Ladies and Gentlemen,

The congresses of the application of probability in telecommunications is coming of age and is now an institution in the technical and scientific world and especially, of course, amongst the scientists and engineers within the field of telecommunications. We started on Arne Jensen's initiative and under his direct guidance and control the congresses back in 1955 in Copenhagen. The first congress was a very limited affair with some 30 or 40 delegates but it proved to be a coming together that was very useful and it was felt that the congresses should be repeated. So has been the case and we have had a period of three years in Europe and the U.S. We have been able to find that the interest for the congresses have grown bigger each time - both in numbers of delegates and in contributions. The papers that have been presented have deepened and widened the subject considerably. The congresses have also been recognized both by administrations and industry as well as by CCITT. We are here in Sweden of course very glad that many of you know that he always has taken a keen interest in telecommunication traffic matters. He is here also representing one of the main sponsors of the congress.

As a representative of the Swedish Telephone Industries, the other main sponsor, we welcome Professor Dr. Göran Borg of L.M. Ericsson. Dr. Borg is a board member of L.M. Ericsson and he is also Dean of the Royal Institute of Technology here in Stockholm. Being a mathematician himself, Professor Borg has a good insight and knowledge of our problems and working methods. He has also taken a deep interest how these matters are treated at the university level.

The Organizing Committee above all, of course, welcomes delegates with wives and other family members here in Stockholm. We are extremely happy that so many have accepted the invitation to come here. Sweden is far away for many, and in fact not only for those who live overseas. We are specially happy to have with us representatives for countries which have not previously taken part in our congresses.

Of course, a prerequisite for the congress is the contributions. We are glad to state that the three-year period since the last congress seems to have been a busy and fruitful one for our researchers. The number of contributions is bigger than before and I think it is also true to state that we got many of a very high quality. I think therefore that the main conditions are fulfilled for a congress that will well fit in the series we have had.

We have chosen this time of the year which usually has a good weather in Stockholm. The temperature is pleasant most of the days and rain is scarce. We in the Organizing Committee thank also the management of this building, the Swedish House of Parliament. We hope that it will serve its purpose and also give our guests a glimpse of modern Swedish architecture. With these words I again wish you all very welcome.

I am leaving the floor to Mr. Bengt Furback, who kindly has promised to open the congress.

Address by Mr. Bengt Furback, Assistant Undersecretary to the Minister of Communications

Ladies and Gentlemen,

On behalf of the Swedish Government I have the great pleasure to wish you all very welcome to Sweden and the 7th International Teletraffic Congress.

We are very honoured to see here such a prominent gathering of telecommunication expertise from all over the world and, of course, we hope that your choice of site for your deliberations is to be interpreted as a recognition not only of the beauty of our capital but also of Sweden's role in telecommunications.

The theme of your congress is Application of the theory of probability to telecommunications research, engineering and administration.

I must confess that when I first read that theme it didn't make me much wiser as to what your congress was really all about. But when I later heard more about it - in my own layman language - I became very interested. As I understand it, your efforts here will be devoted to find means for increasing, at the lowest possible cost, the efficiency or productivity of the telecommunication facilities, in other words, make telecommunications easier and quicker and not more expensive.

It is fascinating to think over the results that your work here could yield. If one would succeed in improving the efficiency of the global telecommunication network by, say, one single percent unit, it would amount to - according to my own rough calculations - a world-wide saving of more than 500 million dollars. That is, really, a most impressive
Address by Mr. Bertil Bjurel, Director General of the Swedish Telecommunications Administration

Ladies and Gentlemen,

On behalf of the Swedish Telecommunications Administration I very glad indeed to express to you my warmest welcome to the Seventh International Teletraffic Congress.

The application of the teletraffic theory is of considerable importance to a Telecommunications Administration. May I just pay attention to a few fields of major interest from a managerial point of view, where work on teletraffic problems finds background and motivation.

The basis for all activities within a Telecommunications Administration – being at the same time an operating enterprise – is the requirement to give with the best possible economy, a service to its subscribers according to certain service standards. All problems related to finding a total optimum in building up a network stem from this requirement. More specifically, the traffic engineers have to pay attention to the traffic-carrying plant common to the subscribers in accordance with their traffic interests. It has been estimated that this part of the network bears more than half of the total investment costs for telecommunications plant. It is therefore quite clear that theoretical methods for taking into account both the stochastic character of real traffic and the topological aspects of network design should find here applications of highest importance to the operating management.

Let me round off this first point by noting that the question: "Well, what service standards should we have?" is itself a key-problem in traffic engineering. Further guidance from you, workers in the field, would be highly welcome.

A second field I would like to take up, is the technological development as an incitement for traffic engineering and research. If we just have a look at the papers to be presented to this congress, we find that they reflect to a large extent recent development. In the list of reports we see for instance quite a large number of studies of TDM switching systems. Another rather recent technological achievement I might mention is the introduction of demand assignment satellite communication which evidently will affect the network design. A few papers will discuss this matter.

When we discuss development questions, there is one fact that we have to envisage again and again, namely that new equipment introduced in existing plants should work harmoniously in parallel with old equipment. A total replacement of the old plants which might seem attractive from a pure technical point of view, is prohibited when cost versus revenue calculations are presented. Surely also traffic engineering and research has a role to play under this constraint of harmonious cooperation between equipments of various technological status.

As a third field of interest I would now like to take up the international telecommunications per se. By the recent introduction of subscriber international dialing, the various national networks have become integrated parts of a global automatic communication machine. Systems specifications, subscriber rates and also service and engineering standards have to be coordinated and harmonized to guarantee the subscribers possibilities of interconnection and to result in the most effective use of the facilities of the worldwide network.

Matters concerning International telecommunication are discussed in various international bodies, of which I might mention here only the ITU and its sub-organizations. Undoubtedly, the increasing complexity of the world-wide communication network justifies a forum besides the international bodies which cope with the whole range of administrative, economic and purely technical questions for a free exchange, in a scientific atmosphere, of new knowledge. The International Teletraffic Congresses seem to me to be such a forum.

With this brief survey of a few connecting fields of traffic theory and engineering, which are of major interest to a Telecommunications Administration, I wish you all the very best success from your participation in the 7th International Teletraffic Congress.

Address by Prof. Dr. Göran Borg, Board Member of the L M Ericsson Telephone Company

Ladies and Gentlemen,

As a representative for one of the main sponsors, the Swedish Telephone Industries, I want to underline the importance we in the industry lie on the research in telecommunication traffic. It is, of course, evident already from the fact that we over the years have spent and are spending a lot of money in this area. We think also that all efforts here have been most rewarding. As a basis for the system engineering it has given us the means to develop above all switching systems with a good economy. It has had an importance that has been felt throughout the industry and of course also for the many undertakings that the Swedish telecommunications industry has abroad.

For myself, as Dr. Jacobaeus said, as Dean of the Royal Institute of Technology and as mathematician it has been of a special interest to follow an activity that so evidently links pure science with technology. The interplay between the engineers and the mathematicians is very intense. In fact many engineers have acquired a good competence in mathematics and many mathematicians have got an expert knowledge in switching systems and their behaviour. I think that this kind of cooperation has moved the frontiers of telecommunication ahead. Certainly, we would like to see the same in other areas of technology.

With these worlds I would like to join in with all other wishes of welcome to the delegates and their associates. I want this congress very good success with its undertakings and hope that the results that will be reached here shall be to the future benefit for the development of telecommunications.