

# Denmark is bridging the Baltic

*Poul Rasmussen reports on a great project to link Scandinavia up with Europe—and how it could fit into LaRouche's "Productive Triangle."*

When tourists visit the medieval Kronborg Castle in Elsinore, the home of William Shakespeare's tragic hero Prince Hamlet, they often stroll along the eastern walls of the castle looking across the narrow Sound separating Denmark and Sweden. From here they have a perfect view overlooking the heavy shipping traffic passing on their way to and from the countries surrounding the Baltic Sea. They can also follow the fleet of small ferry boats going perpendicular to the main shipping lanes, weaving their way between the giant freighters to bring cars, trucks, and trains to and from Sweden. Many have wondered why a bridge was never built. Now, there will be a bridge, but not at Kronborg Castle.

A major contribution to the kind of modernization of European infrastructure, which Lyndon LaRouche has proposed in his program for a Productive Triangle encompassed by a high-speed freight and passenger rail route between Paris, Berlin, and Vienna is now under way in Scandinavia. On March 6, the Danish government got the backing of the majority of the Danish Parliament, to enter into an agreement with Sweden which will begin the first phase of constructing a bridge between the two countries. Thus, before the year 2000, a set of bridges and tunnels will link the Scandinavian peninsula to the European continent. Also, a new major urban center will appear, when the Danish capital of Copenhagen merges with the southern Swedish industrial city of Malmö.

When the Danish and the Swedish governments sign the actual contract of cooperation, it will open up the second phase of a major infrastructure program in Denmark (see **Map**). The first phase involves the construction of a bridge across the Greater Belt outlet from the Baltic Sea. This bridge is now under construction and will be completed by 1996. The second phase will be the bridge across to Sweden, and if the final agreement between Denmark and Sweden is signed by this summer, the bridge can be finished by 1999. At this stage, Scandinavia will have direct road and railway connection to the European continent. In recent weeks, Danish Transport Minister Kaj Ikkast has also emphasized that the Danish infrastructure plans must include direct links to the coming high-speed train networks of Germany and France.

But from a Scandinavian point of view, the connection

across the Sound to the island of Zealand, on which Copenhagen is located, farther west over the Greater Belt Bridge, across the island of Funen, over the Lesser Belt Bridge to the Jutland peninsula and from there to Hamburg and the rest of Europe is a significant and expensive detour. Therefore, a third phase will be a tunnel across the Baltic Sea linking southeastern Denmark to Germany just north of Lübeck. This Baltic Sea tunnel could be ready by the year 2000, completing a Danish infrastructure program consisting of a total of five bridges and three tunnels, with a combined length of 60 kilometers and a total budget of almost \$10 billion.

## The largest suspension bridge in the world

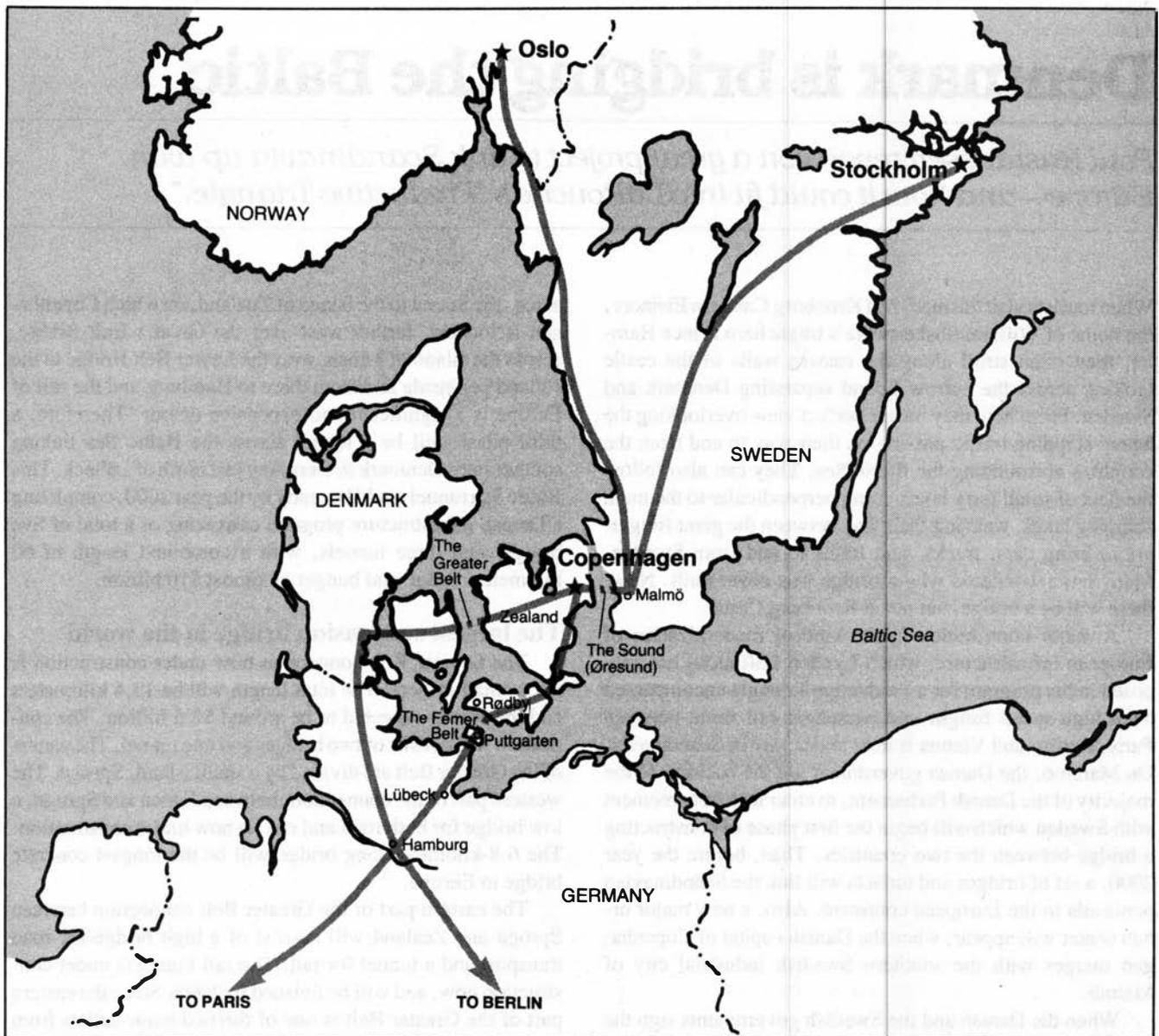
The Greater Belt connection now under construction is not a small project. The total length will be 13.4 kilometers and the cost is expected to be around \$2.5 billion. The connection will consist of two bridges and one tunnel. The waters of the Greater Belt are divided by a small island, Sprogø. The western part of the connection, between Funen and Sprogø, a low bridge for both road and rail, is now under construction. The 6.8-kilometer-long bridge will be the longest concrete bridge in Europe.

The eastern part of the Greater Belt connection between Sprogø and Zealand will consist of a high bridge for road transport and a tunnel for rail. The rail tunnel is under construction now, and will be finished by 1993. Since the eastern part of the Greater Belt is one of the two main outlets from the Baltic Sea, the bridge will have to allow for passage of very large vessels. Therefore, the high bridge will become the largest suspension bridge in the world. The span will be 1,624 meters and the towers will reach 260 meters above sea level. These man-made constructions will reach 90 meters higher than the highest point in Denmark supplied by nature.

## The Sound connection

The connection between Denmark and Sweden will go from the southeastern part of the Sound (Øresund) reaching Sweden just south of Malmö. It will be a combined rail and road connection. Since the Sound is the other major outlet from the Baltic Sea, and since there are three major shipping routes in this part of the Sound, the connection has to be

## Linking Scandinavia's 23 million people with the European powerhouse



The Danish infrastructure program under construction is identical to the infrastructure needed to realize the northern spiral arm of Lyndon LaRouche's proposal for a European Productive Triangle. The Danish proposal includes a total of 60 kilometers of combined bridges and tunnels, plus new highways and high-speed railways inland at a cost of \$10 billion. All of this will link the Scandinavian population of 23 million to the future Paris-Berlin-Vienna Productive Triangle.

Now under construction with a completion date of 1996, the **Greater Belt Bridge** consists of two bridges and a tunnel and accommodate both rail and auto traffic. Total length will be 13.4 km and it will cost approximately \$2.2 billion. The Western Bridge will be the longest concrete bridge in Europe. The Eastern Bridge will be the longest suspension bridge in the world, with a span of 1,624 meters, and a maximum elevation of 65 meters. (Humber Bridge in England—presently the longest—has a span of 1,410 meters.)

The **Sound (Øresund) Connection** portion of the overall project is 17.5 kilometers long, and its cost will total approximately \$2.5 billion at the expected 1999 completion date. Linking Denmark's capital of Copenhagen with Swedish industrial center Malmö, the connection consists of a 2 kilometer tunnel and 15.5 kilometers of combined high and low bridges. The connection will allow rail transport of goods from Scandinavia to the rest of Europe to rise from 8 million tons per year now to 15 million tons by the end of the decade. Rail ridership is estimated to increase from 5.5 million to 11 million by the year 2000.

The **Femer Connection**, will link Zealand to the north German mainland via a 23 kilometer long tunnel between Rødby on the Danish island of Lolland and Puttgarten in Germany. Accommodating both rail and auto traffic, the project is expected to cost \$3 billion.

designed accordingly. The two eastern shipping routes will be kept free by two high bridges connected by stretches of regular low bridges. But the western shipping route, the so-called Drogen, is situated just next to Copenhagen International Airport. With a necessary span of 600 meters and towers 150 meters high only 2 kilometers from the main runway of the airport, such a bridge would be a virtual nightmare for the pilots. Therefore, instead of a high bridge, a tunnel will be constructed.

But to go from a bridge to a tunnel requires land. Happily, there is an island, Saltholm, right where the changeover occurs. Unhappily, Saltholm is inhabited by 40,000 birds and 12 seals, and these birds and seals have a lot of environmentalist friends ashore. Therefore, instead of using Saltholm for the bridge-tunnel changeover, an artificial island will be constructed.

This little detail alone adds \$800 million to the project.

## The Ørestad

The Copenhagen-Malmö connection is not the shortest possible route across the Sound. Up north at Kronborg Castle, between the cities of Elsinore (Helsingør in Denmark and Helsingborg in Sweden, the Sound is only 4.8 kilometers wide. Nonetheless, the Copenhagen-Malmö connection is definitely a wise choice. By building a bridge here, the industrial city of Malmö and the capital city of Copenhagen can be combined. This will create an urban center of 2 million people in the two combined cities alone, and an additional 2 million in the Zealand and southern Sweden areas. This will bring about a closely integrated region of almost 4 million people—the highest population density of all Scandinavia.

With the extensive deep-water port facilities on both sides of the Sound, high-speed rail connections going north and south, and a major international airport in the middle of it all, this new Ørestad—so-called because it spans the Øresund—has all the requirements for becoming a major industrial center.

The idea of such an Ørestad is not new. The first Danish-Swedish joint committee to investigate the possibility of constructing a bridge across the Sound was set up by the municipalities of Copenhagen and Malmö in 1957. The first report was published in 1962, and one of the Swedish engineers from that committee is still on the project today. During the 1960s, the concept of an Ørestad began to take form. Among its most outspoken advocates was the former Lord Mayor of Copenhagen, Urban Hansen. Many committees and subcommittees working on the Ørestad plans carried his name.

In 1965, the second report of the Sound connection was published by the Copenhagen municipalities. In this report, the Copenhagen-Malmö connection was recommended over that of the Helsingør-Helsingborg. There were two very interesting arguments from the authors of the report, Professor Kristian Antonsen of Copenhagen University and engineer Anders Nyvig. The first argument was a study on the potential

population density of the region with either a Copenhagen-Malmö or Helsingør-Helsingborg connection or both. Using a model developed by the American astronomer and sociologist John O. Stewart, a modified version of the LaGrange equations for the energy potential in a gravitational field, Antonsen and Nyvig concluded that the Copenhagen-Malmö connection would give the highest potential population density, and should therefore be preferred if both bridges could not be built.

The second argument was equally important. Writing in 1965, before the onslaught of the post-industrial insanity which has since gripped the brains of many politicians in the West, and before the World Bank and the IMF succeeded in writing off the Third World from any industrial development, Antonsen and Nyvig wrote:

“In the decades to come, a growing portion of the industrial exports from Western Europe will go to the Third World. These countries will first and foremost demand various means of production, i.e. machines, machine tools, etc. Since the industries in the greater Copenhagen area are expected to concentrate on the various iron and metal industries, and especially those sectors requiring a highly skilled labor force and technical research, one can expect a rise in the overseas export, especially from Copenhagen. The situation in the Malmö area is in many ways similar to the one on this side of the Sound, since the lack of local industrial raw materials has caused an industrial composition similar to Denmark’s.

“Such a specialization around the southern part of the Sound could lead to a local expansion of exports to the Third World, which could have an important impact on the development of the cities, especially the use of the port facilities.”

Similar to the arguments for building modern, high-speed train connections in the Productive Triangle of Europe, Antonsen and Nyvig also emphasize that the bridge is a kind of infrastructure that will stabilize and develop the industries in the region through fast and effective door-to-door transport, and through this increased activity, new industries will emerge.

This was the kind of thinking that created the idea of the Ørestad in the 1960s. Later, the two oil crises in 1974 and 1979, and the Paul Volcker high interest rates and the international debt crisis in 1982 sent the Danish economy into a tailspin and put an effective freeze on the visions of an industrial center in Copenhagen-Malmö.

Now, the liberation of Eastern Europe, the fall of the Berlin Wall and the reunification of Germany have caused the reappearance of the Ørestad. But, today everybody talks about the bridges in order to link Scandinavia to the coming free market “paradise” of “Europe ’92.” Nobody talks about the Third World. That has to change. Not only for Scandinavia, but for all of Europe. The Paris-Berlin-Vienna Productive Triangle should be an engine for the world economy, and not a playground for the fanatic followers of Adam Smith.