

THE NAVAL PORT.

Shipbuilding Yards.

It has occasionally been reported that the Imperial Navy was about to take over the *Vulkan shipbuilding yard* and develop it into a regular dockyard for the fleet.

The formation of a dockyard seems most unlikely unless the lower reaches of the Elbe are considerably deepened, but it is possible that the yard may become a purely naval one, though no steps in this direction had been taken up to the end of July, 1914.

Aerial Bases.

FUHLSBÜTTEL. (See map 8B.)

There is an airship base at Hamburg situated in the suburb of Fuhlsbüttel.

At this place there is a large double shed for airships and two or three aeroplane hangars situated at a point about 6 miles due north of the head of the *Sandthor Hafen*.

OTTER.

There is another airship base situated about 1 mile W. of the small village of Otter and 16 miles S. of *Burtehode* which is not shown on map 8B.

At this point there are two double airship sheds built of wood with black roofs enclosed by a high green fence and wire entanglements.

In the enclosure there are workshops for repair and fitting of airships and several anti-aircraft guns.

Magazines.

There is a large powder magazine at Winterhude. It is $4\frac{1}{4}$ statute miles due N. of the center of the *Baken Hafen*. (See plan 15.)

Fleet Personnel on Shore.

There is a *Naval Observatory* at Hamburg which is under the direction of a rear admiral. The staff consists mostly of civilians, but the assistant director is a fregatten kapitän and one of the assistants is an oberleutnant of the Naval Reserve.

In addition to the above, there is a *commission for the inspection of vessels* building for the Imperial Navy.

This commission consists of a rear admiral (with a kapitänleutnant as flag lieutenant), a captain, and an oberstabsingenieur.

Army Garrison.

The 76th Infantry Regiment, which consists, in peace, of three battalions, is stationed at Hamburg.

In *Altona* there are stationed the 31st Infantry Regiment (three battalions), the Staff and 2nd Battalion of the 45th Artillery Regiment, and the 20th Foot Artillery Regiment (two battalions).

These troops belong to the 9th Army Corps, and this is commanded by a lieutenant general, who resides at *Altona*.

THE DEFENCES.

In 1906 it was reported that there were two 21 cm. (8.2 in.) guns mounted on the hill just behind the *Naval Observatory*, and that two more of the same caliber were mounted on the hill just behind the suburb of *Blankenese* (5 nautical miles below Hamburg).

It was also reported at the same time that there were three 15 cm. (5.9) guns near *Brunshausen* (16½ nautical miles below Hamburg).

No further report on this subject has been received, and it is considered most unlikely that there are any guns at or near Hamburg.

The report relative to guns near *Brunshausen* may refer to the fort at *Grauerort* (see page 47), which is only about 3 miles from *Brunshausen*.

HARBURG.

(See Inset Plan 14.)

Position and General Description.

Harburg is a small port on the left (south) bank of the *Süder Elbe*, and is 6 miles due south *Hamburg*.

It was originally only a small village round a castle, but Prussia, being desirous of sharing in the enormous trade of the Lower Elbe, built some basin and made a small harbor

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at this place in 1842, since when the harbour has been enlarged by the addition in 1906-8 of two new tidal basins, and again in 1910 by a third tidal basin. A fourth is projected.

APPROACHES.

There are three approaches to Harburg from the Lower Elbe. They are called the *Alte Süder Elbe*, the *Köhlbrand* and *Süder Elbe*, and the *Reiherstieg*.

Alte Süder Elbe.

This is only a very shallow channel, which leaves the main channel of the Lower Elbe near *Blankenese* (see page 49).

It is nearly dry at average L.W., and only 7 feet deep at M.H.W.S. The distance from its confluence with the main channel to Harburg is $8\frac{1}{2}$ nautical miles.

Köhlbrand and Süder Elbe.

This channel leaves the *Norde Elbe* opposite *Altona*, and is the main channel to *Harburg*, the distance from the *Norde Elbe* to Harburg being 5 nautical miles.

Its minimum depth is $21\frac{1}{2}$ feet at M.L.W.S., but dredging is in progress, and it is proposed to deepen it to $26\frac{1}{4}$ feet at M.L.W.S. on a width at the bottom of $262\frac{1}{2}$ feet.

Reiherstieg.

This channel has been canalized, and leaves the *Norde Elbe* S.W. of the entrance to the *Sandthor Hafen* at Hamburg. The distance along it from the *Norde Elbe* to Harburg is $4\frac{1}{2}$ nautical miles.

The least depth in the *Reiherstieg* is 9½ feet M.L.W.S., this depth extending over the whole of the channel, except a mile at the northern end, and is maintained by dredging.

LOCKS.

About 550 yards north of its junction with the *Süder Elbe* there are two locks, which lie about 110 yards apart, *i. e.*, about 55 yards on each side of the centre line of the canal, and the canal forks to them both N. and S.

The locks are both 361 feet long and $39\frac{1}{2}$ feet wide, but they differ in depths over the sills and in the approaches from the south.

The western lock has 9½ feet over the sill, and the approach from the southward is $11\frac{1}{4}$ feet deep at M.L.W.S., whereas the eastern lock has $12\frac{1}{4}$ feet on the sill and 13 feet in the approach at the same state of tide.

Distances.

The distance from the open sea (Outer Elbe Light Vessel) is:

| | |
|----------------------------|---------------------|
| Via Alte Süder Elbe | 77½ nautical miles. |
| “ Köhlbrand and Süder Elbe | 78 “ “ |
| “ Reiherstieg | 79 “ “ |

COMMERCIAL PORT.

The commercial port consists of a non-tidal harbour, called the *Binnen Hafen*, and three *Tidal Basins*.

The *Binnen Hafen* covers an area of about 62 acres, and consists of several basins.

The *Tidal Basins*, cover, in the aggregate, an area of about 51 acres.

Basins.

The *BINNEN HAFEN* consists of 12 basins—

The *Petroleum Hafen*—
Überwinterungs Hafen,
Verkehrs Hafen,
E. and W. Binnengraff,
Lotse Kanal,
Ziegelwiesen Kanal,
Holz Hafen,
Kaufhaus Kanal,
Hafen Kanal,

and the *E. and W. Railway Basins*.

These basins are entered from the *Süder Elbe* by means of two locks, the *Alte* and *Neue Schleuse*, the former being the western one.

By means of these locks the level of the basins is maintained at 5 feet above M.L.W.S. (on an average).

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PETROLEUM HAFEN.

This is an irregularly shaped basin, the greatest length and width of which are 960 feet and 540 feet, respectively.

It is entered from the Süder Elbe through the *Alte Schleuse*, a lock which is 143 $\frac{3}{4}$ feet long, 32 $\frac{1}{2}$ feet wide, and has a depth of 9 $\frac{1}{2}$ feet over the sill at M.L.W.S. (springs rise 6 $\frac{1}{4}$ feet).

It may also be entered by a canal, about 260 yards long, 120 feet broad, and 17 $\frac{1}{2}$ feet deep, from the *Verkehrs Hafen*.

The basin itself is 17 $\frac{1}{2}$ feet deep and has quays all round, these quays being about 5 feet above the mean water level of the basin.

There are some oil tanks on the southern quay, which is served by a branch of the railway.

ÜBERWINTERUNGS HAFEN.

This basin is an extension to the southward at the S.W. corner of the *Petroleum Hafen*.

It is about 735 feet long, and varies in width from 142 feet to 201 feet, the widest part being in the centre of its length.

It is 13 feet deep, and is used mainly by the Prussian Harbour Board for repair work and for laying up the dredgers, lighters, &c., in winter.

VERKEHRS HAFEN.

This, again, is an irregularly shaped basin lying to the south-eastward of the *Petroleum Hafen*.

It is entered direct from the Süder Elbe through the *Neue Schleuse*, a lock 229 $\frac{3}{4}$ feet long, 55 $\frac{3}{4}$ feet wide and with a depth of 12 $\frac{1}{4}$ feet over the sill at M.L.W.S.

It may also be entered by the canal joining it to the *Petroleum Hafen* (see above).

The sill of the *Neue Schleuse* is formed on the arc of a circle of 65 $\frac{1}{2}$ feet radius, so that the depth at the sides of the entrance is only 6 feet at M.L.W.S.

The basin has a maximum length and width of 1,320 feet and 890 feet, respectively, and is 19 $\frac{3}{4}$ feet deep. The widest part is at the southern end, and there are several rows of dolphins in the basin.

It is the principal commercial basin, and has stone quays all round standing about 5 feet above the mean water level of the basin. The southern quay is served by four branches of the railway.

E. AND W. BINNENGRAFT.

These are two basins opening off the northern end of the *Verkehrs Hafen*.

They both shoal towards their heads, where they are only 6 $\frac{1}{2}$ feet deep, the depth just inside the entrances being 11 $\frac{1}{2}$ feet.

The E. Binnengraft is 320 feet long and 102 feet wide, and is used for shipbuilding and repairing purposes.

The W. Binnengraft is an irregularly shaped basin, 656 feet long and 147 feet wide. It is also used as a repair and fitting-out basin.

LOTSE KANAL.

This is an elongated basin running in an West-North-Westerly direction from the S.W. corner of the *Verkehrs Hafen*.

It is 1,509 feet long, and approximately rectangular in shape, its mean width being about 205 feet, and its depth 19 $\frac{3}{4}$ feet.

It has stone quays on both sides and a branch of the railway runs on the northern quay.

A steel swing-bridge crosses it somewhat to the westward of the centre of its length.

ZIEGELWIESEN KANAL.

This is an elongated rectangular basin at right angles (to the southward) to the western end of the *Lotse Kanal*.

It is 951 $\frac{1}{2}$ feet long, 150 feet wide, and 19 $\frac{3}{4}$ feet deep, and has quays all round.

HOLZ HAFEN.

This basin lies at right angles (to the northward) to the western end of the *Lotse Kanal*.

It is irregular in shape, and 1,165 feet long, 123 feet wide (average), and 9 $\frac{3}{4}$ feet deep.

There is a steel swing-bridge across the entrance of this basin which carries a railway line.

KAUFHAUS KANAL.

This is a long rectangular basin running in a south by westerly direction from the junction of the *Verkehrs Hafen* and the *Lotse Kanal*.

It is 985 feet long, 75 $\frac{1}{2}$ feet wide, and 8 $\frac{3}{4}$ feet deep, and is used by river and canal craft only.

There is a swing-bridge across it near its northern extremity.

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HAFEN KANAL.

This is a canal running out of the S. E. corner of the *Verkehrs Hafen*. It is gnomonic in shape, and a swing-bridge runs across it near its entry into the *Verkehrs Hafen*.

It is 869 $\frac{1}{2}$ feet long, on an average 118 feet wide, and 16 $\frac{1}{2}$ feet deep, and has stone quays on both sides. On the northern quay runs a branch of the railway.

E. AND W. RAILWAY BASINS.

These two basins run in a west-southwesterly direction from the *Hafen Kanal*.

The E. basin is 1,083 feet long, 128 feet wide, and 14 $\frac{1}{2}$ feet deep, and the W. basin is 1,345 feet long, 128 feet wide, and 12 $\frac{3}{4}$ feet deep.

Both these basins have quays on both sides on which run branches of the railway.

THE TIDAL BASINS.

These three basins open direct onto the Süder Elbe at distances of 700 yards, 1,130 yards, and 1,600 yards W. N. W. of the *Alte Schleuse*. They are called *Hafens I, II, and III, Hafen I* being the eastern one. A fourth basin is projected to the westward of *Hafen III*.

They are all 328 feet wide and 26 feet deep, but differ in length, *Hafen I* being 1,771 $\frac{3}{4}$ feet, *Hafen II*, 2,050 $\frac{1}{2}$ feet, and *Hafen III*, 2,575 $\frac{1}{4}$ feet long.

At present the sides of these basins are sloping, with the exception of the southern half of the E. side of *Hafen I*, where there are stone quays. These are to be built, eventually, on all sides of the three basins, and the branches of the railway to serve these quays have been built.

There are rows of dolphins down the center of these three basins.

Quayage.

The length of quayage in the individual basins of the *Binnen Hafen* is not known, but the total quayage for this harbor is:

With railway service, 12,140 feet.

Without railway service, 14,765 feet.

In the *Tidal Basins* the only quayage is in *Hafen I*, the length of which is:

With railway service, 755 feet.

Lifting Appliances.

It is not known on which quays the various cranes are, but the following exist on the quays:

| Harbour. | Number. | Power. | Capacity. | Remarks. |
|-------------------|---------|------------|-----------------|---|
| | | | Tons. | |
| Binnen Hafen..... | 11 | Hand. | 1 $\frac{1}{2}$ | The greater number belong to the Prussian Harbour Authorities. Travelling cranes. |
| | 29 | Steam. | 15 | |
| | | Hydraulic. | 3 | |
| Hafen I..... | 9 | Electric. | | |

There is also a 30-ton privately owned steam floating crane, usually to be found in the *Binnen Hafen*.

Shipbuilding and Repair.

There are three small establishments which undertake moderate repairs to ships, engines, and boilers. They possess five slips for small vessels.

Communications.

BY SEA.

The ferries to *Hamburg* run six times daily. The steamship services are included under those of *Hamburg* in all statistical publications. They have, therefore, been included in the table on pages 63-68.

RAILWAYS.

Harburg is connected with *Hamburg* by rail over a bridge across the Süder Elbe about 500 yards to the eastward of the *Neue Schleuse*.

For railway connections, see under "Hamburg" and "Hadeln Land," pages 62, 43, and 44.

ROADS.

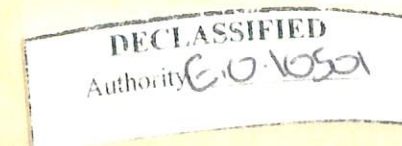
There is a road-bridge over the Süder Elbe about 300 yards to the eastward of the *Neue Schleuse*.

See also under "Hadeln Land—Communications," page 44.

TRAMWAY.

Harburg and *Hamburg* are connected by electric trams which run over the road-bridge.

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Telegraphs and Telephones.

Harburg is connected to the main telegraphic and telephonic systems, and the telegraph offices are at the post offices, of which there are three.

Coals, Stores, and Water.

There is a stock of not less than 1,500 tons of coal, but the position of the coal store is not known.

Ships' stores may be obtained in moderate quantities.

Water is supplied to vessels from hydrants on some of the quays, and there are floating water-tanks both in the *Binnen Hafen* and the *Tidal Basins*.

Oil.

Oil is stored on the south side of the *Petroleum Hafen*. The capacity of the tanks is not known.

Trade.

Harburg has a very large trade in vegetable oils, and in 1913 between 800,000 and 900,000 tons of these oils, valued at about 12,500,000*l*, were produced by the Harburg mills.

Coal (930,000 tons),* china clay (24,500 tons), and slates (9,100 tons) are the principal imports, and oil (*see above*), oil-cake (20,000 tons), and kainite (19,500 tons) are the principal exports.

Shipping.

The following table shows the number and tonnage of *British* vessels entered and cleared in 1911:

| | Number. | Entered. | Number. | Cleared. |
|--------------|---------|----------|---------|----------|
| Steam..... | 45 | Tonnage. | | Tonnage. |
| Sailing..... | 48 | 32,261 | 43 | 32,984 |
| | | 6,232 | 52 | 6,517 |
| | 93 | 38,493 | 95 | 39,501 |

The number and tonnage has increased largely in the last few years, the former by 30 and the latter by 250 per cent in 1913, but the exact figures and those of foreign entries and clearances are not available.

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* The figures given are for 1913.

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