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STRATEGIC DIRECTION SESSION ST2
Roads and quality of life

Summary

This document describes the current state of interurban highways and the situation regarding transportation in general in Mexico (Technical Committee No. C4), as well as budget changes during the past four years, (1998 to 2001). It is clear, from the information shown, that these budgets have been increased and that our priorities have been the modernization and conservation of the main federal highways. Planning has been carried out by means of a process to identify necessities and draw up annual activity programs, through which resources are allocated and projects are followed up.

Activities carried out in the area of urban transportation are described, (Technical Committee C10). These aim to mitigate the shortfall caused in this field by increased population growth during the past 20 years.

On the subject of sustainable development, (Technical Committee C14) the definition of this term as used in Mexico is given, as well as actions taken during the past four years in relation to economic or financial aspects, ecological or environmental and social factors. These factors interact in a system in which the financial component supplies the resources for improvement through the others, seeking a reduction in highway accident rates, a reduction in the environmental impact caused by vehicular traffic and construction works and improved access to transportation services by the population of the most isolated rural areas. The means of implementing these actions have been use of the said process for planning and evaluation in addition to legislation on environmental protection and ecological balance. In the case of improved road safety, with the participation of different interested public and private organizations, a committee has been formed for the prevention of accidents on federal highways.

Some descriptive elements are included on the current state of heavy duty transportation, (Technical Committee No. C19), in addition to changes which have taken place in this area during the past four years, including those implemented under the rules of the North American Free Trade Agreement (NAFTA).

C4. Technical Committee on Interurban Roads and Integrated Interurban Transport

The Mexican interurban network of paved highways extends to about 110 thousand Km, of which 44% are under federal jurisdiction and the rest under each state. Of those under federal jurisdiction, some 42 thousand Km are toll free, while the remainder do charge tolls and are operated by the decentralized department of the Federal Government which is in charge of toll roads, Federal Income-Generating Roads and Bridges and Joint Services (CAPUFE). They originally operated under concession but, due to their poor performance, they had to be rescued by the department of the Federal Government in charge of communications and national Transportation (The Communications and Transportation Secretariat or SCT). They are currently operated under contract, either by CAPUFE or under concession to local state governments, while paved interurban highways under local government jurisdiction are mainly toll free.

The 110 thousand Km. of paved highways, together with 150 thousand of repaired highways and 65 thousand Km of unpaved roads give a total of 325 thousand Km of roads and highways in this country. The figure of 165 m/km^2 is significantly lower than that of more developed countries (around 500 m/km^2).

Federal interurban paved highways are the most important as they link state capitals, the most important productive and tourist areas of the country and some border towns and sea ports, while the toll free network is divided between the basic national network and the secondary road network. The first (22 thousand Km) is that where the highest concentration of vehicles move and includes the 14 main highways of the country. The 20 thousand Km of toll-free roads carry a lower volume of vehicles and jurisdiction will eventually be transferred to local state governments.

The annual investment budget for the construction of new highway infrastructure and maintenance of existing highways is obtained from the Federal Government (fiscal funds). The proposed budget is drawn up each year by the Treasury Secretariat (SHCP), (the federal department in charge of tax collection and budgeting) and authorized by the Presidency.

During the past four years (1998–2001), the annual investment budget for highway construction has been around 1,500 million dollars (out of a total highway budget of around 1,650 million dollars). Of this 1,500 million dollars, some 36% was used for the conservation and improvement of the toll free network, 58.5% for the modernisation of federal highways and 5.5% for the operation, conservation and improvement of toll roads. In contrast, between 1994 and 1997, the annual federal budget for highway construction and maintenance was around 400 million dollars, with some 55% used for the conservation of toll-free roads and 45%for the construction and modernisation of federal paved highways

Use of these amounts has led, in 2001, to the length of interurban paved highways stated at the beginning of this section. Between 1998 and 2001, the 14 main highways in this country with a total length of approximately 19 thousand Km., were modernised at a rate of between 200 and 300 Km per year. In 1998 the paving condition of the toll free network was considered to be good in some 40%, fair in another 40% and poor in the remaining 20%; compared to 40% good, 45% fair and 15% poor in 2001. The toll roads were considered to be 55% in good condition and 45% fair in 1998 compared to 45% good and 55% fair in 2001.

State of the art technology has been installed for automatic toll collection on toll highways.

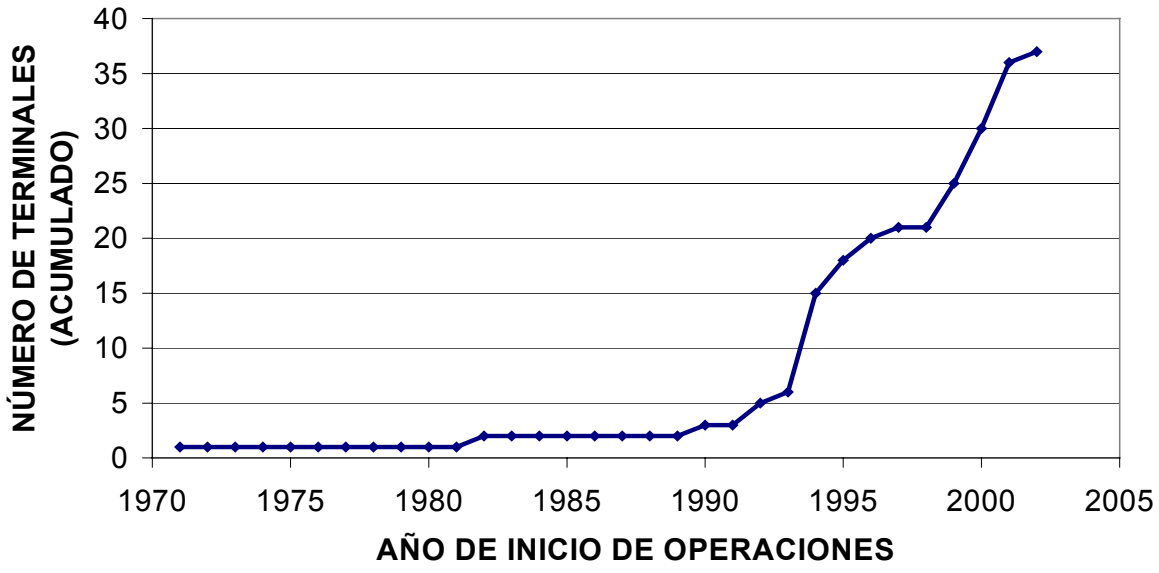
The 31 state networks (one for each state), have suffered from a reduced budget since 1986, which has led to a definite deterioration in their condition (up to 30% in 2001), except for 6 states in which the highways have been satisfactorily maintained.

It should be pointed out that the highway network in Mexico carries some 98.5% of passenger Transportation and 58.5% of motor carriers, which together with an annual average growth rate of between 5 and 7%, will impose an important challenge for the expansion and modernisation of highway infrastructure and consequent requirement for additional resources. For this reason, possibilities are being explored for the creation of a fund arising from fuel tax and other vehicular consumption, exploitation of passage rights and alternative financing.

In Mexico at the present time (2001) there are some 15 million vehicles, which gives us a figure of 150 per 1000 inhabitants. This is significantly lower than more developed countries, (around 500 vehicles per 1000 inhabitants). Of the total mentioned in this country, 0.8% are passenger buses, 31.5% are motor carriers or haulage trucks, 65.9% are cars and y 1.8% are other types of vehicle. There are some 60 thousand registered passenger vehicles and 380 thousand motor carriers or haulage vehicles, of which 88% are for general and 12% for specialised motor carriers. In 2001, passenger vehicles Transportationed 2,700 million passengers a total of 385 thousand million per Km. Motor carriers was Transportationed a total of 200 thousand million tons per Km. The four last figures show an average growth rate of around 5% between 1998 and 2001.

Container Transportation is still small in Mexico, amounting to less than 1% of the total tonnage Transportationed by road, (by rail the figure is around 3% for both container and piggy back Transportation). Both road and rail container Transportation are mainly for international trade, (imports being double that of exports in both cases). The rate of annual average growth increased significantly (around 5%) between 1998 and 2001.

The following chart shows the accumulated growth of multimodal and intermodal motor carriers transfer since the 70's. It is obvious that over 80% began operations after 1990, showing a significant since then. In 2001, there were over 35 in the country.



THE YEAR IN WHICH OPERATIONS BEGAN

Figure 1. Accumulated Increase in the number of Multimodal and Intermodal Motor carriers Transfer Terminals

C10. Technical Committee on Urban Areas and Integrated Urban Transport

Between 1980 and the year 2000, while the rural population of the country remained steady at around 40 million, the urban population (in places with over 15 thousand inhabitants) doubled from 30 to almost 60 million, excluding, of course, the section which emigrated to the U.S.A. This growth in urban population corresponds to an average annual increase in the order of 5%.

These figures reveal the enormity of population increase experienced by urban areas (especially state capitals and the most important productive and tourist areas of the country as well as land borders and sea ports). In turn, this has led to a great increase in the volume of urban vehicles. Faced with this challenge, the most relevant improvement actions taken between 1998 and 2001 were the following:

- An increase in the coverage and capacity of mass transit networks (e.g. the extension by some 15 Km of Line B of the Mexico City subway system or Metro).

- The increase in the number of vehicles in circulation has led to air pollution problems, necessitating the substitution of vehicles by others with anti-pollution devices. For the same reason, restrictions have been imposed to limit the number of vehicles in circulation (e.g. one day ban per week for cars in Mexico City) and an exhaust checking program takes place throughout the country.

- In order to limit the entry of vehicular traffic into city centres, by-passes have been constructed and several more are under study.

- Several major cities are analysing the possibility of instituting suburban light rail services so as to offer mass Transportation between the suburbs to the inner city.

- There are programs for the revision of legal regimes for public Transportation in order to implement the integration of a greater number of Transportation workers so as to improve the quality of services offered, with new vehicles, training programs etc.

- State of the art technology has been installed to improve urban and suburban Transportation (synchronising signal systems in critical areas of the city, CTV for streamlining emergency service provision etc.).

C14. Technical Committee on Sustainable Development and Road Transport

The definition of sustainable development accepted in Mexico is the following: *"a sustainable development is that in which there is stability of physical and social systems, attained by satisfying present needs without compromising the capacity of future generations to satisfy their own needs"*. Thus, in the case of Transportation, the term sustainable development is understood to consist of three components: firstly the socio-economic factor permits the infrastructure and organization required for Transportation; next the ecology or environmental factor takes into account the investment needed and alternative Transportation means, land use etc., together with the energy used and emissions produced; the social factor takes into account adequate access to Transportation services by all sectors of society.

For highway Transportation, the C4 Committee takes the socio-economic factor into consideration. In the case of the ecology-environmental factor, the impact of highway traffic on the environment has been evaluated since the beginning of the last ten years, given the importance of environmental factors for the planning, project, construction and maintenance of highway infrastructure. This type of evaluation has been modified according to changes in legislation and at the present time when there is a law in force The Regulations of the General Law for Ecological Balance in Matters with an Environmental Impact. These regulations set the standard for projects for new highways under the control of the Transportation and Communications Secretariat as web as those under concession. Due to the decentralization of environmental matters since 1988, each state must evaluate the environmental impact of highway projects according the said Law.

Matters concerning the social factor are split. One allocates a large part of the budget to federal highways (24%) to the construction and maintenance of feeder and country roads so as to provide access to Transportation for those who live far from population centres and another, since 1997, operates a safety system to reduce the number of accidents on federal highways. The latter works in conjunction with different public and private organizations aiming to reduce the number of road accidents.

In Mexico, the majority of road deaths are produced by automotive accidents, amounting to some 13 thousand per year, followed by rail deaths with fewer than 200 per year and airline accidents causing 60 per years etc. In road deaths, the figure of 13 thousand gives a rate of 13 deaths for each 100 million inhabitants. This puts Mexico in the 11º place among the countries of the OCDE.

The Federal Highway Network records some 60,000 accidents per year, leading to 5,000 deaths, 35,000 injuries and 100 million dollars' worth of material damage. Of the annual number of accidents, 6.1% cause death or deaths, 22.3% cause injuries and 71.7% just material damage. The accidents on this network amount to 40% of all road accidents and 14% of the total number of all accidental deaths (including those in the home, at work or by natural disasters etc.). The cost of accidents on the Federal Highways amounts to about 1.2 thousand million dollars or 0.3% of the GIP.

A Committee has been formed as part of this strategy, to be in charge of coordinating the activities of different organizations, both public and private. Its official name is the National Committee for the Prevention Of Accidents On Federal Highways (CONAPREA). Actions defined for technical groups are carried out according to different headings (planning, strategy, traffic school or education, legislation, engineering, publicity etc.). These groups are made up of people from the technical sectors of participating organizations. Both the CONAPREA and its technical groups meet regularly and as a result of these meetings have drawn up working plans which will be implemented year by year. They include activities of the following types:

- National Campaign for Traffic School and Driver Awareness.
- Compulsory Training Program for Highway Truck Drivers.
- National Training Program for all Drivers.
- Modernisation and Improvement Program for Trucks and Buses
- Program to Improve Security Systems in New Vehicles.
- Program to Modernise Infrastructure for the Prevention of Accidents on Federal Highways.
- Nation Program for attention to areas with a high accident rate ("Black Spots") in the Federal Highway Network. It should be pointed out that in 1997, the SCT invested some 2.4 million dollars for the improvement of over 700 black spots. In 1998, this investment was half that amount but in 2002 some two million dollars will be spent on the improvement of 204 black spots.
- Program for the Modernisation of Legal Affairs Concerning Road Transportation and Safety
- Program for Municipal and State Integration of Laws Concerning Road Transportation and Safety
- Program for Inspections and Standard Setting
- Program for Compulsory Insurance against Third Party Damage
- Program for Financing Road Safety on Federal Highways

- Program for Emergency Disaster Aid (especially in the case of Transportation carrying hazardous materials and residues).
- Program for Systems and Processing of Accident Reports
- Program for Publicity Campaigns
- Program of Attention to Injuries

As a result of the implementation of these plans, between 1997 and 2001, the number of accidents per year increased by 1.3%, with a traffic increase of 7.4%. This means an overall reduction of 3.6%.

C19. Technical Committee on Freight Transport

Due to its direct or indirect link with most industrial and comercial enterprises, the Transportation sector is strategically important for the country's economic activity, generating some3.5 million jobs, either directly or indirectly. This is the most important type of Transportation in the country.

Because of the way in which they are organised, passenger services are usually owned by companies while in the case of motor carriers Transportation some 55% are owned by small companies or self employed owner-drivers.

The updating of legal matters, the reinforcement of supervision, the decrease in irregularities and the simplification of procedures are bringing results. Now the haulage contractors have clear rules to follow and well defined responsibilities.

In order to encourage and consolidate the increase in motor carriers Transportation, its modernisation and improvement of services offered benefit both users and companies.

There is a project to reform the Law for Highways, Bridges and Road Transportation, with the agreement of the appropriate Chambers of Commerce. The principal changes will concern reason for revoking the Service, registration of vehicles for hire, a creation of guarantee funds for both federal and private Transportation, and a means of preventing tow trucks and heavy duty trucks for the Transportation of hazardous materials from carrying normal motor carriers. Responsibility will also be defined for the driver and the user on the weight and dimensions established by the Rules for Land Transportation of Hazardous Materials and Residues, their Weight and Size.

Thus, progess has been made in the standardization and technical specification of vehicles as web as in schemes for supervision and control, according to the NAFTA and other international treaties.

The NAFTA, which came into force on January 1 1994, is the basic document regulating trade between Mexico, the USA and Canada. According to these rules transborder crossing between the four US border states and the five Mexican border states was to be opened on December 18 1995. Fixed schedule passenger bus service between Mexico and the USA was to operate as of January 1 1997. However, the US government has postponed the opening of the border to Mexican motor carriers Transportation until certain vehicular safety measures have been taken. The Mexican Government formally requested the setting up of a Panel for Controversy Solution in order to settle this matter. The panel decided in favor of Mexico in 2001. The following year, a formal request to operate in the USA was made by several Mexican motor carriers carriers although the strict rules imposed by that country practically impede border crossing. As long as the border remains closed to Mexican motor carriers carriers, they are only allowed to operate within some 50 Km on either side of the border. Commercial passenger vehicles are not completely restricted by this limit.

Technological innovations have been mainly developed in the private motor carriers Transportation service.
Due to the sinuous topography of this country, heavy duty Transportation requires increased engine potency and efficiency so as to reduce Transportation times, Furthermore systems of auxiliary brakes have been installed (anti-block and electromagnetic) as well as new coupling systems, leading to safer and more economical operations

The use of Global Positioning Systems has become a practical low cost means of increasing safety for both units and personnel. It also helps in fleet administration as it permits remote monitoring of the vehicle. It is estimated that 6% of motor carriers Transportation use some locating system of this type.

Automatic toll collection means more efficient toll collecting as well as better fleet administration.

In cooperation with the USA and Canada, possibilities are being studied for the use of Information Technology Systems to facilitate border crossings between the three countries by individuals, vehicles and merchandise.