050/54 42 61

Evolution of international container traffic

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of ships</th>
<th>Cargo (× 1,000 t)</th>
<th>Number of TEU's</th>
</tr>
</thead>
<tbody>
<tr>
<td>1975</td>
<td>198</td>
<td>404</td>
<td>± 40,000</td>
</tr>
<tr>
<td>1980</td>
<td>342</td>
<td>905</td>
<td>72,800</td>
</tr>
<tr>
<td>1981</td>
<td>366</td>
<td>1,005</td>
<td>88,800</td>
</tr>
</tbody>
</table>
### 5.3 Transhipment port for conventional general cargo

<table>
<thead>
<tr>
<th>Year</th>
<th>Tonnage of conventional cargo (× 1,000 t)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>172</td>
</tr>
<tr>
<td>1975</td>
<td>196</td>
</tr>
<tr>
<td>1980</td>
<td>196</td>
</tr>
<tr>
<td>1983</td>
<td>258</td>
</tr>
</tbody>
</table>

### 5.4 Passenger port, with a wide range of sailing possibilities to Great Britain
Also embarkation for international cruises

<table>
<thead>
<tr>
<th>Year</th>
<th>Passengers (× 1,000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>510</td>
</tr>
<tr>
<td>1975</td>
<td>1,170</td>
</tr>
<tr>
<td>1980</td>
<td>2,314</td>
</tr>
<tr>
<td>1983</td>
<td>2,023</td>
</tr>
</tbody>
</table>
6.1 Train Ferry Terminal (T.F.T.)

**Operation and Management:**
Belgisch-Engelse Vennootschap der Ferry-Boats

**Head Office:**
Montoyerstraat 17/19
B-1040 Brussel
Tel. 02/513 06 60
Tlx. 23 584 ferybo b

**Terminal Office:**
Loodswezenstraat
B-8380 Zeebrugge-Brugge 5
Tel. 050/54 47 91
Tlx. 81 201

**Area:** 4 ha
Water depth: Z (– 6.70 m)

**Description of the berth:**
- **Slope:**
  - length: 195 m
  - width: 25 m
  - inclination: 1%
  - equipped with two tracks
- **Loading ramp:**
  - length: 50 m
  - width: 9.60 m
  - inclination: 4%
  - max. load: 600 kg/m² (125 lbs/sq.ft)
- **Berth cage:**
  - semicircular; cross section 18.50 m,
  - with special provisions to safely accommodate train ferries for loading and unloading operations
- **Ships:**
  - max. length allowed: 163 m
  - max. width allowed: 18.50 m
  - normal draft: 4 m
- **Terminal area:**
  - parking for 250 cars.
  - Additional fenced area for a further 850 cars
- **Terminal building:**
  - office accommodation, terminal services and customs control.

---

6.2 Carferry terminals

6.2.1 Public Outer port terminal

**Operation and management:**
MBZ

**Head office:**
L. Coiseaukaai 2
B-8000 Brugge
Tel. 050/44 42 11
Tlx. 81 201

**Public Terminal Office**
Carferrybuilding, Doverlaan 7
B-8380 Zeebrugge-Brugge 5
Tel. 050/54 42 63

**Present Area:** 9.4 ha
(for extension, see 8.2.3.1)

**Description:**
- **Ramps:**
  - number: 2
  - length: 53 m
  - width: 53 m
  - max. load capacity: 400 kgs/m² (heavy articulated loads to a maximum of 60 tons with an axle load of 20 tons over 4 wheels)
- **Berths:**
  - number: 2, on both sides of a line of 6 dolphins with a diameter of 10 m, linked with a gangway
  - length: 145 m
  - water depth: Z (– 7 m) LLWS
- **Ships:**
  - max. length allowed: no limitation
  - max. beam allowed: 21.20 m with the ship’s axis in line with the ramp axis (ships of 33 m beam, however, can berth obliquely, or out of axis)
- **Bridge complex and jetty:**
  - each bridge moves between two bridge piers which serve as bases for the hoisting towers.
  - The jetty is protected by two buffer fenders (steel diaphragms of 7 by 10 m each, with two rubber "giant fenders").
  - Both main bridges rest on sliding hinges on the land side. They are slug in cables with counterweights and can always be lifted immediately, even during power cuts. The lifting speed is 0.20 m/sec.
  - The connection between the main bridge and the ship is by means of a drawbridge (length 4.50 m, width 3.32 m, which is lowered either directly onto the ship’s loading deck or onto an interposed pontoon (in case the ship itself is equipped with a drawbridge).
  - The ramps are controlled from the engine rooms by means of two closed circuit TV-cameras which show the position of the main bridge and the drawbridge.
  - The terminal area has a capacity of 600 cars and is divided into separate waiting lanes for incoming and outgoing traffic. The parking zone has a surface area of 5.9 ha (approx. 2,500 cars or 7,500 running metres of freight).
  - Handling of unaccompanied vehicles, containers and special cargoes can be done with tugmasters (5,800 cc) and fork lift trucks (ranging from 2 to 15 tons).
  - The terminal building (65 by 30 m, three storeys) contains office accommodation for the shipowning companies, ship agencies, shipping companies. Spacious, up-to-date accommodation ensures passenger comfort: waiting hall with video, restaurant and cafeteria (capacity 200 people), exchange, etc.
Main users:
Townsend Thoresen Car Ferries
Adress:
Townsend (Belgium) N.V.
Carferrybuilding, Doverlaan 7,
8380 Zeebrugge-Brugge 5
Tel. 050/54 50 50
Tlx. 81306

6.2.2
Private outer port terminal

Operation and Management:
North Sea Ferries (Belgium) N.V.
Leopold II dam - Môle
B-8380 Zeebrugge-Brugge 5
Tel. 050/54 50 48
(from 1/4/85: 050/54 34 11)
Tlx. 81322

Area:
Along the waterside 2 ha 63 a 58 ca on
which a terminal building of
47 × 24.8 m and checkpoint and building
accommodates a parking space of 150
Cars short and 50 cars long parking and
there are further possibilities to
increase upon request.
Besides 1,750 m² for parking small
rolling stock.
Handling of unaccompanied vehicles
and liftunits.
Unaccompanied trailers are towed by
9 tugmasters with a lifting capacity of
50 tons.
Containers, flats are carried on
slavetrailers which are available in
sizes 6 m, 9 m and 12 m.
Lifting by a mobile crane capacity
SWL 30,000 tons,
3 forklift trucks with capacities varying
from 7.5 to 30.5 tons.
With each lantern pole electrical
facilities for cooling or heating units
electrically.
The terminal building accommodates
the North Sea Ferries booking offices
and administration,
customs and immigration facilities.
Waiting halls and general facilities can
very comfortably accommodate 1,500
passengers per call per vessel.
The computer checking-in freight and
passengers is fully computerised.
The computer has direct links with
Rotterdam-Europoort, Hull, Ipswich
and Paris.
The terminal has rail connection.
Rolling stock can be handled via
mobile ramp.
Liftunits handled by the available lifting
gear.

Terminal area
The space along the waterside apart
from the checkpoints and building
accommodates a parking space of 150
cars short and 50 cars long parking and
there are further possibilities to
increase upon request.
Besides 1,750 m² for parking small
rolling stock.
Handling of unaccompanied vehicles
and liftunits.
Unaccompanied trailers are towed by
9 tugmasters with a lifting capacity of
50 tons.
Containers, flats are carried on
slavetrailers which are available in
sizes 6 m, 9 m and 12 m.
Lifting by a mobile crane capacity
SWL 30,000 tons,
3 forklift trucks with capacities varying
from 7.5 to 30.5 tons.
With each lantern pole electrical
facilities for cooling or heating units
electrically.
The terminal building accommodates
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and administration,
customs and immigration facilities.
Waiting halls and general facilities can
very comfortably accommodate 1,500
passengers per call per vessel.
The computer checking-in freight and
passengers is fully computerised.
The computer has direct links with
Rotterdam-Europoort, Hull, Ipswich
and Paris.
The terminal has rail connection.
Rolling stock can be handled via
mobile ramp.
Liftunits handled by the available lifting
gear.

6.2.3
Private inner port terminal

Description:
Area: 5.5 ha
• Bridge:
length: 24 m
width: 7.80 m
max. load: 60 tons in articulated
vehicles, with a max. of 20 tons per
axle
operation: from a fixed jetty
(the water level variations in the
Prince Philip dock, max. 0.70 m,
being absorbed by the ship's ramp).

• Ships:
max. length: unlimited
max. beam: unlimited
max. width of bow ramp: 8 m

• Terminal area:
divided into separate areas for freight
traffic (100 lorries and trailers and
50 passenger cars)

• Handling of unaccompanied
vehicles:
containers and special loads:
by means of tugmasters, forklift
trucks, tractors and a mobile crane of
30 tons.

• The terminal building (40 by 24 m)
comprises booking offices and adminis-
tration, customs offices and passenger
hall (capacity: 150 people).
### 6.3 Container terminals

#### 6.3.1 The Short Sea Container Terminal (S.C.T.)

**Operation and management:** Belgisch-Engelse Vennootschap der Ferry-Boats

**Head Office:** Montoyerstraat 17/19, B-1040 Brussel
Tel. 02/513 06 60
Tlx. 23 584

**Operations Office:** Loodswezenstraat B-8380 Zeebrugge-Brugge 5
Tel. 050/54 52 11
Tlx. 81 110

**Area:** 8 ha

**Description:**
- **Quays:**
  - length: 270 m
  - width: 53 m + 26 m handling area
  - waterdepth: Z (~ 7 m) LLWS
  - quay height: Z (+ 7.30 m) LLWS
  - two berths for container vessels
- **Gantry cranes:**
  - number: two
  - make: Peiner, with double headbeam
  - lifting capacity: 30 tons s.w.l.
  - length of the headbeam: 70.50 m of which 18 m overspan the water
  - intermediate width of headbeams: 15 m
  - portal height: 21.35 m
  - rail width: 31 m
  - max. lifting height above HHWS: 15 m
  - max. depth under LLWS: 6 m
  - max. reach beyond seaward fenderedge: 14 m
  - max. hoisting speed: 35 m/min.
  - max. speed of longitudinal travel: 50 m/min
  - spreader: dead weight: 9 tons
  - automatically adaptable to L.S.O.
  - container dimensions 20 ft, 30 ft, 40 ft.
  - railway tracks served by the cranes
  - number: four, parallel with the quay and under the cranes

**Further terminal equipment:**
- parking containers: two Peiner straddle carriers
- lifting capacity: 30 tons
- handling of special loads: fork lift trucks and tractors
- rail car shunting: ASEA shunting device (see 6.3.2)

#### 6.3.2 Ocean Container Terminal Zeebrugge (O.C.Z.)

**Operation and Management:** Belgisch-Engelse Vennootschap der Ferry-Boats

**Head Office:** Montoyerstraat 17/19, B-1040 Brussels
Tel. 02/513 06 60
Tlx. 23 584

**Operations Office:** New Yorklaan B-8380 Zeebrugge-Brugge 5
Tel. 050/54 52 71
Tlx. 81 277

**Area:** 18 ha
  - of which 17 ha for the actual terminal
    - (3.50 ha front quay, 13.50 ha rear quay, parking and buildings)
    - 1 ha for access railway yard

**Description:**
- **Quays:**
  - length: 1,420 m
  - West quay: 725 m + 90 m connecting quay
  - North quay: 205 m
  - East quay: 400 m
  - width:
    - front quay: 55 m
    - rear quay: 140 m average
  - height: 8 m above LLWS
  - water depth: Z (~ 13 m) LLWS
- **ASEA shunting system:**
  - Automatic remote control shunting of railway cars under the cranes
  - Avoiding use of locomotives.
  - This system is available on all four tracks; the crane driver (or quay personnel) can control the railcars on one or several tracks at will.

**Total length:** 1,124 m (4 x 281 m)
**Capacity:** 160 rail cars
**Terminal area:** 5 ha
**Capacity:** 2,200 TEU's
**Gantry cranes**

<table>
<thead>
<tr>
<th>Number</th>
<th>Lifting capacity (s.w.l.) (spreader with dead weight 10 tons not included)</th>
<th>Length of headbeam(s)</th>
<th>Outreach beyond fender</th>
<th>Backreach beyond quay</th>
<th>Width between headbeams</th>
<th>Width between legs</th>
<th>Rail width</th>
<th>Spreader width</th>
<th>Portal height</th>
<th>Max. lift</th>
<th>Max. depth below quay level</th>
<th>Max. hoist speed laden</th>
<th>Max. trolley speed</th>
<th>Longitudinal gantry speed</th>
<th>Rotation of the spreader</th>
<th>Occasional heavy lifts</th>
<th>Max. wind velocity when operating</th>
<th>Spreader: dead weight</th>
<th>Rail tracks served by the cranes</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>45 tons</td>
<td>104 m</td>
<td>37 m</td>
<td>23 m</td>
<td>14 m</td>
<td>16 m</td>
<td>31.50 m</td>
<td>12.20 m</td>
<td>26.00 m</td>
<td>25 m (over-all)</td>
<td>22 m</td>
<td>45 m/min</td>
<td>120 m/min</td>
<td>50 m/min</td>
<td>360°, 1 RPM</td>
<td>60 t</td>
<td>20 m/sec (7/8 Beaufort)</td>
<td>10 tons</td>
<td>number: 4, parallel to quay and under the cranes</td>
</tr>
<tr>
<td></td>
<td>30 tons</td>
<td>101 m</td>
<td>35 m</td>
<td>23 m</td>
<td></td>
<td>15.30 m</td>
<td>31.50 m</td>
<td>11.00 m</td>
<td>25.00 m</td>
<td>23 m above quay</td>
<td>16 m</td>
<td>45 m/min</td>
<td>150 m/min</td>
<td>50 m/min</td>
<td>360°, 1 RPM</td>
<td>45 t</td>
<td>25 m/sec (9/10 Beaufort)</td>
<td>10 tons</td>
<td>length: 3.020 m (4 x 755 m)</td>
</tr>
</tbody>
</table>

**Terminal area**

- Surface area: 3.50 ha for charging/discharging operations.
- Rear quay surface area: 10.50 ha, used as back-up area for the storage of containers (up to 10,000 TEU's), for the erection of various service buildings and sheds and additional service equipment, a.o.

- Consolidated Freight Station (C.F.S.):
  - Installations for chilled and reefer containers:
  - Sheds for stuffing and stripping of containers:
  - Sheds for repair and maintenance:
  - Transstainer area.

**Equipment for handling containers on the quay area**

- 10 straddle-carriers (6 Valmo, 4 Peiner) with a lifting capacity of 35 tons; can stack three high.
- 15 fork lift trucks (ranging from 2 to 30 tons):
  - 1 trailer tractor:
  - 2 tractors.

**Consolidated Freight Station (C.F.S.)**

- Covered sheds:
  - 4,000 m² with railsiding and out;
  - 7 loading bays for lorries;
  - 7 loading bays for containers:
  - Canopy of 1,000 m² for stripping and revanning of containers and for handling IMO cargo.

**Reefer installations**

**General**

Special care is paid to chilled and deep frozen container cargoes during their stay on the terminal.

Several hundreds of containers with perishable goods and deep frozen products can be maintained at the desired temperature.
2 Various reefer systems
a) mechanical chilling: containers are kept cool by cold air circulation. The system can be used for chilled containers and for deep-frozen products.
b) cryogenus chilling: the system uses liquid nitrogen. It can be used on deep-frozen products, either through direct injection into the cargo space, or by means of a cargo clip-on or cryo-tower unit. The latter alternative is also possible for chilled products.

3 Various container systems
• integrated containers: have a built-in chilling system, powered by a diesel-electro, an electo or a propane engine. Containers are usually stacked on deck and are connected to the ship’s engine or stand-by engines.
• porthole containers: are connected to a cold air-installation either on board of the ship or on-shore (static chilling system with liquid nitrogen of clip-on system powered by various energy suppliers).

4 Various reefer installations on O.C.Z. terminal
a) Mechanical systems.
• Wall systems, Grenco type: 24 slots. Wall systems are powered from a central engine room. Cold air circulates through pipes from air coolers on both sides of the engine room. Every separate pipe (with individual air cooler) can ensure the desired temperature, independent of the temperature in the other pipes. The systems comes in sets of 24, 48 or 72 container slots which can keep up a temperature between +13° C and -25° C.

b) Tower system, Holima type: 54 slots. Tower systems deliver chilled air for two containers in chain per tower or for three or four containers in chain if the towers are stacked two high. Fit for both chilled and deep-frozen products with temperatures varying between +13° C and -18° C.
• Clip-on system, Air Liquide type: 48 slots. Clip-on systems are used for chilling standard reefer containers. Fit for chilled and deep-frozen products.

b) Cryogenus systems
• Fixed stations: freeze-point type: 48 slots, by Air Products
cryo clip-on: 20 slots, by Air Products
Fixed stations with liquid nitrogen consist of a large, air tight insulated storage tank for liquid nitrogen with a pipe network for distribution (surface or subsoil) in combination with cryo-tower or cryclip-on systems (for all types of products) or with freeze points (LIN-injection with temperature control and LIN-injections at regular intervals) for deep-frozen products.
• Mobile stations: number of slots unlimited.
Mobile installations (liquid nitrogen dump charging): liquid nitrogen is injected at regular intervals with an adapted mobile unit. This system especially befits terminals where the number of reefer containers is highly fluctuating (as it needs no investment for a fixed installation) and where containers remain on the terminal for a limited time. Is used only for deep-frozen products.
6.4 Roll-on/Roll-off terminal

**Operation and Management:**
SeaRo nv
Zweedse Kaai
B-8380 Zeebrugge-Brugge 5
Tel. 050/54 63 77
Tlx. 81 983

**Area:** 12.40 ha
Parking space for 800 lorries or trailers

**Description:**
- Quays:
  - total length: 825 m
  - West quay: 725 m + 90 m
  - width: 120 m
  - water depth: Z (~18 m) LLWS
- Equipment for the berthing of Ro/ro vessels: SeaRo nv disposes of two link spans for Ro/ro interface.

6.4.2 MacGregor-Navire link span

The second link span was designed by MacGregor-Navire.

**Design criteria:**
- Tidal variation in quay height:
  - 8.00 m at MLW
  - 3.50 m at MMW
- Ship beams: 16 m to 21 m
- Ship ramp widths: 5 m to 16 m, axial ramps
- Design loads:
  - on shore ramp: 88 tonnes
  - on pontoon superstructure: 120 tonnes

**Pontoon:**
- dimensions: length 30.4 m (alongside quay)
- width: 19.5 m
- is kept afloat by four ballast tanks and seven void spaces; height-adjusted and trimmed by means of a passive ballasting system.

**Superstructure:**
- fixed ramp, 27.5 m long, providing a 1:10 incline leading to the shore ramp entrance; tapering in width from 18.5 m at landing end to 7.0 m at shore ramp end

**Ramp:**
- length: 40 m
- width: 7 m
- consisting of two-lane driveway coupled to a smooth-bottomed flap resting on the shore.

**Other equipment:**
- two railway tracks
- total length: 900 m
- terminal building with office accommodation for SeaRo nv terminal users and customs offices.

- Handling of unaccompanied vehicles, trailers, containers and special loads:
  - 1 mobile crane (40 tons)
  - fork lift trucks (5 to 30 tons)
  - trailers (up to 60 tons on 10% slope).

6.5 Combined road/rail traffic terminal

**Operation and management:**
T.R.W. (Transport Rail Weg)

**Head Office:**
Min. Vandenpeereboomstraat
Station West
B-1080 Brussels
Tel. 02/425 62 51
Tlx. 24 829

**Operations Office:**
Zweedse Kaai
B-8380 Zeebrugge-Brugge 5
Tel. 050/54 41 29

- Technique adopted in Zeebrugge:
  - vertical loading and unloading of the units (wheels of trailer removed for transportation, therefore decrease of volume and weight)

- Equipment on the terminal:
  - Autogrù Belotti (lifting capacity 40 tons) equipped with a special crane and four splitting arms which frame the units (frame dimensions: 4.87 m x 2.50 m x 3 m).
  - Containers can also be handled (with use of a spreader).

- Special rail cars used for combined traffic
  - length: 16.44 m
  - width of undercarriage: 2.98 m
6.6 Vehicles terminal

For new motor cars, a separate terminal was established in the inner port.
It comprises an intermediate pontoon (27 m by 13 m) and a parking area of 30,000 m² (285 m by 105 m) with a capacity of 2,500 cars, which is to be doubled soon.

Operation and management:
SeaRo nv
Zweedse Kaai
B-8380 Zeebrugge-Brugge 5
Tel. 050/54 63 77
Tlx. 81 983

6.7 Fruit and perishables terminal

Operation and management:
BNFW (Belgian New Fruit Wharf)
Head Office: Citroenweg 2,
B-2020 Antwerpen
Tel. 03/541 71 85
Tlx. 32 343

Operations office:
BNFW-North Sea division,
Nieuw-Zeeelandkaai,
8380 Zeebrugge-Brugge 5
Tel. 050/54 52 56

Area: 8.64 ha

Quays:
Length 400 m along East quay
Depth: 14.50 m

Sheds:
1. Shed of 142.90 m by 38 m,
area 5,430 m²
free height over all: 10 m
entrance gates: 6 m x 6 m
rail connection inside shed

2. Shed of 143.92 m by 38.26
area 5,506 m², fully insulated;
divided in two halves, one of which
with a free height of 10 m, the other
subdivided into four different
temperature controlled compartments
entrance gates: 6 m x 6 m

Equipment:
cranes: 2 electric travelling cranes
capacity 8 t with 32 m reach
or 16 t with 16 m reach
Facilities for continuous ship
unloading: 2, designed by PWH
capacity: 3,800 boxes of 22 kilos each
p.h.

6.8 Multipurpose terminal

Operation and management:
Combined Terminal Operators nv
(C.T.O.)
Leopold II-dam
B-8380 Zeebrugge
Tel. 050/54 44 16 (outer port)
050/54 54 64 (inner port)
Tlx. 82 119 (outer port)
81 608 (inner port)

Area: 17.8 ha (extendable)

Description:
- Quays: length 600 m + 50 m
Ro/ro berth on North corner, along
west quay of North dock in inner
harbour
width: 250 m
water depth: 14.50 m

Equipment:
- Electric travelling crane: 1, lifting
capacity 40 T at 25 m, 28 T at 36 m, 20
T at 50 m.
- Electric travelling cranes: 3, lifting
capacity 8 T at 32 m, 16 T at 16 m
- Other equipment: container lift
trucks, tugmasters, forklifts, etc...
Three railway tracks on quay, one of
which is especially equipped for bulk
handling.

Warehouses:
14,000 m² of covered sheds

Bulk handling:
- discharge pits for free
flowing products within one railway
track, connected to high capacity
convoy belt system for discharging
and loading of such bulk commodities
- bulk storage capacity
- bagging installation (bags of 25 to
75 kgs)
6.9 Terminal for bulk commodities

Operations and management:
Zeebrugge Behandelingsmaatschappij (Z.B.M.)
c/o Compagnie Belge de Manutention (C.B.M.)
Doornzelestraat 71
B-9000 Gent
Tel. 091/27 75 01
Tlx. 12 872
Operations office:
Amerikakaai,
B-8380 Zeebrugge-Brugge 5
Tel. 050/54 42 66

Area: 13.8 ha

Description:
• Quays: total length: 530 m
  width: 250 m
  water depth: 14.50 m

Equipment:
1 electric travelling crane, lifting capacity 20 T at 50 m and 28 T at 36 m, or 750 T/hr.
3 electric travelling cranes, (same as multipurpose terminal; see 6.8)
2 mobile cranes, capacity 750 T/hr.

6.10 Liquid storage terminals

6.10.1 For refined products

<table>
<thead>
<tr>
<th>Name + address</th>
<th>Number of storage tanks</th>
<th>Total storage capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Outer port</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zeetank nv</td>
<td>11</td>
<td>146,000 m³</td>
</tr>
<tr>
<td>New Yorklaan 12</td>
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<td></td>
</tr>
<tr>
<td>B-8380 Zeebrugge-Brugge 5</td>
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<td></td>
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<td>Tel. 050/54 46 12</td>
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<td></td>
</tr>
<tr>
<td>Tlx. 81 304</td>
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<td></td>
</tr>
<tr>
<td>2 Inner port</td>
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</tr>
<tr>
<td>Petrover nv</td>
<td>4</td>
<td>12,500 m³</td>
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<tr>
<td>L. Coiseaukaai</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B-8000 Brugge 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tel. 050/59 94 17 - 59 94 18</td>
<td></td>
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</tr>
<tr>
<td>Detavernier pvba</td>
<td>3</td>
<td>5,500 m³</td>
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<tr>
<td>L. Coiseaukaai 29</td>
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<tr>
<td>B-8000 Brugge 1</td>
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<td></td>
</tr>
<tr>
<td>Tel. 051/65 58 14</td>
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</tr>
<tr>
<td>Groep Rosseel</td>
<td>2</td>
<td>4,000 m³</td>
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<tr>
<td>L. Coiseaukaai 21</td>
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<td></td>
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<tr>
<td>B-8000 Brugge 1</td>
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<td>Tel. 050/33 99 14</td>
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<td></td>
</tr>
<tr>
<td>L. François</td>
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<td>3,500 m³</td>
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<td>Baron Ruzettelaan 308</td>
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<td>B-8320 Brugge 4</td>
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<tr>
<td>Tel. 050/35 51 51</td>
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<td></td>
</tr>
<tr>
<td>Traen Gebr. pvba</td>
<td>9</td>
<td>10,000 m³</td>
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<tr>
<td>Pathoekekeweg 50</td>
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<td></td>
</tr>
<tr>
<td>B-8000 Brugge 1</td>
<td></td>
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</tr>
<tr>
<td>Tel. 050/31 51 15</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
6.11
Various other facilities and services

6.10.2
For glues
Merckx nv
Head Office:
St. Janslaan 1,
B-1150 Brussels
Tel. 02/762 70 95
Tx. 21 521
Operations Office:
Loodswezenstraat 21,
B-8380 Zeebrugge-Brugge 5
Tel. 050/54 56 51
Storage capacity: 4,200 m³
(glues and other raw materials for timber industry)

6.10.3
For molasses
Tameco nv
Leopold II-Mole,
B-8380 Zeebrugge-Brugge 5
Tel. 050/54 43 18
Storage capacity: 29,700 m³

Head Office:
Tate & Lyle PLC
Sugar Quay
Lower Thames Street
London EC 3R 6DQ

6.10.4
For cereals
Borlim nv
Head Office:
Lanceloot Blondeellaan
B-8380 Zeebrugge-Brugge 5
Tel. 050/54 48 61
Storage capacity:
9 siloes, total capacity: 35,000 tons
Discharge capacity: 150 tons/hr
Loading capacity: 300 tons/hr
Shore and quay length:
total shore length: 160 m
actual quay length: 99 m

Dumingra
Pathoekeweg 32,
B-8000 Brugge 1
Tel. 050/31 51 61
Storage capacity:
2 siloes, 11,300 tons

H.E.L.B.
Krakeleweg 34,
B-8000 Brugge 1
Tel. 050/31 50 24
Storage capacity:
95 cells, 10,000 tons.

Voeders Huys
Krakeleweg 28,
B-8000 Brugge 1
Tel. 050/31 80 38
Storage capacity:
84 cells, 8,000 tons

WACO
Pathoekeweg 68a,
B-8000 Brugge 1
Tel. 050/31 80 08 - 016/24 26 43
Storage capacity:
34 cells, 15,000 tons

6.10.5
For L.P.G.
Zeegas
Marcus Gerardstraat 4,
B-8380 Zeebrugge-Brugge 5
Tel. 050/54 56 10
Two jetties for ships up to 13,000 m³ capacity
Shore storage capacity: 6,500 m³
(two tanks)

6.11.1
Bunker Station
Belgische Bunkeroliemaatschappij
Administrative Office:
Wetstraat 33.
B-1040 Brussels
Head Office:
Zeebrugge Shipping and Bunkering Cy.
Minister Beernaertstraat 9,
B-8380 Zeebrugge-Brugge 5
Tel. 050/54 42 60
Tx. 81 138
The bunkering station situated at the end of the mole delivers all grades of marine fuel.
Supplies can be effected directly ex-wharf (quays 1 and 2) or by barges and tank lorries throughout the port.
The depot is offering 24-hour service. Operators are Messrs. Belgische Bunkeroliemaatschappij.

6.11.2
Cleaning station
Euroservices nv
Minister Beernaertstraat 9
B-8380 Zeebrugge-Brugge 5
Tel. 050/54 42 61
Tx. 81 138
The nitrogen plant operated by Euroservices nv offers gasfreeing and cleaning facilities for liquid gas carriers.
The station is equipped with a ground flare and provides the necessary equipment to change grade in the shortest delay. 24-hour service is guaranteed (quay no 1).
6.11.3 Towage service
Unie van Reddings- en Sleepdiensten (U.R.S.)
Jordaenskaai 15,
B-2000 Antwerpen
Tel. 03/232 38 80
Tlx. 31 864

Represented in Zeebrugge by
Ruys & Co
Leopold II-Mole
B-8380 Zeebrugge-Brugge 5
Tel. 050/54 42 60
Tlx. 81 930

Tugs are permanently available in the port (quay 9):

6.11.4 Ships' maintenance and repair
Slipway on the transverse quay of the
Prince Philip Dock in the inner port at Zeebrugge.

Management : MBZ

Operated by :
nv Valcke Frères
Tijdokstraat 26,
B-8380 Zeebrugge-Brugge 5
Tel. 050/54 41 79
Tlx. 81 426

Actual maintenance of ships is done by the company commissioned by the shipowner.

Slope :
length : 248 m
width of the cradle : 17.50 m
capacity : ships up to 1,000 t

Transfer area :
length : 85 m
width : 25 m

Equipment :
tower crane :
lifting height : 30 m
max. reach : 30 m
lifting capacity :
1.8 t with jibs at 29 m
6 t with jibs at 11 m

Several ships can use the slope and the transfer area simultaneously.

Area of the adjacent grounds :
3.8 ha, which can be used by various ship repairers.

6.11.5 Transport zone
Management :
Transportzone Zeebrugge nv
Walram Romboutstraat 6
B-8380 Lissewege - Brugge 5
Tel. 050/54 54 29
Tlx. via 82 137

Area : 1st stage : 12.7 ha (extendable to 60 ha)
Purpose : Uniting of port linked and transportation linked activities

Amenities (partly under construction, partly foreseen) :
• direct connection with rail
• technical service centre
• administrative transport centre with
  • customs facilities
  • offices for port users
  • parking area
  • covered warehouses
  • open-air storage
7.1 Rail

Total railway length within the Bruges-Zeebrugge port area is 50,910 m, broken down as follows:

- Leopold II-môle 6,950 m
- OCZ 9,950 m
- SCT 5,020 m
- TFT 5,290 m

- Swedish quay and Fishing harbour : 3,170 m
- North dock inner harbour:
  - West quay 4,850 m
  - East quay 2,200 m
  - Connections 9,000 m
  (partly still under construction)
- Junction dock 4,480 m
  (under construction)

7.1.1 Location

All terminals for cargo transhipment in the outer and inner ports at Zeebrugge, as well as the passenger station in Zeebrugge, are connected with the international line n° 71 (London - Ostend - Bruges - Ghent - Brussels - Liège - Aachen - Cologne...) with junctions at Brussels to all important European destinations. Zeebrugge has been included in the networks of Interfrigo, Intercontainer, Interferry and T.R.W., who supply special custom-made rail cars, available on request. If necessary, special trains are put on with rail cars of one and the same type only (= block trains).

7.1.2 Main regular train services to and from Zeebrugge

T.E.E.M.-trains
(Trans-Europ-Express-Marchandises)
Transportation of bulk cargo, goods charged in isothermic or refrigerated cars or in large containers with regulated temperature and perishable goods.
Service speed : 85 to 100 km/hr.
Min average speed for the whole itinerary : 45 km/hr.

T.E.C.-trains
(Transport Européens Combinés)
T.E.C. trains provide the most rapid international transportation mode for large containers (from 20') and road vehicles (lorries and trailers).

Some of the main destinations, effective 6 times per week

<table>
<thead>
<tr>
<th>Countries and stations</th>
<th>Distance (kms)</th>
<th>Duration (hrs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Luxembourg</td>
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<tr>
<td>Bettembourg</td>
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<td>9</td>
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<tr>
<td>Netherlands</td>
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<tr>
<td>Rotterdam</td>
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<td>France</td>
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<tr>
<td>Thionville</td>
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<tr>
<td>St.-Louis</td>
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<tr>
<td>Paris</td>
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<td>West-Germany</td>
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<tr>
<td>Köln</td>
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<tr>
<td>Düsseldorf</td>
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<tr>
<td>Bologna</td>
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<td>Other</td>
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<tr>
<td>Budapest</td>
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<tr>
<td>Beograd</td>
<td>1,968</td>
<td>61</td>
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<tr>
<td>Great Britain (by trainferry Zeebrugge-Harwich)</td>
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<tr>
<td>London</td>
<td>115</td>
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<tr>
<td>Liverpool</td>
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<tr>
<td>Glasgow</td>
<td>639</td>
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</tr>
</tbody>
</table>
7.1.3  
Transport structure, especially for container transport

Domestic Traffic:
Dealt with by Belgian National Railways.
"Nationale Maatschappij der Belgische Spoorwegen, NMBS."

Head office
Frankrijkstraat 85
B-1070 Brussels
Tel. 02/523 80 80
Tlx. 25 035

Local office
N.M.B.S.
Stationsplein
B-8000 Brugge
Tel. 050/38 39 97.

Traffic between Belgian and Dutch ports:
Transport of large containers between Belgian (Antwerp, Zeebrugge) and Dutch ports (Amsterdam, Rotterdam) is dealt with by N.M.B.S. and Dutch Railways (NS).

International Traffic
Is co-ordinated by "Intercontainer", the International Company for Transport by Transcontainers, which is formed by the national railway companies of 23 European countries as well as the international company "Interfrigo". Intercontainer acts as a "Common Commercial Agency" which represents the railway companies of these 23 countries in international container transport.

Intercontainer puts on special container block trains (TECE) on certain lines; moreover, Intercontainer provides individual shipments which are normally routed through the networks of TEEM or TEC.

Intercontainer
Margarethenstrasse 38,
CH-4008 Basle
Tel. 41 61/22 25 25
Tlx. 62 298

Both for domestic and for international transport of transcontainers every shipper can negotiate individually with N.M.B.S. or Intercontainer.

To rationalize organization of container transportation throughout Europe, in particular by rail, the "Railtrans nv" company was established. It counts over 100 members (shippers, shipowners, non-vessel operators, road haulage companies, etc.) This company groups the members' shipments and intermediates between them and N.M.B.S and Intercontainer. This scheme ensures more advantageous transport conditions.

Railtrans nv
Zomerweg 26,
B-2030 Antwerp
Tel. 03/315 03 10
Tlx. 31 338

7.1.4  
Tariffs for container transport

British Rail/Freightliner

Tariff 3022
Is applicable for transport between Zeebrugge on the one hand and Harwich and all Freightliner terminals in the U.K. on the other, as well as for inland transport in the U.K. from all Freightliner terminals to Harwich and the adjoining sea voyage to Zeebrugge:

N.M.B.S. commercial management
Frankrijkstraat 85
B-1070 Brussels
Tel. 02/523 80 80

Belgisch-Engelse Vennootschap der Ferry-Boats
Montoyerstraat 17/19
B-1040 Brussels
Tel. 02/513 06 60
Tlx. 23 584

British Rail
General Representation
Rogierplein 23,
B-1000 Brussels
Tel. 02/218 74 25

Belgian Inland Tariff
(special tariff 0902)
Applies exclusively to transport of transcontainers between container terminals mutually, and between these terminals and any railway station in Belgium. The special tariff 0902 is a mileage tariff, influenced by the size of the container and the type of rail car used.

Information: All commercial agencies and railway stations of N.M.B.S. in Belgium.

Tariff 9574
Applies to transport between the Belgian ports of Antwerp and Zeebrugge, and the Dutch ports of Amsterdam and Rotterdam.

Intercontainer or General Transcontainer tariff 9145
Only applicable to international container transport.

The rates are not calculated according to mileage, but to link or service destination (the type of commodity and usually the weight of cargo of no importance). The freight rate depends on the size of the container and its gross weight, loaded or empty. The tariff is calculated in IUC-francs (average value of the member country currencies). Basically, this tariff is at par for container transport from the Benelux ports to destinations in Switzerland, Italy, Austria, Yugoslavia, Hungary and a large number of West-German landterminals. It applies only to international traffic; for inland traffic the national tariffs of the various countries are applicable.
7.2 Motorways

State road n° 905 (dual carriageway) Zeebrugge - Bruges (17 kms) links the port of Zeebrugge directly with the E5 motorway (exit 8 south of Bruges), which opens up Europe from North-West to South-East (Great-Britain to Italy).

The motorway interchange E5/E3 at Ghent (40 kms from Bruges) links up with the North-South axis of Western Europe (Scandinavia - Portugal).

Via the interchanges of other motorways with the motorways E5 and E3, any destination in Europe can be reached by motorway conveniently. At the motorway interchange (RW905/E5) at Bruges, State road n° 905 links up with the A17 motorway, which links the port with its immediate hinterland, and via the E3 (interchange at Kortrijk) with Lille and Paris.

Distances from Zeebrugge to some important European cities:

<table>
<thead>
<tr>
<th>Country</th>
<th>City</th>
<th>Distance (kms)</th>
<th>Via E-motorway</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Belgium</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ghent</td>
<td>55</td>
<td>E5</td>
</tr>
<tr>
<td></td>
<td>Brussels</td>
<td>120</td>
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</tr>
<tr>
<td></td>
<td>Antwerp</td>
<td>125</td>
<td>E5/E3</td>
</tr>
<tr>
<td></td>
<td>Liège</td>
<td>210</td>
<td>E5</td>
</tr>
<tr>
<td><strong>Netherlands</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Amsterdam</td>
<td>305</td>
<td>E5/E3/E10</td>
</tr>
<tr>
<td></td>
<td>Rotterdam</td>
<td>220</td>
<td>E5/E3/E10</td>
</tr>
<tr>
<td></td>
<td>Luxembourg</td>
<td>320</td>
<td>E5/E40</td>
</tr>
<tr>
<td><strong>Luxembourg</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lille</td>
<td>70</td>
<td>A17/E3</td>
</tr>
<tr>
<td></td>
<td>Paris</td>
<td>330</td>
<td>A17/E3/E10</td>
</tr>
<tr>
<td><strong>West Germany</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Aachen</td>
<td>260</td>
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</tr>
<tr>
<td></td>
<td>Köln</td>
<td>340</td>
<td>E5</td>
</tr>
<tr>
<td></td>
<td>Bremen</td>
<td>495</td>
<td>E5/E3</td>
</tr>
<tr>
<td></td>
<td>Düsseldorf</td>
<td>329</td>
<td>E5/E3/A57</td>
</tr>
<tr>
<td></td>
<td>Hamburg</td>
<td>600</td>
<td>E5/E3</td>
</tr>
<tr>
<td></td>
<td>Mannheim</td>
<td>526</td>
<td>E5/A61</td>
</tr>
<tr>
<td></td>
<td>München</td>
<td>853</td>
<td>E5/A61/E4/E11</td>
</tr>
<tr>
<td></td>
<td>Stuttgart</td>
<td>654</td>
<td>E5/A61/E12</td>
</tr>
</tbody>
</table>
7.3 Inland navigation

7.3.1 Zeebrugge - Brugge
Both ports are linked by the Baudouin Canal (for description, see 4.5 and 4.6) which gives access to the canal Ostend - Bruges - Ghent.

7.3.2 Link Bruges - Ostend
Via the canal in westerly direction
- canal width: 35 m
- water depth: 4.50 m

7.3.3 Link Bruges - Ghent and the complete network of Belgian and European waterways
Via the canal in easterly direction (navigable for inland water crafts up to approx. 900 metric ton, soon to be extended to 1,350 tons).

7.3.4 Estuary class inland water craft
Estuary-ships (which have a tonnage certificate both as sea-going vessel and as inland water craft) can call and leave at Zeebrugge via the Hont (Wester Scheldt) and the Flushing approaches.

7.4 Pipe-lines

Natural gas
Zeebrugge is connected to the European pipe-line grid.
At this moment, gas arrives from inland in the Zeebrugge peakshaving storage plant, situated in the inner port.
As from 1987, when the Zeebrugge maritime LNG terminal will become operational, the pipe-line networks will be used in a reversed direction.

7.5 Air links

7.5.1 Ostend Airport:
situated at 30 kms from Bruges and Zeebrugge. Especially suited for regular daily flights to the U.K. (Gatwick and Southend). Also charters and private business flights.

7.5.2 Brussels Airport:
at 120 kms from Bruges and 135 kms from Zeebrugge (to be reached via E5-motorway and Circular road R1 around Brussels) or by rail (1.5 hr ride). More than 50 air-line operators have landing rights at Brussels Airport. An average of 200 take-offs and landings take place every day, of which 80 % to and from European airports and 20 % to and from outside Europe. These flights are either direct or indirect via the closest transit airports of Amsterdam, Paris, London, Frankfurt.
PORT EXTENSION WORKS

8.1 Government decisions and evolution

Early 1970 the then Government decided to extend the port. This decision has been preceded by a feasibility study to build a new port for large ships either in the open sea or on the Belgian coast. The study had shown that preference should be given to the extension of a multi-purpose deepwater seaport at Zeebrugge.

The first decision included the construction of a big sealock, of an inner port (limited to 1,300 ha) and in principle, the extension of the outer port in order to ensure the access of the port and the sealock for large ships. The works for the sealock were commenced in 1972.

The detail decision concerning the construction of the outer port followed after thorough studies of all relevant aspects (hydraulics, nautical and sedimentological aspects and their environmental impact).

After these extensive studies the Government, in 1976, gave the order to start the work for the actual construction of the outer port.

The August 1980 decision was the final one in a series which is to give Zeebrugge its definitive future shape.

The definitive plan is composed of two main sections:

- the construction of a protected outer port reaching to greater sea depths;
- the construction and equipment of a new inner port completely alongside deep fairways, and accessible via a big sealock.

8.2 The new outer port

(See map, page 4)

8.2.1 Study and contracting

In 1976, after an international call, the Government passed a frame-contract for the construction of the outer port with the "Tijdelijke Vereniging Zeebouw-Zeezand (TVZ2)" (Temporary Association Sea Construction - Sea Sand), a group of contractors specialised in civil engineering water works. TVZ2 was charged with both the study of the project and its complete execution, in close cooperation with and under the supervision of the Ministry of Public Works, Direction of Waterways, Office of the Coast.

8.2.2 Schedule and timing of the works

The contract for the study and the execution of the works, proposed by TVZ2 and approved by the Government, has been subdivided into six subcontracts, scheduled between 1978 and 1985.

8.2.3 Description

The new outer port will be protected by two long breakwaters with a length of 4,450 m for the Western (A) and of 4,100 m for the Eastern (B) breakwater respectively. The shape and dimensions of this outer port follow from the so-called "Project 1,750 G" which was considered to be the most favourable; therefore, the outer port will extend 1,750 m into the sea beyond the existing outer port; the distance from the actual coast line to the breakwaters ends will be 3,300 m. Within this enclosure, a new port area of 350 ha will be reclaimed from the sea; it will be divided into a western and an eastern area which will have distinct functions.

Western zone

The extension length of this zone allows the construction of two inlet basins:

- the northern dock (C₁), most remote from other port facilities and specially protected, will be reserved for the handling of dangerous goods, specials, Imo, ...
- the southern dock (C₂) will specifically be constructed and equipped to deal with all modern modes of maritime transport and handling techniques for general cargo e.g. container- and ro/ro-vessels.

The length foreseen for the quays in this dock will be $2 \times 1,200$ m with a water depth of $Z (-16)$ m LLWS.

Its direct access and favourable location, modern equipment and spacious surface area of the adjacent quay grounds, will allow a considerable increase of the port's transhipment capacity. It will also enable to cope with future maritime transport and cargo handling developments.
8.3 Sealock and new Inner Harbour

The southern part of the new outer port area, between the Western breakwater and the Leopold II-môle, will be reserved for the extension of carferry terminal parking grounds. Along the Leopold II-môle additional berths for ferries will be built, using these parking areas.

Eastern zone
Following the Government decision of 1975 by which Zeebrugge was selected as port of discharge, storage and distribution for LNG, which will be supplied by ship, the national gas utility company Distrigaz decided to build its LNG-terminal (D) in this part of the outer harbour.

A plot of 40 ha, completely protected by the Eastern breakwater, was put at its disposal for this purpose. This terminal will include a discharging facility, storage tanks for liquid gas and a regazification plant.

The terminal is scheduled to become operational in 1987.

South of the area exists the working harbour (E) which is a special dock, used temporarily by the contractors for berthing all floating stock and equipment which they use on the port’s construction.

8.3.1 Study and contracting
The sealock and the inner harbour are built in accordance with a schedule decided in 1970. Each separate part of it is allotted through public tendering (lock, connection dock, northern and southern inlet basin).

The total service area of that new inner port will be 1,300 ha, of which 300 ha for docks and waterways, so that the net service area of the quay grounds will be 1,000 ha.

8.3.2 Sealock (F)
Along both sides of the access channel to the lock, new quay walls have been built:
- the Western quay (or Swedish quay) has a length of 825 m and is equipped with stilling basins with indented sill, in order to dissipate the energy of the incoming surf (see also SeaRo terminal 6.4);
- the Eastern quay will have a length of 500 m upon completion and will function as a waiting quay for ships.

8.3.3 The South inlet basin and adjacent quay grounds (I)
The southern part of the inner harbour (approx. 850 ha situated South of the Connection dock) is intended for transhipment of general cargo, bulk cargo and energy products and for the implantation of marine-oriented industries.

Planned docks
- the Southern inlet basin (I) has been planned with the following dimensions:
  - length : 2,500 m
  - width : 400 m
  - water depth : 18.50 m
- between the connection dock and the railway bridge at Dudzele, the Baudouin Canal will be widened (K) from 70 to 250 m, over a length of 4,150 m, and will be deepened to 17.50 m.

Rail and road connections are foreseen on all quays and adjacent grounds.

Existing and planned facilities

1 Gas peak shaving installation
Distrigaz nv built two natural gas storage tanks (capacity 114,000 m³) in 1978. During low consumption periods, natural gas is stored in liquid form. It is regazified and redistributed during consumption peaks.

2 Transhipment terminal for bulk goods (J)
Management and operation: Seabulk nv (established July 1980 with the participation of private and public bodies) with head office at: L. Coiseaukaai 2, B-8000 Brugge.

Site:
60 ha along the South bank of the Connection dock (600 m) and the West bank of the South inlet dock (1,000 m).
The surface area covered by the adjacent grounds for railtracks is 18 ha (length 1,500 m; width 120 m).
Quays:
- length: along the Southern inlet basin: 600 m (unloading quay)
- along the Connection dock: 250 m (loading quay)
- water depth: 18 m
- capacity:
  - unloading quay: ships of 125,000 tons
  - loading quay: ships of 80,000 tons

Quay grounds:
- Stage 1:
  - 40 ha for simultaneous storage of coal and other bulk
  - transhipment capacity: 8 million tons p.a.
- Stage 2:
  - 40 additional ha for doubling the storage and transhipment capacity.

Equipment:
- 2 gantries (capacity 50,000 tons of iron ore or 40,000 tons of coal per 24 hours)
- 3 stacker-reclaimers (capacity 5,200 m³ per hour as stacker, or 3,000 m³ per hour as reclaimer).

8.3.4 Other current projects

Ferry berths in the outer port
Along the Leopold II mole, additional berths for carferries will be built for which the recently reclaimed grounds between this breakwater and the new Western breakwater will serve as parking area.

- The first berth will be constructed along quay no 6. It will be equipped to accommodate twin-decked ships, in order to accelerate loading and unloading operations.
- Plans are now studied to equip the working harbour (E) with ro/ro-facilities.

Waterways
Northern Canal (M):
The Zeebrugge port extension is expected to result in a considerable increase in traffic.
Also to avoid the passage of large inland watercraft through the City of Bruges, consideration has been given to adapt the port’s waterways connections with the hinterland to the size of large inland watercraft and pusher convoys.
The “Northern Canal” plan envisages two stages:

- the adaptation of the Schipdonk canal to handle 2,000 ton inland watercraft between Zeebrugge and Merendree (junction with the Bruges - Ghent canal).
- the further adaptation of this section, to receive pusher convoys of 10,000 tons and its connection with the Terneuzen - Ghent canal.

This project will allow Zeebrugge to fully link up with the Scheldt - Rhine water transport system, of which it is the most southern port.
The 1982 setback was entirely due to the stoppage of crude oil traffic. Since 1968, Zeebrugge had been the port of importation of crude oil supplied to the Texaco refinery in the Ghent canal zone. This refinery was closed down in January 1982 (see also table 9.2.)
## 9.2 Traffic breakdown per commodity

<table>
<thead>
<tr>
<th>Commodities</th>
<th>1970</th>
<th>%</th>
<th>1980</th>
<th>%</th>
<th>1983</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1 General cargo</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td><strong>Roll-on/roll-off</strong></td>
<td></td>
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<td>Trainferry</td>
<td>343,805</td>
<td>3.6</td>
<td>450,025</td>
<td>3.2</td>
<td>443,484</td>
<td>4.3</td>
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<td>Carferry</td>
<td>491,756</td>
<td>5.2</td>
<td>3,881,616</td>
<td>27.3</td>
<td>4,495,541</td>
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<tr>
<td><strong>Subtotal</strong></td>
<td>835,561</td>
<td>8.8</td>
<td>4,331,641</td>
<td>30.5</td>
<td>4,938,925</td>
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<td><strong>Containers</strong></td>
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<td></td>
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<tr>
<td>European</td>
<td>962,404</td>
<td>10.1</td>
<td>1,083,035</td>
<td>7.6</td>
<td>1,178,370</td>
<td>11.4</td>
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<tr>
<td>Intercontinental</td>
<td>—</td>
<td>—</td>
<td>169,697</td>
<td>6.4</td>
<td>932,248</td>
<td>9.1</td>
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<tr>
<td><strong>Subtotal</strong></td>
<td>962,404</td>
<td>10.1</td>
<td>1,252,732</td>
<td>14.0</td>
<td>2,110,618</td>
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<tr>
<td>Other general cargo</td>
<td>142,192</td>
<td>1.5</td>
<td>169,697</td>
<td>1.2</td>
<td>258,024</td>
<td>2.5</td>
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<tr>
<td><strong>Total</strong></td>
<td>1,940,157</td>
<td>20.4</td>
<td>6,489,602</td>
<td>45.7</td>
<td>7,307,567</td>
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<tr>
<td><strong>2 Liquid products</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crude oil</td>
<td>5,408,103</td>
<td>56.9</td>
<td>4,531,344</td>
<td>31.9</td>
<td>31,964</td>
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<tr>
<td>Refined products</td>
<td>573,253</td>
<td>6.0</td>
<td>892,682</td>
<td>6.3</td>
<td>674,801</td>
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<td>Other liquids</td>
<td>349,223</td>
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<td>88,469</td>
<td>0.8</td>
<td>164,092</td>
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<td><strong>Total</strong></td>
<td>6,330,579</td>
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<td>5,512,495</td>
<td>38.8</td>
<td>871,653</td>
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<tr>
<td><strong>3 Solid bulk</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coal and coke</td>
<td>488,278</td>
<td>5.1</td>
<td>373,870</td>
<td>2.7</td>
<td>317,289</td>
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<td>Building materials</td>
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<td>7.6</td>
<td>1,781,643</td>
<td>12.6</td>
<td>1,640,900</td>
<td>15.9</td>
</tr>
<tr>
<td>Other solid bulk</td>
<td>29,697</td>
<td>0.3</td>
<td>31,872</td>
<td>0.2</td>
<td>167,092</td>
<td>1.6</td>
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<tr>
<td><strong>Total</strong></td>
<td>1,239,293</td>
<td>13.0</td>
<td>2,187,385</td>
<td>15.5</td>
<td>2,125,281</td>
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<tr>
<td><strong>Overall total</strong></td>
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<td>100.0</td>
<td>14,189,482</td>
<td>100.0</td>
<td>10,304,501</td>
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## 9.3 Evolution of transit traffic (in percentages)

<table>
<thead>
<tr>
<th>Year</th>
<th>Unloadings Import</th>
<th>Transit</th>
<th>Loadings Export</th>
<th>Transit</th>
<th>Total Imp./Exp. Transit</th>
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<tbody>
<tr>
<td>1970</td>
<td>82.0</td>
<td>18.0</td>
<td>32.6</td>
<td>67.4</td>
<td>73.6</td>
</tr>
<tr>
<td>1971</td>
<td>85.7</td>
<td>14.3</td>
<td>40.3</td>
<td>59.7</td>
<td>78.4</td>
</tr>
<tr>
<td>1972</td>
<td>86.2</td>
<td>13.3</td>
<td>48.3</td>
<td>51.7</td>
<td>79.8</td>
</tr>
<tr>
<td>1973</td>
<td>87.2</td>
<td>12.8</td>
<td>51.9</td>
<td>48.1</td>
<td>81.1</td>
</tr>
<tr>
<td>1974</td>
<td>86.4</td>
<td>13.6</td>
<td>43.7</td>
<td>56.3</td>
<td>78.0</td>
</tr>
<tr>
<td>1975</td>
<td>79.5</td>
<td>20.5</td>
<td>38.5</td>
<td>61.5</td>
<td>69.5</td>
</tr>
<tr>
<td>1976</td>
<td>82.8</td>
<td>17.2</td>
<td>39.5</td>
<td>60.5</td>
<td>73.0</td>
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<tr>
<td>1977</td>
<td>78.6</td>
<td>21.4</td>
<td>36.4</td>
<td>63.6</td>
<td>68.2</td>
</tr>
<tr>
<td>1978</td>
<td>79.2</td>
<td>20.8</td>
<td>36.0</td>
<td>64.0</td>
<td>68.7</td>
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<tr>
<td>1979</td>
<td>80.4</td>
<td>19.6</td>
<td>41.6</td>
<td>58.4</td>
<td>71.1</td>
</tr>
<tr>
<td>1980</td>
<td>79.5</td>
<td>20.5</td>
<td>40.0</td>
<td>60.0</td>
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<td>1981</td>
<td>77.7</td>
<td>22.3</td>
<td>42.0</td>
<td>58.0</td>
<td>67.8</td>
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<tr>
<td>1982</td>
<td>63.0</td>
<td>37.0</td>
<td>41.7</td>
<td>58.3</td>
<td>54.8</td>
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<td>57.5</td>
<td>42.5</td>
<td>43.2</td>
<td>57.8</td>
<td>51.6</td>
</tr>
</tbody>
</table>

## 9.4 Evolution of container traffic (in TEU's)

<table>
<thead>
<tr>
<th>Year</th>
<th>Number</th>
<th>Index (1970 = 100)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>92,400</td>
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</tr>
<tr>
<td>1971</td>
<td>84,800</td>
<td>91.8</td>
</tr>
<tr>
<td>1972</td>
<td>130,800</td>
<td>141.0</td>
</tr>
<tr>
<td>1973</td>
<td>126,200</td>
<td>136.0</td>
</tr>
<tr>
<td>1974</td>
<td>155,600</td>
<td>168.5</td>
</tr>
<tr>
<td>1975</td>
<td>152,500</td>
<td>165.0</td>
</tr>
<tr>
<td>1976</td>
<td>147,500</td>
<td>160.3</td>
</tr>
<tr>
<td>1977</td>
<td>180,200</td>
<td>195.0</td>
</tr>
<tr>
<td>1978</td>
<td>191,800</td>
<td>208.3</td>
</tr>
<tr>
<td>1979</td>
<td>190,000</td>
<td>205.6</td>
</tr>
<tr>
<td>1980</td>
<td>181,000</td>
<td>196.7</td>
</tr>
<tr>
<td>1981</td>
<td>222,200</td>
<td>241.5</td>
</tr>
<tr>
<td>1982</td>
<td>177,200</td>
<td>191.8</td>
</tr>
<tr>
<td>1983</td>
<td>205,000</td>
<td>221.9</td>
</tr>
</tbody>
</table>

## 9.5 Evolution of passenger traffic

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Passengers</th>
<th>Index (1970 = 100)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>510,500</td>
<td>100.0</td>
</tr>
<tr>
<td>1971</td>
<td>530,900</td>
<td>104.0</td>
</tr>
<tr>
<td>1972</td>
<td>701,600</td>
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</tr>
<tr>
<td>1974</td>
<td>884,400</td>
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<td>1975</td>
<td>1,170,300</td>
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</tr>
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<td>1976</td>
<td>1,344,200</td>
<td>263.3</td>
</tr>
<tr>
<td>1977</td>
<td>1,605,900</td>
<td>314.6</td>
</tr>
<tr>
<td>1978</td>
<td>1,732,800</td>
<td>339.4</td>
</tr>
<tr>
<td>1979</td>
<td>1,691,300</td>
<td>331.3</td>
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<tr>
<td>1980</td>
<td>2,313,800</td>
<td>453.3</td>
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<tr>
<td>1981</td>
<td>2,309,800</td>
<td>452.5</td>
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<td>1982</td>
<td>2,204,188</td>
<td>431.8</td>
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<td>1983</td>
<td>2,023,362</td>
<td>396.3</td>
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# USEFUL ADDRESSES

## Port Authority

**Brugge/Zeebrugge**

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<tr>
<th>Organization</th>
<th>Address</th>
<th>Telephone</th>
<th>Telex</th>
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<tbody>
<tr>
<td>Maatschappij van de Brugse Zeevaartinrichtingen n.v. MBZ</td>
<td>Louis Coiseaukaai 2, B-8000 Brugge</td>
<td>050/44 42 11</td>
<td>81 201</td>
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</tbody>
</table>

## National bodies

### Ministry of Public Works
- Direction of the Waterways Office of the Coast,
  - Vijfhuizenstraat 3, B-8400 Oostende
  - Tel. 059/50 19 61
  - Telex 81 604
- Public Relations (Regional Office)
  - Oude Gentweg 75C, B-8000 Brugge
  - Tel. 050/33 94 20

### Ministry of Finance
- Customs and Excise Office
  - Louis Coiseaukaai, B-8000 Brugge
  - Tel. 050/33 69 16
- Zeebrugge Customs Office
  - Aartshertogin Isabellalaan 1, B-8380 Zeebrugge-Brugge 5
  - Tel. 050/54 54 55

### Ministry of Communications
- Marine Administration & Sea Salvage Service
- Immigration Officer, Chief Pilot
  - Loodswezenstraat 30, B-8380 Zeebrugge-Brugge 5
  - Tel. 050/54 50 72

### Belgian Foreign Trade Office
- Regional Direction for West Flanders
  - Baron Ruzettelaan 35, B-8320 Brugge 4
  - Tel. 050/35 81 40

### Regional Development Authority
- (GOM - West-Vlaanderen)
  - Baron Ruzettelaan 33, B-8320 Brugge 4
  - Tel. 050/35 81 31

### State Police (Gendarmerie)
- Predikherenrei 3, B-8000 Brugge
  - Tel. 901 or 050/33 75 44
- Port Brigade Zeebrugge
  - Veerbootstraat 1, B-8380 Zeebrugge-Brugge 5
  - Tel. 901 or 050/33 75 44

### Belgian Railways (N.M.B.S.)
- Head Office:
  - Frankrijkstraat 85, B-1070 Brussel
  - Tel. 02/523 80 80
- Commercial Department
  - Station Brugge
  - Tel. 050/38 39 97
  - Station Zeebrugge
  - Tel. 050/54 50 27

### Employment Office
- Rijksdienst voor Arbeidsvoorziening R.V.A.
  - Spanjaardstraat 17, B-8000 Brugge
  - Tel. 050/33 52 03
  - Noordhinderstraat 12, B-8380 Zeebrugge-Brugge 5
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<th><strong>Municipal bodies</strong></th>
<th><strong>Private organizations</strong></th>
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<tr>
<td><strong>Government of West-Flanders</strong>&lt;br&gt;Burg 4,&lt;br&gt;B-8000 Brugge&lt;br&gt;Tel. 050/33 06 41</td>
<td><strong>City Administration Bruges</strong>&lt;br&gt;City Hall&lt;br&gt;Burg 12,&lt;br&gt;B-8000 Brugge&lt;br&gt;Tel. 050/33 07 46</td>
<td><strong>Chamber of Commerce and Industry</strong>&lt;br&gt;Ezelstraat 25,&lt;br&gt;B-8000 Brugge&lt;br&gt;Tel. 050 33 36 96</td>
</tr>
<tr>
<td><strong>Military Authority of West-Flanders</strong>&lt;br&gt;Kulpersstraat 21,&lt;br&gt;B-8000 Brugge&lt;br&gt;Tel. 050/33 44 17</td>
<td><strong>Tourist Information</strong>&lt;br&gt;Tourist Office&lt;br&gt;Markt 7,&lt;br&gt;B-8000 Brugge&lt;br&gt;Tel. 050/33 07 11&lt;br&gt;Tlx. 81 328</td>
<td><strong>Association Port of Zeebrugge Interests</strong>&lt;br&gt;APZI&lt;br&gt;Ezelstraat 25,&lt;br&gt;B-8000 Brugge&lt;br&gt;Tel. 050/33 49 68</td>
</tr>
<tr>
<td><strong>Municipal Police</strong>&lt;br&gt;Hauwerstraat 7,&lt;br&gt;B-8000 Brugge&lt;br&gt;Tel. 906 or 050/33 77 33&lt;br&gt;St.-Donaasstraat 6,&lt;br&gt;B-8380 Zeebrugge-Brugge 5&lt;br&gt;Tel. 906 or 050/33 77 33</td>
<td></td>
<td><strong>Seamen’s Club Zeebrugge</strong>&lt;br&gt;Duinpad 1,&lt;br&gt;B-8380 Zeebrugge-Brugge 5&lt;br&gt;Tel. 050/54 44 63</td>
</tr>
<tr>
<td><strong>Fire Brigade</strong>&lt;br&gt;Walweinstraat,&lt;br&gt;B-8000 Brugge&lt;br&gt;Tel. 900 or 050/33 10 10</td>
<td></td>
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</tr>
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**Emergency telephone numbers**

- **900**<br>General (accidents, catastrophes, etc.)
- **901**<br>State Police (Gendarmerie)
- **906**<br>Municipal Police
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