

## GLOSS Sea Level Data Archeology Project

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### GLOSS Data Archeology - Preliminary Questionnaire Return and Status

<u>BELGIUM</u>	
<b>1. PRIMARY INFORMATION</b>	
<b>Contact Name</b> <b>Address</b>  <b>Tel/Fax/E-mail</b>	Johan Verstraeten Afdeling Waterwegen Kust - Hydrografie Vrijhavenstraat 3 8400 Oostende Belgium  Tel +32(0)594247 Fax +32(0)510041 <a href="mailto:johan.verstraeten@lin.vlaanderen.be">johan.verstraeten@lin.vlaanderen.be</a>
<b>Location of the historic measurements</b> (station name, country name, if possible latitude/longitude) If possible a local map should be provided showing the location of the measurements within a port or harbour (we realise that sometimes the exact location may no longer be known).	Oostende, Belgium  51°14' 0"N, 2°55' 30"E (Different locations over the years, all within 5" N as well as E)
<b>Start and end dates of the measurements</b>	Tide registrations are documented from 1820. The oldest still available charts (copies) date from 1886. Tide registrations are considered reliable to modern standards (leveling, interruptions ..) after 1925.
<b>Are existing (i.e. probably later) data already available in computer form from this site? If so, for what dates?</b>	after 1980 : hourly data, high and low waters
<b>Is this site a GLOSS station, or are there existing data from this site in the PSMSL, UHSLC or other international data banks? (We can enter this field if necessary from our knowledge of GLOSS, PSMSL and UHSLC)</b>	PSMSL

<b>2. SUPPLEMENTARY INFORMATION</b>	
<b>Type of charts.</b> Manufacturer of the charts. Approximate size (cm x cm or inch x inch).	1878 - 1914 : 'zinc plates' 1952 - today : paper charts 52 x 59 cm
<b>Manufacturer</b> and description of the gauge itself.	1921 - 1933 : Barbier, Bénard et Turenne, Paris. Float gauge 1934-1940 : Systhème Parenthou , Bubbler gauge 1940 - 1943, 1945(?)-1952 : German gauge. Float gauge 1952 - 1976 : Munro. Float gauge 1976 - 1978 : OTT type X/43. Float gauge 1978 - today : OTT-Büsum R3/5. Float gauge
<b>Scale factor</b> (i.e. ratio of sea level in the ocean to that on the chart)	1878 -1914 : 1/30 1921 - today : 1/20
<b>Chart replacement frequency</b> (e.g. daily, weekly)	Weekly
<b>Quality of charts</b> (e.g. Is the pen trace thin and distinct, which is good, or fat or smudged, which is bad? Is the paper deteriorating? How much high-frequency variability is there in the pen trace from waves, harbour activity or seiching).	In general the pen traces are thin and distinct. Under stormy conditions the line can tend to be quite thick due to oscillations. Arrival and departure of ferries can be seen on the chart.
<b>How often were checks made on the gauge by a local observer?</b>	1921 - 1933 : daily 1952 - 1980 : weekly 1980 - today : weekly, with additional checks when the teletransmission suggests the tide gauge is not operating correctly.
<b>Is there corresponding data available from tide pole readings?</b> How frequent were they (e.g. daily, weekly) and are how are those readings recorded (e.g. in a book, marked on the chart)	When the charts are replaced, a tide pole reading is recorded on the chart. There are 2 gauges operating at the same site since 1952.
<b>Is there other detailed knowledge of the relationship between the zero of the chart readings, tide gauge zero, tide pole zero, heights of nearby benchmarks etc.?</b>	1878 - 1914 : The reference on a quay wall near a lock was discovered to be unstable in later analysis. 1921 - 1969 : approximately one levelling per 5 years. 1969 - 1993 : one levelling / 2 years 1993 - today : annual levelling (traditional + GPS since 1995)

## References

- J. LAUWERS. Les marées du port d'Ostende. Annales des Travaux Publics de Belgique. Août 1930.
- J. LAUWERS. Les marées des ports d'Ostende, de Zeebrugge et de Nieuwpoort. Annales des Travaux Publics de Belgique. Avril-Juin 1949.
- C. VAN CAUWENBERGHE. Overzicht van de tijwaarnemingen langs de Belgische kust. Periode : 1941-1970 voor Oostende, 1959-1970 voor Zeebrugge en Nieuwpoort. Tijdschrift der Openbare Werken van België. Nr. 4. 1977.
- C. VAN CAUWENBERGE. Overzicht van de tijwaarnemingen langs de Belgische kust. Periode : 1971-1980 voor Nieuwpoort, Oostende en Zeebrugge. Tijdschrift der Openbare Werken van België. Nr. 5. 1985.
- C. VAN CAUWENBERGE. Overzicht van de tijwaarnemingen langs de Belgische kust. Periode : 1981-1990 voor Nieuwpoort, Oostende en Zeebrugge. Infrastructuur in het Leefmilieu. Nr. 3. 1993.
- A. FREMOUT, Overzicht van de tijwaarnemingen langs de Belgische kust. Periode : 1991-2000 voor Nieuwpoort, Oostende en Zeebrugge. 2002. (under preparation)
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