2. Origins

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Abstract: Traditionally, local rulers and towns along the Rhine taxed Rhine shipping, regulated and monopolized it, and so caused an almost prohibitive increase in costs. Only the French liberalized Rhine navigation and limited tolls and taxes on barging during the final years of the 18th century. After the fall of Napoleon, it was feared that the old approach would return. As no one thought this was a good idea, the Conference of Vienna tried to regulate navigation on international rivers in general, and on the Rhine in particular, in a liberal manner. To guarantee free navigation on the river, the Congress founded the still-existing Central Commission for Navigation on the Rhine (CCNR). Rivalry between its then two most important members – Prussia and the United Netherlands – threatened this organization, but when Prussia became dominant from the 1830s onwards, liberalization was achieved. This was not, however, enough in this period, as Rhine navigation had to compete with another mode of transport, the railways. As a result, to keep barging intact, the complete normalization – the common term for canalization – of the Rhine was required. It was only after that, that the Rhine could be used for transport on a scale that made it possible to compete with rail transport. This article concerns the question of why the governments along the Rhine invested the enormous amount of money required to normalize the river and the role the CCNR played in this.

1. Introduction

In the 19th century, the Central Commission for Navigation on the Rhine (CCNR) evolved into a supranational agency that liberalized Rhine navigation and stimulated canalization. The CCNR created opportunities for inland navigation in a period when everywhere else railroads became dominant. The resulting low freight rates in the Northwest European transport markets improved the competitiveness of German industry along the
Rhine, Ruhr and Main rivers and strengthened the Port of Rotterdam in its competition with the Antwerp and German ports. The question that arises concerns how it is possible that a supranational agency became so influential in the century of the nation state. According to Luuk van Middelaar, it is essential for such an organization that sovereignty is handed over by introducing majority decisions. This will prop up the new state formation, which will act as a check on the anarchistic character of international politics. As majority decisions were only accepted on administrative topics within the CCNR, it failed as a supranational organization according to van Middelaar’s thinking. Robert Keohane, however, writes that there is no place for supranational institutions in a Realist world. The question of why they exist is ‘unanswerable if institutions were seen as opposed to, or above the state, but not if they were viewed as devices to help states accomplish their objectives.’ Power struggles dominate international relations, but supranational agencies create ‘the capability for states to cooperate in mutually beneficial ways’, thus ‘reducing the costs of making and enforcing agreements.’ They are therefore not a step towards new state formation, but tools with which to: make international politics more efficient, and economize on transaction costs. Supranational organizations do not change the division of power, but the decision-making process. As the member states need these organizations, they are bound by their regulations. This changes the process of international relations and thus its outcomes.

The question here concerns which theory best explains why, in a period when nationalism seemed to be prevailing, the CCNR became influential. Accordingly, whether the member states tried to diminish political insecurity by handing over authority must be considered. If they did, weak, fearful members should be supporters of this organization. If, however, the CCNR was fortified by the more powerful member states, it should be regarded as an instrument with which to rationalize the decision-making process in international relations. As the CCNR archives on the period are lost, it is only possible to consider these issues by examining earlier publi-

1 Klemann/Schenk, Competition (2013).
2 Middelaar, Passage (2009), 62ff.
3 Keohane, Institutions (1998), 85.
5 Keohane, Institutions (1998), 86.
The first century of the CCNR can be divided into three periods: the first, lasting until 1830, which was characterized by rivalry and a struggle for power, ended with the Act of Mainz (1831); the second, from 1831-1871, was defined by a growing Prussian influence and great efforts to liberalize the river from protectionist regulations and natural obstacles with German unification; and the third, from 1871-1914, was characterized by harmonic relations under German/Prussian dominance with the Great War.

2. Rhine shipping before 1815

If we are to understand why the CCNR was founded, the pre-1815 problems of Rhine shipping must be understood. Ever since the Peace of Westphalia (1648), German princes and city-states – the former always needing money, the latter claiming preferences – increased their autonomy. Consequently, taxation, regulation and discrimination broke up the most important inland transport route in Europe. Tolls, local regulations, discrimination and staples undermined traffic. In Cologne and Mainz, it was compulsory to sell all cargo sailing the river and use barges of local guilds on the next track. The legal basis for such obstacles and tolls was disputable, but the Reich was too weak to prohibit them. Every few years, the electors of the Rhine Valley – the bishops of Trier, Mainz and Cologne and the Count Palatine – sent representatives to a barging chapter – Schiffahrtskapitel – to discuss these problems. They could not resolve them, however, if only because they were just as greedy as their lower-ranked colleagues. Some contemporaries blamed Bremen, as using barges along the Weser and, from there, carts to Cologne, was cheaper than barging from Amsterdam or Dordrecht. The success of such inefficient routes was only explainable by taxes and obstructions. As a result, liberalizing Rhine shipping was already a topic at the Peace of Westphalia (1648), Rijswijk (1697) and Bas-

8 Gothein, Zollkongresse (1895), 363.
tadt-Baden (1714), but local interests counterbalanced good intentions. In 1699, in a conference of all the riparian states, liberalizing barging again proved to be impossible, as tolls were a major source of income for many of them.\textsuperscript{9} Returning transport to the Rhine again by also introducing road tolls failed as well, as there were too many alternative routes. In any event, such tolls increased freight rates even more. As a consequence, horse-drawn carts not only became 15-35\% cheaper than barging, but Rhineland products lost their competitiveness and French wine displaced its Rhine counterpart, to give just one example.\textsuperscript{10} Barging continued, but according to Dutch sources, only 60 barges a year crossed the border in the upstream direction in the late 18\textsuperscript{th} century.\textsuperscript{11} This is probably incorrect because, according to German sources, 1,300 Dutch ships were active in the lower Rhine area, sending colonial products worth 100 million guilders to Cologne annually. As total Dutch exports were worth over 100 million from only the mid-19\textsuperscript{th} century onwards, this seems to be an exaggeration. As some contemporaries have written, very little is known about Rhine shipping in this period. It is a fact, however, that it faced many obstacles, but never completely collapsed.\textsuperscript{12} Indeed, the situation only changed after the French Revolution.

According to the 1792 verdict of the revolutionary \textit{Conseil Exécutif}, any obstruction of trade was against natural law. Consequently, after the 1794 conquest of the left bank, diplomats from revolutionary France begged for the liberalization of barging. After the 1802 collapse of the Second Coalition, Paris used its power to realize these principles and, in 1804, the waning German Empire was forced to accept a charter that handed authority over Rhine navigation to a General Director with supranational influence. This General Director would collect a new tax that replaced all tolls between the Swiss and Dutch borders.\textsuperscript{13} Eliminating the staples in the now French-ruled cities of Mainz and Cologne was out of the question, however, as that would result in serious opposition. More-
over, Paris did not want to support the Dutch ports. Indeed, new French canals dug in Northern France and recently acquired Belgian territories were intended to circumvent the Netherlands. As a result, shipping duties were two and half times as high between the Dutch border and Cologne as on the upper-Rhine tracks. Moreover, as the staples survived as Stations de navigation, Dutch barging was limited to Cologne. There, it was no longer compulsory to sell, but it was to still tranship, all the cargo sailing on the river, thereby splitting the Rhine into a collective German-French track as well as a Dutch version. Nonetheless, shipping became cheaper. After Napoleon’s absorption of the Netherlands, a lower tax also replaced the tolls on the track to the sea in 1811. Nonetheless, times were hard for barging, as the Continental System undermined overseas contacts.

According to the 1804 charter, the river was a common French-German waterway. Barging was regulated by a supranational organization, and an international court dispensed justice in cases of conflict. In 1815, after Bonaparte’s collapse, the banks of the Rhine were again split between eight sovereign states, and it was feared that old obstacles would return. The Vienna Congress, however, attempted to protect the liberal principles of the 1804 charter. Accordingly, the CCNR was expected to regulate navigation without discrimination, keep tolls low and guarantee that the riparian states would maintain tow paths and channels in a good condition. Two hundred years later, the CCNR’s objectives are somewhat similar: it must uphold free navigation without discrimination and monitor uniform technical regulations. In 1815, however, the member states – Bayern, France, Nassau, Baden, the Grand-Duchy of Hesse, Prussia and the Netherlands – feared for their sovereignty or needed Rhine tolls to balance their budgets. Consequently, it took some time before these principles were accepted.

14 Wolterbeek, Proeve (1854), 39-41; Soénius, Selbstverwaltung (2009), 152f.
15 4 Oktroivertrag, 25 augustus 1804, 15 August 1804; 7.2. Februar, 11. Mai 1805; Meidinger, Ströme (1861), 3.
16 Hashagen, Rheinlande (1917), 30; According to Spaulding, shipping flourished in Düsseldorf however; see Spaulding, Patterns (2013).
17 Thiemeyer/Tölle, Supranationalität (2011), 180f.
19 There were two Hesses: the Grand-Duchy, also referred to as Hesse-Darmstadt, and the electorate, also known as Hesse-Kassel. Only the Grand-Duchy was a Rhine state, while Hesse-Kassel bordered the Main, not the Rhine.
3. The long way to Mainz (1815-1831)

In 1813, just after his arrival in the country, the Sovereign Prince (later King) of the Netherlands, William I, re-introduced all pre-1811 tolls. To prevent a general return to a regime modified by minor princes and local interests, the 1814 Paris Peace Treaty ordered that barging should be free from where the river became navigable to the sea. Taxation should also be limited to the costs of maintaining channels and tow paths. The Vienna Congress was to decide how to implement these principles.\textsuperscript{20} As a result, the Congress Commission for Free River Navigation invited all Rhine states to participate. In the same period, the Congress gave Westphalia and Rhineland to Prussia. At the time, this seemed to be more of a burden, as these territories were not only Catholic and strongly influenced by revolutionary ideas, but also made Prussia a buffer against France. It was only when industry crystallized around its coal-fields that the new provinces proved to be major booty.\textsuperscript{21} A few days after these decisions were made, the River Commission terminated the staples of Mainz and Cologne.\textsuperscript{22} Prussia accepted this and similar regulations on the Moselle without worrying about the interests of its new citizens. Württemberg did the same on the Neckar, while the Netherlands promised not to increase tolls until an agreement was signed.\textsuperscript{23} Liberalism thus seemed to be in the air, but the Dutch King was not serious about this, and Berlin soon sidelined reformers like Wilhelm von Humboldt (who played a major role in the Commission).

In Vienna, Dutch diplomats had already emphasized that their King only regarded the Lek, which was the least navigable of the Dutch Rhine branches, as an affluent of this river. In the delta, where the Rhine and Meuse flow together and split up again, it is difficult to determine which branch is part of which river, but the Waal was always considered to be part of the Rhine. According to an 18\textsuperscript{th} century treaty, hydraulic works

\begin{itemize}
\item \textsuperscript{20} 38, Pariser Friedensvertrag, 30 Mai 1840, Rheinurkunden I, 36-37; Van Eysinga, \textit{Geschichte der Zentralkommission} (1994), 11.
\item \textsuperscript{22} 42, Akten der Wiener Flußkommission, 23. Februar 1815, Rheinurkunden I, 51.
\item \textsuperscript{23} Ibidem 24. und 28. Februar 1815, 52.
\end{itemize}
were expected to guarantee that it acquired two thirds of all Rhine water.\textsuperscript{24} After the split, the Lek lost another third to the IJssel and was barely navigable. Nonetheless, the King was obstinate, mainly in opposing the Congress when it came to reducing his sovereignty.\textsuperscript{25} As this sovereignty was primarily based on the Congress’s decisions, it was difficult to protest while it lasted, although he found an ally in the Count of Nassau, who needed a free hand in Rhine matters because a significant part of his budget came from tolls. In Vienna, the two tried to limit the damage, thereafter undermining unwelcome decisions by petitfogger discussions and chicanery. As a consequence, Dutch diplomats claimed that: the Lek was the only extension of the Rhine; and the articles stating that navigation should be free \textit{du point ou il dévient navigable jusqu’à la mer} (from the point where it became navigable until the sea) meant ‘to’ and not ‘into’ the sea. The King claimed a free hand and raised transit taxes from where the tide was measurable, which was quite some distance from the sea.\textsuperscript{26}

As the Dutch King pretended to be a liberal and Prussian reformers were still influential, it seemed that only some minor points still needed to be discussed. The Congress therefore established a Central Commission, with its mission being to resolve these issues before starting its controlling duties. To guarantee that the tow paths were maintained, Prussia supported France when it proposed introducing majority decisions and giving the CCNR supranational authority in matters of navigation. As this would also strengthen the positions of these major powers, the Netherlands and Bavaria, as well as the non-Rhine state members of the River Commission – Britain and Austria –hesitated, while the smaller Rhine states opposed the idea. As a consequence, the CCNR just became a diplomatic council, meeting once a year to organize a police regime and control the freedom of navigation and the maintenance of the tow paths.\textsuperscript{27} Initially, it was expected to resolve some remaining constitutional issues, although this was not considered to be a problem.\textsuperscript{28} In fact, rivalry between the United Netherlands – a combination of Belgium, the Netherlands and Luxem-

\textsuperscript{26} Nusteling, \textit{Rijnvaart} (1974), 1-5.
bourgeois and Prussia blocked an agreement until 1831. Officially, Luxembourg – the present Grand-Duchy and the Belgian province together – was independent, but as the Dutch King was its Grand-Duke and it was ruled as a Dutch province, and because the King’s will was decisive in both countries, this seemed to be academic. As part of the German Confederation, Luxembourg even gave the Dutch King a significant position within the Bund. With this arrangement, Britain’s foreign secretary, Lord Castlereagh, hoped to encourage Prussia and the Netherlands to cooperate and form a bloc against the still potentially dangerous France. As, however, Castlereagh’s military advisor, the Duke of Wellington, was pessimistic about Dutch military skills, it was decided that the strategic Luxembourg citadel should be a German stronghold manned by federal, i.e. Prussian, soldiers.

With 30 million inhabitants, France was larger than Prussia or the Netherlands, but for the former the Rhine was a border river. Improving its navigability was not in France’s interests, as it would reduce the competitiveness of transport from Le Havre to Southern Germany. In any event, France was beaten, and the rest of Europe was alert to any signs of new French ambitions. As a consequence, Prussia, with over 10 million inhabitants, hoped to become dominant in the region, although the Dutch King had similar aims. His Kingdom only had 5.5 million inhabitants, but it regained most of its pre-1795 colonies, was wealthier than Prussia and, as a local power, was not involved in all the conflicts in Europe. In Vienna, the two Kingdoms strengthened their position, but were disappointed, nonetheless. Berlin had hoped to acquire the Netherlands, but this was unacceptable for Castlereagh, who did not want any North Sea ports in Prussian hands. Accordingly, Berlin claimed the East Meuse bank in order to get a direct connection to France for the trade of its new territories, but this also went to the Dutch. Notwithstanding these successes, the Dutch King was dissatisfied, as he had hoped to obtain all the territory west of the Rhine and north of the Moselle, including Cologne. The two countries therefore waited for an opportunity to correct the Congress’s decisions.

In May 1815, Prussia’s finance minister, Count Hans von Bülow, thought that a trade-agreement with the Netherlands was necessary, as Dutch transit taxes would otherwise destroy the exports to France that had already suffered greatly due to British competition after the end of the Continental System. By making the abolition of compulsory transhipment in Cologne (as agreed in Vienna) dependent on new Dutch concessions, the Netherlands would be hard-pressed, and so von Bülow wrote to Chancellor von Hardenberg. As Bonaparte was on the loose again, Berlin could even make use of the Dutch need for Prussian protection. After Waterloo, von Bülow complained that a trade agreement would expire, giving the Dutch a free hand to raise transit taxes. He, therefore, proposed using the soldiers hunting the last Napoleonic troops to pressure the Dutch into accepting a territorial swap.

In Dutch Court circles, it was understood that Berlin considered them to be an obstacle, isolating Prussia from the sea. In 1829, a court official therefore expressed the fear that an energetic Prussian King, accepting that the Belgian provinces would fall into French and the colonies into British hands, would conquer the Netherlands to give the Hohenzollerns everything they always wanted: capital, trade, shipping and a stable border. More limited ambitions involving Luxembourg and the Eastern Meuse bank were also feared, but the Dutch King had other goals. As Prussia was involved in all the conflicts in Europe, it could get into trouble easily, giving the Netherlands an opportunity to get rid of the Luxembourg regime, obtain free Rhine navigation, and possibly even absorb all the territories west of the river. Prussia and the Netherlands wanted to improve their position, and tensions increased, as both claimed that their neighbour dishonestly refused to implement the Vienna decisions.

Soon after the Vienna Congress, most Rhine states were unsure whether the Congress’s decisions implied that navigation should be free into the sea. As a result, Berlin asked its member on the River Commission, Wil-
helm von Humboldt, to discuss this with his British colleague, Lord Clan-
carty. Just like the lawyers of the Cologne Chamber of Commerce, these
men regarded the Vienna articles as an extension of the 1804 charter to
Dutch territory, meaning that its range was limited to the river itself.35 It
should be understood, however, that by this time Clancarty was an ambas-
sador in the Netherlands, where it was his mission to supervise and sup-
port the new Kingdom.36 In any event, Berlin did not initially attempt to
get rid of the transit taxes, but only demanded a reduction in their level.
As the conflict was not a juridical dispute, but a struggle for power, and
because Cologne was no longer the economic centre of a tiny Prince-Bish-
opry, but the prime trading centre of a major power, the question was not
who was right, but who would succeed. In addition to free shipping into
the sea, Prussia demanded the regulation of coastal shipping and fishing
and a trade agreement. It was only when the Dutch government empha-
sized that it did not want to discuss all of this within the CCNR context
that Berlin claimed that transit taxes would be contrary to the Vienna prin-
ciples.37 Accordingly, the Dutch King invited his brother-in-law to send a
diplomatic mission to discuss the problems bilaterally. This was accepted,
and a diplomat was appointed, although he never turned up. Berlin found
that it had something to offer with respect to Rhine matters, but was emp-
ty-handed in trade negotiations. As it did not accept being outmanoeuvred,
it simply refused to implement the Vienna agreements for as long as the
Dutch levied transit taxes.38

Prussia hoped to use the remains of the Cologne staple again in future
negotiations, while the Dutch raised transit taxes. Conflicts concentrated
on Rhine matters, but they were in fact a struggle for power in which Prus-
sia seemed to be stronger, while the Dutch were the champions of the
smaller Rhine states. As is normal in such a struggle, both parties avoided
making concessions, as it was difficult to calculate whether these would
result in an unfavourable change in power relations. The two governments
did not hesitate in undermining earlier agreements and were supported by

36 Koch, Koning Willem III (2013), 228-230; Sas, Bondgenoot (1985), 44.
37 33, 1818, December 28. Van Nagell aan den koning, Posthumus III, 37-38; 35,
1819, Januari 31, Falck aan den koning, Idem, 39-45; Rotterdamsche Courant,
7-9-1819, Dag.
38 80, 1824, September 23. Van Reede aan de Perponcher, Posthumus III, 122-125;
interest groups who thought they were right and their rival was being deceptive.\textsuperscript{39} After 1813, Dutch nationalists, as well as the King, hoped to revive staple markets, making the Netherlands a centre of trade again. The Amsterdam and Rotterdam lobbies demanded that the government not give in to ideas on free trade. Transit using Dutch ports and rivers, but not involving merchants or financiers, should be checked.\textsuperscript{40} As prohibition was out of the question, because it would violate the Vienna agreement and cause serious conflict with Britain (whose industry needed the Rhine for its exports to Germany), transit was taxed, increasing transport costs on the Dutch Rhine far above the level on comparable Prussian tracks. The late-19\textsuperscript{th} century historian Heinrich von Treitschke, who thought that all the problems of Rhine navigation resulted from the greed of Dutch shopkeepers, exaggeratedly claimed that these costs were 13 times as high.\textsuperscript{41}

Whatever its consequences, the Dutch policy was in vain, as German trade had not really needed Dutch merchants since the 18\textsuperscript{th} century, because agents could do the job instead. Taxes could not prevent this.\textsuperscript{42} In Rhineland and Westphalia, transit taxes were therefore seen as an old-fashion instrument for supporting privileged groups. Treitschke believed that this was the cause of the CCNR’s failure to act, but Prussian chicanery was just as obstructive.\textsuperscript{43}

In a similar way to their Dutch colleagues, Cologne businessmen encouraged their government to not give in. As long as the Congress’s decisions were not implemented, Cologne’s staple obstructed Dutch Rhine shipping beyond that city, while the high Napoleonic taxes on barging between Cologne and the Dutch border undermined its competitiveness on that track. Cologne businessmen were convinced that Dutch chicanery undermined their right to free access to the sea, and Prussia would be empty-handed in negotiations if it implemented the Congress’s decisions. As a result, nothing would change as long as the Rhine states failed to settle their disputes. Moreover, Cologne barge-boatmen claimed protection and a

\begin{itemize}
\item \textsuperscript{39} Keohane, \textit{Institutions} (1998), 88.
\item \textsuperscript{40} Wright, \textit{Free Trade} (1955), 6-8.
\item \textsuperscript{41} The complete quote gives an impression that very much exaggerated the reality of the situation. Treitschke, \textit{Deutsche Geschichte} (1885), 470; Berger, \textit{Harkort} (1891), 228.
\item \textsuperscript{43} Treitschke, \textit{Deutsche Geschichte Bd. 3} (1885), 470; Van Eysinga, \textit{Geschichte der Zentralkommission} (1994), passim; Boogman, \textit{Nederland} (1955), 12.
\end{itemize}
monopoly on the track to Mainz. The Cologne Chamber of Commerce kept these interests in line by blaming the Dutch for everything and encouraging anti-Dutch sentiments. In the 1820s, this inspired the Westphalian parliament to propose a canal to the German coast, circumventing the Dutch ports in a way that was similar to what the French had tried to do. Nothing would come from this, but Cologne’s businessmen rightly thought that it was only by breaking the Dutch monopoly that trade could be liberalized. Railways seemed to be an option, but it was only in the 1840s that the Netherlands was circumvented by rail. Until then, taxes and staples remained. Consequently, Rhine freight rates were high and, as in the ancien régime, road transport came into use again as an alternative.

In the Dutch-Prussian conflicts, most Rhine states backed the Netherlands, not only because of the staple, but also because Prussia was feared. A compromise was only reached in 1829, but because of the 1830 Belgian revolt, its implementation was delayed. From a Rhineland perspective, this revolt seemed to be a solution, and liberal Cologne circles around David Hansemann even proposed a Prussian-Belgian customs union. Berlin feared, however, that an independent Belgium would be easy prey for France. Moreover, Antwerp only had an indirect connection with Cologne over Dutch territory that could not be used as long as The Hague considered Belgium to be a rebellious nation. In the Dutch press, Belgian railway plans were feared, however, as Belgian railway construction was not a spontaneous process, but a well-planned instrument in strategic nation building.

In Cologne liberal circles, a railway to Antwerp was considered to be an effective step against the Dutch monopoly. It was therefore a

47 Maandbericht over Juli 1821 van de Handelskamer te Keulen, 1821, Augustus 2. Posthumus III, 49.
48 Gerloff, *Grundlinien* (1918), 159-161.
major triumph when this opened in 1843, but when negotiations had come to a halt in the 1820s, the Dutch were still able to refuse free access to the sea. Now, hatred of the Netherlands became so entrenched that, according to some, only King Frederic-William III prevented war. It was stated that the Prussian sovereign did not want to open hostilities with his brother-in-law, but this is not convincing; inbreeding in royal families seldom prevented armed conflicts.50

As, contrary to the agreement, Prussia refused to abolish compulsory transhipment or monopolies, the other riparian states felt victimized, and Baden, Bayern and Nassau moved to the Dutch side.51 In 1822, to win them back, Berlin sent a proposal for a treaty to the CCNR, but this only repeated the demand for a package deal and claimed that the river should be free from where it became navigable into the sea.52 This recycling of already rejected proposals was unacceptable, and now even France started to favour the Dutch, albeit probably only because it considered this to be the best way to obstruct any agreement.53 Prussia therefore tried to exploit its international contacts and asked the non-riparian members of the Vienne River Commission to explain to the Dutch King that his policy was unacceptable. Britain’s foreign secretary, George Canning, immediately explained to the Dutch envoy that some transit taxes were against British interests. After this was settled, though, Whitehall lost interest and advised the Dutch to ‘adopt measures in relation to the navigation on the Rhine in concert with other powers bordering on that river, which may have the effect of carrying into execution the treaty of Vienna on this subject.’54 Strengthening Prussia was not in British interests and in 1825, when Berlin asked for its support again, London did not react.55

As the two countries had opposing ambitions, and because both could block an agreement, implementing the liberal Vienna principles seemed

50 Berger, *Harkort* (1891), 228.
51 Stuart, *Jaarboek* (1823), 66-70.
further away than ever. Berlin wanted to keep the Dutch under pressure, although the other Rhine states agreed that transit taxes were not their jurisdiction and insisted that Berlin and Darmstadt should terminate compulsory transhipment in Cologne and Mainz. Hesse used the situation to prolong its staple, hoping to develop Mainz into a major Rhine port. The Netherlands and Prussia had serious disputes, and there were very few attempts to resolve them. Indeed, discussions came to a halt for years and delegations never met. In fact, between 1825 and 1829, no Prussian commissioner attended the CCNR meetings. The Prussian King even demanded that the CCNR terminate all its activities. Although the other Rhine states continued to meet, the attempt to rescue the Napoleonic Rhine policy seemed to have failed. Consequently, Nassau and Bayern raised their tolls in 1828. According to the Vienna agreement, tolls should be spread more evenly to correct the Napoleonic anti-Dutch policy: along the Prussian lower Rhine, they should be lowered, while they could be raised elsewhere. As a result, Nassau and Bayern were allowed to increase their tolls, but Prussia was first expected to lower them, as tolls overall were not to be raised. Berlin, nevertheless, refused to implement the Vienna agreements, and Nassau and Bayern increased the costs of barging to the advantage of land transport. In reaction, Prussia threatened to check all ships sailing the river, which was in conflict with the principle that the Rhine did not fall under any national jurisdiction.

As long as the Dutch and Prussians feared that every concession could strengthen their rival’s position, the problems seemed to be insurmountable. Negotiations only started in 1828, but at that time the two parties were still more or less equals. In 1829, however, when a Prussian-Hessian customs union was founded, Prussia became so much stronger that concessions in Rhine matters could no longer change this. As a consequence, the courts agreed in 1829 to send a common proposal to the CC-

59 Algemeen Handelsblad, 9-7-1828; Ibidem, 7-2-1829.
60 ’s Gravenhaagsche Courant, 31-07-1826, Dag.
61 Angelow, Der Deutsche Bund (2003), 63.
NR that became the Rhine Act of Mainz of 1831. This limited Dutch transit levies and transferred them in a *droit fixe*, lowered tolls, terminated monopolies and the remains of the staples of Mainz and Cologne, and recognized the Waal as part of the Rhine.\(^\text{62}\) Furthermore, the CCNR’s position was strengthened, as it got the task of initiating improvements in navigation whenever there were opportunities to do so. As the new freedoms were not limited to certain types of ship, these principles had enormous implications.\(^\text{63}\) As long as the Netherlands and Prussia were struggling for regional dominance, the CCNR seemed to be a complete failure. Immediately thereafter, however, when it was clear that Prussia was the most powerful Rhine state, the position of the CCNR was strengthened.

4. *Steam power and railways, 1831-1866*

In June 1816, newspapers contained sensational articles on a ship without sails or masts moving on the Rhine at an unprecedented speed.\(^\text{64}\) Steam boats increased competition on the river from the 1820s onwards, especially when, by tugging barges, steamers entered the market for good transport.\(^\text{65}\) Prior to the introduction of steam, a trip from Rotterdam to Cologne (200 km; 125 miles) took 10-20 days, while a barge tugged by a steamer took only three to five days. The main problem with the former mode of transport was that towing-horses were often unavailable at the border. Accordingly, to remain competitive, Rotterdam’s boatmen reorganized the horse-stations, reducing the journey time to five to six days, although on the Middle- and Upper-Rhine the boatmen were less shrewd and had to retire or ask for protection. During the 1848 revolution, boatmen, line-riders (horsemen towing boats) and owners of pubs near horse-stations even shot rifles at steamers and tried to obtain army canons.\(^\text{66}\) In reaction, a proposal was discussed within the CCNR to refuse to award

\(^{63}\) Wolterbeek, *Proeve* (1854), 102-103.
\(^{64}\) Schawacht, *Schiffahrt* (1973), 133.
steamers a licence, but this was vetoed by The Hague. After the 1843 opening of the Cologne-Antwerp railway, Belgian competition made it clear that railways were the main threat to barging. Nonetheless, for Dutch ports without rail connections to the hinterland, steam-tugged barges seemed to be their only hope.

Current, wind or muscle power has been used for traction ever since Roman times. As the wind was not strong enough for upstream traffic along major parts of the Rhine, the size of barges was limited by the strength of a horse. It was only in the lower Rhine regions, where the current was not fast and the wind relatively strong, that larger ships were in use, but there were circa 3,000 towing-horses exploited along the Rhine in the mid-1800s. A strong horse on a well-kept path could tow a ship of 50 metric tons, cargo included. Compared with road transport, this was enormous; a horse on a well-paved road could pull only 1.5 tons. Nonetheless, barges were small, and could not increase in size before the link between their size and the strength of a horse was cut. This was not enough, however. The channel also needed to be adapted to larger and deeper barges. That this was achieved is unique; almost everywhere else, railways became dominant. This had enormous consequences, as the companies that owned the railways did not allow others to use them, thereby creating monopolistic transport markets. Waterways, however, are state-owned, for general use and thus encourage competition. In the mid-19th century, railways had a scale advantage and were cheaper because they could reach final destinations more easily. Transporters could thus economize on transhipment. Barging therefore needed large price advantages per ton/km to compete with railways. This became possible when the Rhine became navigable for large-scale trains of barges towed by steam tugboats. The CCNR got the task of promoting and supervising the adaptation of the infrastructure that would cause the costs of Rhine shipping to nose-dive by 75% between 1890 and 1914. In that same period, Dutch rail freight costs increased, those in Germany fell a little, and the general price level was

67 Leydse Courant, 11-08-1848, Dag.
68 398, Minister van Buitenlandse Zaken Bentinck aan de Kommissaris bij de Centrale Kommissie voor de Rijnvaart Travers, 8 Augustus 1848, in: RGP, Bescheiden betreffende de Buitenlandse Politiek, 1.1. 1848 – GS 139, 387; 399, Ibidem, 8 Augustus 1848, Idem 388.
69 Meidinger, Ströme (1861), 73.
70 Kurs, Schiffahrtsstraßen (1895), 664.
more or less stable. In the entire 1860-1913 period, Dutch rail freight costs fell by 17%, while those of Germany and the Rhine decreased by 55% and 82%, respectively.\footnote{Klemann/Schenk, \textit{Competition} (2013), 838-839.}

Steaming was used in Rhine shipping even before the Act of Mainz, but it was only when railways were introduced in the region that barging was completely transformed. Developments took place when the 1843 opening of the Cologne-Antwerp railway destroyed the monopolistic position of the Rhine and Dutch ports. Indeed, between 1840 and 1860, the number of German railways multiplied 30 times and the extent of rail transport over 500 times, while the costs per ton/km fell by 56%.\footnote{Fremdling, \textit{Eisenbahnen} (1975), 17.} Railways now became the prime mode of inland transport, but this had unforeseen implications. One of these was that trains need stable bridges.\footnote{Strauch, \textit{Entwicklung} (2007), 77; Fremdling, \textit{Railways} (1977), 601; Fremdling, \textit{Spoorwegen} (1991), 43; Keller/Shiue, \textit{Tariffs, Trains, and Trade} (2007), 22; Schwabe, \textit{Binnenschifffahrt} (1899), 7-8.} Up to the mid-19th century, downstream from the medieval bridge in Basel, the Rhine could only be crossed by ferries or pontoon bridges. In the 1850s, Prussia started to build a railway bridge, the \textit{Dombrücke}, just behind Cologne Cathedral. As this was an initiative of a rail company, the design threatened navigation, leading to protests by boatmen, steamer companies, chambers of commerce and most other Rhine states. Accordingly, an extra CCNR meeting was held in 1858.\footnote{Middelburgsche courant, 19-01-1858, Dag.} Some opponents of the bridge went to the German Confederation, but as this Bund could not bind the non-German Rhine states, it was decided that it had no jurisdiction over Rhine matters. As a result, a CCNR technical commission was asked to adapt the design of the bridge, but this did not produce a solution. Prussia, however, offered to raise the roadway by five feet (1.57 metres) and compensate the boatmen who had to adapt their barges. Clearly, in the late 1850s, keeping the CCNR together was a major Prussian interest. As building activities on other railways crossing the Rhine or Moselle had started already, many other bridges were needed.\footnote{Notizen über die neue Rhein-Brücke bei Köln zusammengestellt aus den Geschäftsberichten der Director der Köln-Mindener Eisenbahn-Gesellschaft und andere veröffentlichten Berichten (Köln 1859), 3-17; Opregte Haarlemsche Courant, 31-03-1958, Dag; Ibidem, 08-04-1858.} Until 1875, each was discussed within the
CCNR. CCNR permission then took on the character of a building licence.76

Competition by railways motivated the CCNR to adapt the river to steam-shipping from the 1850s onwards. This led to a revolution in hydraulic engineering. Traditionally, this focused on protecting river banks from floods, and was considered to be a task for individual Rhine states. The CCNR only mediated if there were conflicts about tow paths. Traditional barges were small, and did not need deep channels, but it was practical when it was wide enough to tack. As steamers and steam-tugged barges were large and deep, wide and shallow tracks needed to be transformed into deep and narrow channels. As trains of steam-tugged barges were altogether 400 metres long at the end of the century, the track also needed to be straightened. This required enormous investment, but it became clear from the 1840s onwards that this was the only chance to survive. In the Netherlands, rail transport from Germany to Antwerp caused some panic, as it grew much faster than Rhine transport, while Dutch ports had no rail connections. The Hague therefore did everything it could to improve the competitiveness of barging and offered to terminate shipping rights and transit taxes. It also demanded railway connections with Germany.77 In 1847, the Dutch government even proposed removing all tolls.78 Under the pressure of competition, The Hague became liberal, but the Germans were not now in a hurry. In order to defend its position in 1851, the Dutch even unilaterally removed all tolls and taxes, but this had little impact.79 Barging seemed to be doomed and, in 1853, traders, boatmen and steamship companies together sent petitions to the CCNR asking it to speed up the liberalization of Rhine transport.80 Most Rhine states were in favour of liberalization, but Hesse and Nassau needed their tolls.81 In the 1860s, shipping and insurance companies, interested individuals and representatives of chambers of commerce from all Rhine states met to

77 Overijsselsche Courant, 18-10-1844, Dag; Algemeen Handelsblad, 10-3-1845, Dag; Handelingen van de Tweede Kamer der Staten-Generaal 1844-1845, 30 april 1845.
78 Algemeen Handelsblad, 30-8-1847.
80 De Grondwet, 04-10-1853, Dag; Nieuwe Rotterdamsche Courant, 30-05-1856, Dag.
81 Opregte Haarlemsche Courant, 24-12-1857, Dag.
form a committee to promote their interests.\textsuperscript{82} As Rhine politics became transnational, a transnational lobby organization was needed. At that time, the German Rhine states – by then all members of the Zollverein – also met, while the Prussian House of Representatives demanded that pressure be put on Nassau and Hesse. It was only in 1861 that tolls and levies were lowered.\textsuperscript{83} This was, however, too little, too late, and even the Dutch removing all tolls and duties was not enough;\textsuperscript{84} railways simply reduced their freight rates in response. Rhine shipping kept the transport markets competitive, but as this seemed doomed, it could not last.\textsuperscript{85} In the 1850s, however, the Prussian government became interested in Rhine shipping as a way to guarantee cheap and easy transport for its new industrial centres along the Ruhr and Rhine.

5. Canalization

People living on the banks of the Rhine had adapted the river to their needs since ancient times, but it was only in the 19th century that the river was transformed from a more or less natural waterway containing salmon and sturgeon, and full of sandbanks, rapids, meandering tracks, rocks, floating quicksand, and periods of ice and low water, into a canalized river adapted to the needs of barging. Protecting the banks remained important, but the primary target was to create a straight and deep channel.\textsuperscript{86} As a consequence, by the early 1900s, it became possible to use trains of four iron barges (together 400 metres in length) with a loading capacity of 6,000 tons and tugged by a steamer of 1,300-1,500 hp. Around the 1840s, when the first steam-tugged trains of barges emerged, steamers had a capacity of only 50-100 hp and its barges of 600 tons. In the same period, the coal consumption of barge trains fell by 66\% as a result of the great efficiency of iron barges, propellers, compound engines and tubular boil-

\textsuperscript{82} Nieuw Amsterdamsch handels- en effectenblad, 14-06-1860, Dag; Nieuwe Rotter-
damsche Courant, 21-07-1860, Dag.
\textsuperscript{83} ‘Economische Kronijk, 3 Junij.’ De Economist, 1860, 192; Nieuw Amsterdamsch handels- en effectenblad, 14-11-1860, Dag.
\textsuperscript{84} ‘Economische Kronijk, 20 Februarij.’ De Economist, 1861, 88-142.
\textsuperscript{85} Dagblad van Zuidholland en ’s Gravenhage, 09-10-1861, Dag.
ers. Speed more than doubled.\textsuperscript{87} As a consequence, barging could not cope with the demand for the enormous quantities of bulk transport generated by the industrial centres on the Rhine’s shores, but nevertheless became highly competitive.\textsuperscript{88} The CCNR also played a major role in transforming the river.

Even in the 1831 Act of Mainz, it was agreed that CCNR technicians would regularly examine navigability, although it never did this. Indeed, it was only in 1847 that the Prussian commissioner initiated an inspection just after Rhine shipping was wiped out on the Basel-Strasbourg track. He was fearful of the future and wanted to improve the river’s competitiveness.\textsuperscript{89} After the 1849 inspection, the commissioners of Prussia, Nassau and Hesse wrote a memo on the terrible condition of the Dutch track. In Germany, it was still generally believed that The Hague tried to limit its overseas contacts. In fact, as a result of the character of the delta, the amount of water in each Dutch Rhine branch was much less than on the German track, while the slow current and floating ice – winters were cold – caused sediment to settle and the bottom of the river to rise. It was only by raising the height of the dikes that water was kept out of the land, although this nonetheless produced water levels that were higher than the surrounding land whenever ice prevented a quick flow, causing massive floods.\textsuperscript{90} Canalizing projects in upper-Rhine regions only increased these problems.\textsuperscript{91} According to The Hague, the technical issues could not be solved, but Germany simply did not believe this.\textsuperscript{92}

In fact, the channels of the Dutch river branches were in terrible shape. At certain points, the Waal – the main shipping route – was little more than a metre, while the Port of Rotterdam could only be reached from the sea side during high water. In some German states, the river was in a similar condition, but this was not the point that Prussia wanted to make. It needed a smooth channel from its developing industrial areas to the sea and demanded that the Dutch cooperate; for Berlin, it was unacceptable that, after its track was normalized, the river would end in a swamp. Accordingly, in 1850, the year after the inspection report, the Dutch minister Rudolf Thorbecke bowed his head

\textsuperscript{87} Clapp, \textit{Rhine} (1911), 44.
\textsuperscript{88} Klemann/Schenk, \textit{Competition} (2013), 840.
\textsuperscript{89} Van Eysinga, \textit{Geschichte der Zentralkommission} (1994), 78.
\textsuperscript{90} Woud, \textit{Het lege land 1798-1848} (1998), 95ff.
\textsuperscript{91} Lintsen, \textit{Central Water Management} (2002), 552.
\textsuperscript{92} Van Heezik, \textit{Strijd} (2007), 73-74.
and initiated the building of dikes and groins to limit the width and increase the depth of the rivers.93

After 1849, the CCNR organized regular inspections, producing reports on how to improve navigability. In 1861, technicians from all Rhine states set uniform targets for the entire river. When the water was low (1.5 metres at the gauge of Cologne), the depth of the channel was expected to be: one and a half metres at least on the track from Strasbourg to Mannheim; two metres from Mannheim to Koblenz; two and half metres from Koblenz to Cologne; and, from there, three metres to the sea. As the Strasbourg-Mannheim track was ignored to keep France at arm’s length, when finished, large barges could sail from Rotterdam to Mannheim without any transhipment, obstacles or locks. Complicated engineering projects were needed to remove the remaining bottlenecks.94 Accordingly, a CCNR technical committee regularly controlled the steps taken by the member states responsible for execution. Prussia took the lead in this in 1851 by founding its Rheinstrombauverwaltung, which was an agency to organize the engineering projects to transform the Rhine into an easily navigable waterway. From then on, it put pressure on the other Rhine states to normalize their tracks.95 Apart from the Netherlands, the problems were most severe in Nassau, which held the left bank of one of the most problematic tracks, near the Binger Loch; a granite mountain wall there left only a narrow passage. Prussia held the left bank. Removing this obstacle was a major problem. Everyone agreed that something should be done, but it was only in an 1856 special CCNR meeting that what this precisely was was agreed. A committee of engineers now had the authority to make decisions whenever new problems arose. As Prussia was the initiator of canalization, the CCNR, which supervised it, seemed to be the executor of the Prussian plan.96 Indeed, Prussia used this supranational agency to obtain what it needed in territories outside its jurisdiction, although the example of the Cologne railway bridge made clear that, for Berlin, the CCNR was so important that it was prepared to make concessions to keep it going.

94 Nasse, *Schiffahrt* (1905), 32.
6. **Prussian power politics, 1866-1871**

For both Prussia and the Netherlands, improving the Rhine was vital economically, but complex negotiations were needed to convince the smaller Rhine states to invest the giant sums required. They did not, however, have the money to do so and their interest in Rhine navigation was limited. In the case of Nassau, even Prussian pressure could not resolve the ongoing problems, as it needed its tolls and could not pay for its part of the project. In 1866, the situation changed completely, however, when Berlin used its military victory in the Austro-Prussian war to reorganize and liberalize navigation once and for all. Initially, it annexed Nassau, the Hesse electorate, Frankfurt and parts of the Grand-Duchy of Hesse. With Nassau, this destroyed a principality that had opposed centralization and the liberalization of navigation since the Vienna Congress. Prussia also used the peace negotiations to dictate a new Rhine regime to the other German Rhine states, which all fought on the Austrian side. They thus had to accept that navigation would become completely free and that the CC-NR would supervise normalization.97

The Dutch and French, who were not involved in the 1866 war, feared Berlin, because, as Thorbecke wrote ‘Prussia uses the new nationalistic principle, for conquests according to old traditional power politics’.98 Napoleon III wanted to be compensated for not supporting Austria, for instance by way of Bismarck giving France permission to annex Belgium, and he was unsatisfied with Bismarck’s offers. Rumours claimed that the Prussian Prime Minister and French Emperor discussed dividing the Low Countries, but it is possible that Bismarck spread such conjecture to give the minor powers the idea that they were dependent on his whims.99 In 1868, Prussia’s representative in the CCNR tried to persuade France and the Netherlands to accept the regulation of Rhine navigation, as agreed in the Peace of Prague. During the Mannheim negotiations that followed, fear ensued when The Hague refused to accept the fact that, in future, every Rhine state could control all of its hydraulic engineering activities related to Rhine water, as this would involve the Holland Water Line, giving Prussia information about this cornerstone of the Dutch defence system.

99 The Times, 16 November 1866; Nieuwe Rotterdamsche Courant, 13-08-1866, Dag; Nieuwe Rotterdamsche Courant, 17-08-1866, Dag.
Furthermore, the foreign minister, Count Jules van Zuylen van Nyevelt, opposed the idea of extending CCNR police control to other waterways, as he feared that these would be executed by Prussia behind a CCNR mask. He therefore withdrew the delegation from the negotiations. As a result, Berlin mobilized the press, and more or less official Prussian newspapers suggested that the Netherlands had tried to cut off Germany’s access to the sea again in a by-the-way manner when discussing the need for an independent Dutch Kingdom in modern Europe. Just as during the Luxembourg crisis of 1867, Dutch newspapers were pessimistic about Prussia’s ambitions. The Hague, meanwhile, was intimidated. Indeed, the minister would be blamed in parliament for endangering Dutch independence. Bismarck’s known willingness to use force made the Netherlands accept Berlin’s demands, and this led to the Mannheim Convention of 1868. As Dutch panic seemed to be in Prussia’s interests, this was carefully manipulated.

In its first century, the CCNR had to deal with political rivalry, cumulating in Prussia’s absorption of Nassau in 1866 and French territories bordering the Rhine in 1871. Apart from this, it had to answer the problems raised by industrialization on the Rhine’s banks and the transformation of inland transport. Prussia and Germany dominated the Rhine from 1871 because, apart from the Netherlands, all CCNR members were part of the Prussian-dominated Kaiserreich. By then, its emotional period was over. The Netherlands and the German member states agreed on the need to canalize the river, remove obstacles and keep it free from tolls or taxes. In 1886, C. Bloys wrote in *De Economist*, a Dutch academic journal, that it had been the main target of the Rhine policy to get a straight, deep channel. As that project was almost complete, the author expected the river to become the prime transport route of one of the most important industrial areas in Europe. In upstream transport, iron ore and cereals were already dominant and, so Bloys thought, in the future coal would become an im-

100 Dagblad van Zuidholland en ‘s Gravenhage, 30-8-1868.
101 Handelingen Tweede Kamer der Staten-Generaal 1868-1869, 5 Maart 1869, 973-975; Bredasche courant, 3-09-1868; Dagblad van Zuidholland en ‘s Gravenhage, 30-8-1868.
102 Dagblad van Zuidholland en ’s-Gravenhage, 25-08-1868, Dag; Dagblad van Zuidholland en ’s Gravenhage, 9-10-1861, Dag; Algemeen Handelsblad, 5-09-1868, Dag; Nieuwe Rotterdamsche Courant, 30-08-1868, Dag.
103 Handelingen Tweede Kamer der Staten Generaal, 1868-1869, 5 Maart 1869, 973-975.
portant return cargo, further increasing the competitiveness of barging.\textsuperscript{104}

The target to deepen the Cologne-Rotterdam track to three metres, as decided in 1861, was almost achieved. In this regard, between 1852 and 1882, Prussia spent 20 million guilders and the Netherlands 35 million.\textsuperscript{105}

After the Rhine was canalized, the scale of Rhine shipping could increase. Large Ruhr companies built fleets of steam-tugged iron barges, as they needed enormous quantities of ore, coal and wood, and often used the Dutch flag for fiscal reasons. As Rhine shipping became extremely cheap just before WWI, almost a quarter of all German trade (in tons) crossed the German-Dutch border on Rhine barges.\textsuperscript{106}

Rhine canalization and liberalization was successful, but opposed by some German interests, nonetheless. As long as the costs of rail transport per ton/km were 50-150\% higher than those of Rhine shipping, the railways could compensate for this by using other advantages. In 1883, however, the cost of German rail transport was suddenly 228\% higher; this figure was 452\% in 1901 and 659\% in 1913.\textsuperscript{107}

As a result, in Prussian industrial centres along the river and its subsidiaries, it became cheaper to use overseas cereals than rye from Prussia’s eastern territories. Agrarian protectionism substantially raised food prices, but not enough to overcome the differences in price and transport costs between rye and wheat from Eastern Germany and cereals from the US or Ukraine.\textsuperscript{108} It became easy for nationalists to blame the Rhine. The ports of Hamburg, Bremen and Emmerich recognized a dangerous competitor in Rotterdam, and industries not connected to the river network complained that waterways were subsidized and railways taxed.\textsuperscript{109}

Agriculture, railway, port and some industry lobbies demanded the reintroduction of tolls. A railway manager expressed the view that it was unfair to tax railways and subsidize waterways, as this improved the position of regions near waterways at the ex-

\textsuperscript{104} Bloys, \textit{Verkeerswegen} (1886), 1011-1032, 1018-1020.

\textsuperscript{105} 84a, Nota behorende bij de brief van Waterstaat, Handel en Nijverheid van 19 maart 1887, 38, Waterstaat A. RGP, Bescheiden betreffende de Buitenlandse Politiek, 2.4. 1886-1890 – GS 126, 119-120.

\textsuperscript{106} Klemann/Schenk, \textit{Competition} (2013), 841.


\textsuperscript{109} Rabius, \textit{Aachener Hütten-Aktien-Verein} (1906), 69-75; Wirminghaus, \textit{Wiedereinführung} (1905).
pense of unconnected regions.\textsuperscript{110} Similar arguments were used by a steel company in Aix-la-Chapelle that was confronted with rising transport costs, while the tax it paid was used to improve the facilities of its competitors.\textsuperscript{111}

The taxation of Rhine shipping was not just against the Act of Mannheim, but also the constitution of the Kaiserreich, which stated that tolls on barging were only allowed when used to maintain the waterway. Taxes on Rhine barging were, however, against the interests of the most industrialized parts of Germany.\textsuperscript{112} Recent research shows that, by not paying for its infrastructure, Rhine shipping obtained indirect subsidies of circa 11\%.\textsuperscript{113} After 1885, the tolls or levies needed to compensate for this would be negligible in comparison to the differences between rail and Rhine freight rates. It was not only indirect subsidies, but also the organizational activities of Prussia and the CCNR that made Rhine shipping competitive again. Even so, industries along the Rhine and Ruhr set up a lobby to oppose plans to reintroduce tolls.\textsuperscript{114} At the same time, the Netherlands demanded that Berlin should not forget its obligations and should keep the Rhine free. It was now economic interests and not power politics that dictated the situation. For Germany, Rhine transport, and with that the Netherlands, became so important that it even influenced high politics.

In 1902, a prominent Dutch politician concluded that, notwithstanding the aggressive tone in some nationalist circles, the Netherlands had nothing to fear from its dominant neighbour. An independent Netherlands was of more importance to Germany than an annexed country.\textsuperscript{115} His reasoning was comparable with that of Helmuth von Moltke who, in 1909, adapted the strategic plans of his predecessor as Chief of the General Staff, Alfred von Schlieffen, to attack France in the case of war through the Low Countries. Moltke thought that after Germany attacked Belgium, Britain would use the indignation of public opinion to enter the war. He therefore concluded that the Netherlands was safe from any British attacks, as this would be unacceptable to the British public if London, just after it entered

\begin{itemize}
\item \textsuperscript{110} Mees, \textit{Rijn} (1898); Algemeen Handelsblad, 5-11-1909, Avond; Algemeen Handelsblad, 8-11-1909.
\item \textsuperscript{111} Rabius, \textit{Aachener Hütten-Aktien-Verein} (1906), 69-75.
\item \textsuperscript{112} Schwabe, \textit{Binnenschifffahrt} (1899), 3-4.
\item \textsuperscript{113} Klemann/Schenk, \textit{Competition} (2013), 837.
\item \textsuperscript{114} Wirminghaus, \textit{Wiedereinführung} (1905); N.N., \textit{Progrès} (1900).
\item \textsuperscript{115} Nieuwsblad van Friesland: Hepkema’s Courant, 13-09-1902, Dag.
\end{itemize}
the war to save one small country, attacked another. Consequently, Moltke thought it was better to keep the Dutch out. In a one-to-one war, the Dutch army was no match for the Germans, but in a European war its modern fortifications would be a problem on its northwestern flank. Apart from strategic considerations, Moltke hoped that a neutral Netherlands would allow Germany to trade. The Netherlands ‘should become the windpipe we can breathe through.’\footnote{Moeyes, \textit{Buiten schot} (2001), 81.} In 1909, when he wrote this, the major powers of Europe had just agreed the Declaration of London. It was the intention of this Declaration, which was never ratified by Britain, that in a time of war, apart from trading arms, international trade should continue as far as possible. It would only be by blockading an inimical port that a power was allowed to cut off the trade relations of the enemy under siege. As Rotterdam was a neutral port, Britain could not do that. For this reason, the German general hoped that, at least during the first period of war, Germany’s trade would continue as long as it used Rotterdam as its port. In 1913, the progressive-liberal German MP Georg Cothen made comparable remarks when he said that, as the Dutch provided Germany with all it needed from its overseas trade, the fact that it was not a part of Germany was not just not a problem, but was even favourable; in the case of war, it was better for its overseas trade to be organized by a neutral power.\footnote{Nieuwsblad van het Noorden, 09-05-1913, Dag.}

Such ideas were, however, rather general. In the summer of 1914, Reich Chancellor Theobald von Bethmann Holweg did not therefore hesitate in guaranteeing Dutch neutrality to the British ambassador, although he refused to do so for Belgium.\footnote{Kaiser, \textit{Origins} (1983), 468.} In the pre-1914 years, English, but especially French and Belgian newspapers, wrote that the Dutch had become too dependent on Germany, and that its ports were so important to its dominant neighbour that the country would be the first target of German aggression.\footnote{The Times, March 10, 1903; Nieuws van den Dag, 15 Augustus 196; The Times, February, 1900.} Apart from the propaganda element, this was an expression of fear of the growing German influence. Some British press publications opposed these ideas, however. The Times had actually already written in the late 19\textsuperscript{th} century that, as Germany had got everything it could from the Dutch without interference, its neutrality was in its favour, as it guaranteed
the continuation of at least some of its trade. As a result, Germany would keep the Netherlands out of any European conflict, as the Dutch envoy in Berlin also concluded in 1907. Notwithstanding German nationalists making a great fuss over the Dutch not paying taxes for their defence by the German army, and despite their demand to press this nation of shopkeepers to fight for the side where its interests lay, the Dutch were kept out in 1914. The Netherlands had little to fear from Germany militarily because, with free trade and cheap transport, it gave the Kaiserreich everything the Germans could demand. The Rhine Commission that organized and guaranteed free Rhine navigation, and the fact that Rotterdam became the dominant German sea port, played a vital role in this. Military interference could only be damaging for Germany’s relations with the Dutch. Free Rhine navigation was only one aspect of this, but as the intense economic relationships started with free Rhine transport, it was an essential element.

7. Conclusion

In the first few decades after the Vienna Congress, the circumstances within the Rhine region could be understood within a Realist framework, as there was a struggle for power going on between the United Netherlands and Prussia. This struggle between two states of comparable size almost destroyed the liberal regulation of Rhine shipping that was implemented during the period of French dominance. The attempts of the Congress of Vienna to consolidate this with the unique experiment of handing authority for the river over to an international commission, the CCNR, seemed to have failed. Prussia and the Netherlands were both determined to not make any concessions to the other, as they both feared that, by doing so, they would strengthen their rival’s position more than their own. The

120 The Times, January 31, 1882; The Times, 19 November 1891.
122 See, on such German nationalists: 23, 45, De Gezant te ‘s-Gravenhage Pouthalès aan Rijkskanselier van Bülow, 18 maart 1902. RGP, Bescheiden betreffende de Buitenlandse Politiek, 3.6 1899-1914 – GS 128, 71 ff.
123 See McDonald, Peace (2004), passim.
Dutch were in a strong juridical position when they demanded the ending of Cologne and Mainz as **Stations de Navigation**, and were backed by the smaller Rhine states. Prussia, however, which was the more powerful state, did not accept being outmanoeuvred and simply refused to end compulsory transhipment in these cities for as long as the Dutch raised transit taxes on the track to the sea. As both were calculating the relative gains for each concession, the Dutch could only give in when it became undisputable that Prussia was stronger. Then, after 1828, bilateral negotiations resulted in a draft version of the Mainz Convention of 1831.

As this led to Rhine shipping becoming free and there were no limits on particular types of ship, steam shipping now got a free hand. As a result, traditional boatmen felt endangered and tried to defend their position by organizing the horse-stations better, but also by attempting to convince governments that they needed protection. As the mid-19th century railways were threatening Rhine shipping by then, they had no chance of success; for both the Netherlands and the vastly industrializing Prussian territories along the Rhine and Ruhr, the survival of barging was too important to back their weak position. Prussia needed cheap transport for its new industry, particularly because this industry developed well away from any sea port. When railways became dominant, monopolistic transport markets with high freight rates would be the result. Therefore, it was vital for this industry, and thus for Prussia, that barge shipping, characterized by more competitive markets, survived. It was also the only chance for the Dutch ports to restore their competitiveness after Belgium opened a railway from Antwerp to Cologne. Barging needed to become cheap and competitive again. The Dutch wanted to liberalize barging from governmental and organizational obstacles, but Prussia thought that this was not enough. Natural obstacles that hindered large-scale steam-tugged barge-trains should be removed as well, but after King Willem I’s prolonged war against Belgium, the Dutch had no money to finance the necessary hydraulic engineering projects. Therefore, it was Prussia in 1847 that started a systematic policy to canalize the Rhine, using the CCNR as an instrument to achieve this in parts of the river where it lacked the authority to do so itself. The growing dominance of Prussia within the region made it possible to press all the Rhine states to participate, but the small Nassau, and to a lesser extent Hesse-Darmstadt, remained obstacles. These states not only needed the income from their tolls, and thus opposed complete liberalization, but they could also not afford to canalize their tracks. In the second period, lasting to 1866, Prussia used its power to control the CCNR and transform
it into an instrument to get what it wanted without escalating conflicts. When, in 1866, internal German conflicts escalated nonetheless, it used the post-war situation to get all it wanted in Rhine matters from the German Rhine states. Nassau, which had proved to be a lasting problem, was simply absorbed. To further improve its position, Prussia, pressed by the annexation of a substantial number of small states, intimidated the Netherlands into accepting the 1868 Treaty of Mannheim. France, which was Prussia’s only remaining rival in the region, was isolated from the river in 1871, with the autocratic Prussia using its power to obtain what it wanted, if not by peaceful means then by force and threats.

In the final period, the only members of the CCNR were the Netherlands and the German states that were part of the Kaiserreich. The Kaiserreich itself was not a member. The CCNR now became a technical organization controlling and coordinating the agreed policy on regulating the river, managing building activities and administrating Rhine police regulations and its court. The canalization process was almost over in the 1880s, and the entire river from Rotterdam to Mannheim was canalized. New plans were then made to canalize the track to Strasbourg. This caused some internal German friction, but by then Prussia’s influence was decisive. In any event, as the CCNR created an opportunity to regulate international problems on Rhine shipping in an efficient, cheap and peaceful way, keeping this organization intact became vital, not just for the small Netherlands, but also for Germany and its prime member state Prussia. It was thus essential that the rules agreed between the members were kept in place.

As a result of canalization, cheap bulk transport became possible on an ever larger scale, with trains of steam-tugged barges causing a spectacular reduction in freight rates. For bulk transport, Rhine shipping had very little competition; Rotterdam could now develop into the most important port in Europe, which was essential for its main industrial regions. This port, Rhine barging, and the interests of the industries along the Rhine and Germany’s subsidiaries became so important that lobbies by German ports, railways, farmers and industries well away from the waterway could not change the liberal German policy or convince Berlin that tolls were needed again. Rhine shipping was, and remained, free, because it was not in Germany’s interests to undermine the CCNR or the Act of Mannheim, or to get into conflict with the Dutch. The Netherlands was even kept out of the war in 1914, because of the central position of its port in German trade. Indeed, it was crucial to Berlin that a substantial and essential part
of its trade went through a neutral port. The Rhine and the liberal transport regulations on this river thus not only influenced low, but also high, politics.

The CCNR increasingly became an instrument of the most important Rhine state, Prussia, from 1831 onwards. Prussia used it to obtain what it needed – the canalization and liberalization of the river without constant conflicts with other Rhine states. The Rhine was thus liberalized and canalized, and the only major conflicts within the region – the wars and the danger of war between 1866 and 1871 – concerned the formation of the German nation state, not primarily Rhine navigation. Rhine politics was only indirectly involved when, in 1866, after Prussia won the war with Austria that was backed by the other German members of the CCNR, it used the opportunity to get immediately what would otherwise have taken more time. Berlin thus created a cheap transport network in a period when, almost everywhere else, inland water navigation was replaced by monopolistic railways. It could do this without any major conflicts by using the CCNR as its instrument. As long as Prussia was not the dominant state, the CCNR was ineffective; when it became dominant, the CCNR became its tool, making Rhine politics more efficient for Prussia, but also safer and less fearful for its smaller neighbours. The supranational agency was primarily an instrument that the most powerful state could use to achieve its international ambitions in a cheap and efficient manner. Nevertheless, this created a situation in which it became essential, including for this powerful state, to keep the relationships with the other members intact.

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