


Annual Report 2002



 Jernbaneverket

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*Cover: Nina Rognved, construction supervisor, in the tunnel under construction between Jong in Bærum and Asker station.
Cover photo: Ole Walter Jacobsen*

Photo: Rune Fossum, Helge Sunde, Njål Svingheim, Jofri Lunde.



Director General Steinar Killi

Director General's review

Norway's railways are in transition. Like most other European countries, Norway has signed up to international agreements that pave the way for greater competition on the rail network. In the first instance, this will apply to freight traffic with effect from 15 March 2003. The Government of Norway has also decided to put passenger services on several lines out to competitive tender. These developments call for efficiency and good planning. During 2002, an extensive restructuring process got under way, designed to equip Jernbaneverket for the stricter financial regime and greater demands for efficiency that we expect to see in future. We expect to complete this restructuring in 2003.

2002 was the best year ever for rail safety in Norway. There should be no room for doubting the safety of Norwegian railways, and all the signs are that our determined safety drive in recent years is paying off. There were no fatal accidents involving passengers or railway staff, and no-one was killed on level crossings. This is an encouraging development. Three people died after trespassing on or near the railway.

The Norwegian rail network is in the process of modernisation. In 2002, work continued on the new double track between Asker and Sandvika, while other lines were modernised by increas-

ing the loading gauge and installing automatic train control. Capacity on the Vestfold line increased by over 16% when the new passing loop at Nykirke opened. Unfortunately some Oslo suburban lines and the Bergen–Arna section are now overloaded, operating at full capacity during the rush hour. This means that Jernbaneverket is unable to accommodate the demands of train operators for more train paths.

There is an ongoing debate on rail's future. As the bus industry is deregulated, the railway is facing increased competition. Competition for public funding for infrastructure works has also intensified. Instead of maintaining its competitiveness, as originally envisaged by the National Transport Plan 2002–11, rail's position is being weakened. Only two years into the plan, there is already an accumulated shortfall of NOK 1.1 billion in rail investment. As a result, Jernbaneverket has been forced to revise its previously agreed plans for network development.

During 2002, Jernbaneverket was involved in interdepartmental work to prepare a basis for the National Transport Plan 2006–15. As part of this process, an environmental vision statement for the Norwegian transport sector was drafted, stating that transport must not cause serious harm to people or the

environment. Environmental management forms an integral part of Jernbaneverket's management systems.

In summer 2002, Jernbaneverket restructured its Traffic Management function, giving it off from the regions into a separate department. The telecommunications business, BaneTele AS, was transferred entirely to the Ministry of Trade and Industry.

At 31 December 2002, Jernbaneverket had 3 536 permanent employees, 41 fewer than at the previous year-end. Jernbaneverket is a changing organisation, and as in previous years, our staff have shown a great deal of loyalty and flexibility. I should like to thank them all for their hard work in 2002.

Steinar Killi



What is Jernbaneverket?

Jernbaneverket reports directly to the Ministry of Transport and Communications. The Ministry monitors the activities of Jernbaneverket through regular departmental meetings and periodic reports from Jernbaneverket.

Jernbaneverket is responsible for:

- Developing and operating a rail network that meets the requirements of society and the market in terms of safety, accessibility, speed, axleload, train frequency, loading gauge, comfort, ambience, environmental protection and public information
- Railway stations and terminals, including public spaces, access, car parks and other public facilities necessary for users of rail services
- Timetabling, i.e. allocating train paths to operators
- Traffic management, i.e. operational control of traffic on the rail network
- Studies and planning in the rail sector
- Entering into track access agreements with train operators licensed to run services on the national rail network

The public rail network is a vital part of the infrastructure of society. Development and operation of the network is therefore a socioeconomic task, which has to be viewed in the same context as other socioeconomic activities.

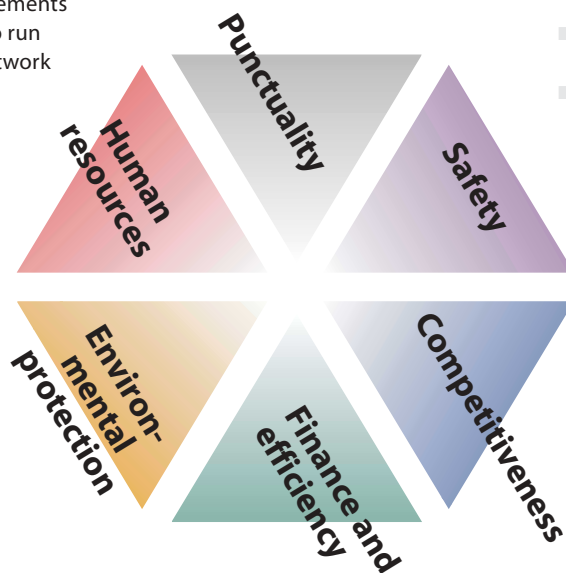
Jernbaneverket aims to help the country achieve its transport policy objectives and to promote rail as a safe, competitive form of transport, forming part of an integrated network.

Jernbaneverket has drawn up strategies and principal objectives for the following six core areas:

These objectives are intended to provide direction for the internal management of the business.

Jernbaneverket's principal objectives are:

- Rail transport must not result in loss of human life, serious human injury, or serious damage to rolling-stock or the environment (the zero objective). All changes must be geared towards improving safety, to ensure that rail remains the safest form of land-based transport.
- Jernbaneverket must make better use of resources in exercising its responsibilities and conducting its operations.
- Jernbaneverket must be an attractive workplace.
- Jernbaneverket must work to increase rail's market share where rail transport is socioeconomically viable.
- At least 90% of all trains must run on time.
- Jernbaneverket must reinforce the environmental benefits of rail transport.



Organisational structure

The Director General is the chief executive of Jernbaneverket.

The Head Office is in overall charge of coordinating Jernbaneverket's operations, and sets the conditions for use of the public rail network, train services and associated activities. This includes safety-critical activities such as designing and maintaining safety management systems, and carrying out safety analysis.

The four regions play the role of owner in managing the national rail network.

The Traffic Management department is in charge of traffic management at operational level. Its principal responsibilities are as follows:

- Train control and dispatching, and control of the overhead power supply to electric trains
- Passenger information systems (plat-

form indicators, monitors, signage, information boards, public address systems, online information, etc.)

- Capacity allocation and timetabling, including analysis of optimum connectivity, punctuality and speed

The Infrastructure Construction department acts as developer for railway construction projects, from the detailed planning stage through to completion of the new infrastructure.

The supplier units, which supply goods and services to Jernbaneverket and external clients alike, are:

- Railway Production (BaneProduksjon), which supplies rail-related contracting services using light machinery
- Railway Contractors (BaneService), which supplies rail-related contracting services using specialised equipment and heavy machinery

- Railway Consulting (BanePartner), Jernbaneverket's consulting engineers
- Electric Power Supplier (BaneEnergi), Jernbaneverket's electricity supplier
- Telecommunication Services (BaneTele AS), which on 1 July 2001 was reconstituted as a limited company. Initially the company was wholly owned by Jernbaneverket, but on 20 December 2002 it was transferred to the Ministry of Trade and Industry.

The Norwegian Railway Museum (Norsk Jernbanemuseum) is in charge of historical documentation and promoting Norwegian railway history.

Jernbaneverket's organisational structure is currently under review. A new structure will be put in place during 2003.

Organisational chart, 31 December 2002



Safety

2002 was the best year ever for rail safety in Norway. There were no fatal accidents involving passengers or railway staff, and no-one was killed on level crossings. There were no collisions between trains and only four derailments on the entire network. It is vital to keep our eye on the ball where safety is concerned. Safety is something that has to be created – and recreated every day.

Jernbaneverket's safety philosophy is that rail transport must not result in loss of human life, serious human injury, or serious damage to rolling-stock or the environment (the zero objective). Our overall safety objective is to maintain existing levels of safety, and all changes must be geared towards improving safety.

The value of rail transport is created in a value chain consisting of infrastructure, traffic management and train operations. The risk of serious transport-related harm to people, the environment and rolling-stock is the sum of the risk factors from each of these three components and the interaction between them. It is this sum of the risk factors in the rail system (systemwide safety) that we must control if we are to create and maintain a railway with acceptable levels of safety.

Safety management involves being aware of the risk factors inherent in the activity for which one is responsible. Jernbaneverket is responsible for infrastructure and traffic management, and the train operators for train services. By virtue of its responsibility for capacity allocation on the network, it is Jernbaneverket that monitors and controls systemwide safety on a continuous basis. Jernbaneverket itself controls the risk factors in infrastructure and traffic management. Through the timetabling process, the train operators provide an overview of the risk factors in train operations.

Jernbaneverket charts the risk profile of the national rail network by means of line-by-line risk surveys and related safety monitoring plans. The risk surveys for individual lines are the starting point for all safety-related analysis of infrastructure, traffic management and rolling-stock.

In 2002, three people died in accidents on the Norwegian rail network. This was a reduction of three on the previous year's casualty figure (6) and sig-

Operational accidents in 2002

Type of accident	Incidents	Fatalities	Serious injuries ¹⁾
Collisions	9	0	1
• Train operations ²⁾	8	-	1
• Shunting	1	-	-
Derailments	6	0	0
• Train operations	4	-	-
• Shunting	2	-	-
Level-crossing accidents ³⁾	8	0	0
• Crossings with barriers, lights and claxons	2	-	-
• Crossings with gates	6	-	-
Rolling-stock fires	6	0	0
Other accidents ⁴⁾	6	3	3
Total	35	3	4

1) Serious injuries are defined as people deemed unfit to work for more than 14 days after the accident.

2) Including five collisions between trains and landslides/avalanches.

3) Collisions between road vehicles and railway rolling-stock.

4) Other accidents resulting in death or serious injury.

nificantly below the average for the past 10–15 years (10). Two of the fatalities were run over by trains, neither of them at a level crossing. The third fatality was electrocuted by high-voltage equipment.

In 1999–2001, Jernbaneverket conducted line-by-line risk surveys of its network. These surveys indicated that efforts should focus in particular on preventing major accidents and on reducing the scope for collisions with road vehicles and pedestrians at level crossings and along the line. In the light of this, we have reviewed our priorities regarding the plans to introduce centralised traffic control (CTC) and automatic train control (ATC) on the Nordland line, and ATC has been installed on a few non-CTC sections. We have also pursued some important initiatives concerning level crossings and trespassers on the line. All Jernbaneverket's railborne track machines were fitted with ATC by 1 March 2003.

Jernbaneverket stages an ongoing campaign entitled "Tougher than the

Train", aimed at children and young people, to highlight the dangers of trespassing on the railway. We are also working with Trygg Trafikk (The Norwegian Society for Traffic Safety) to promote traffic safety in schools.

Level crossings

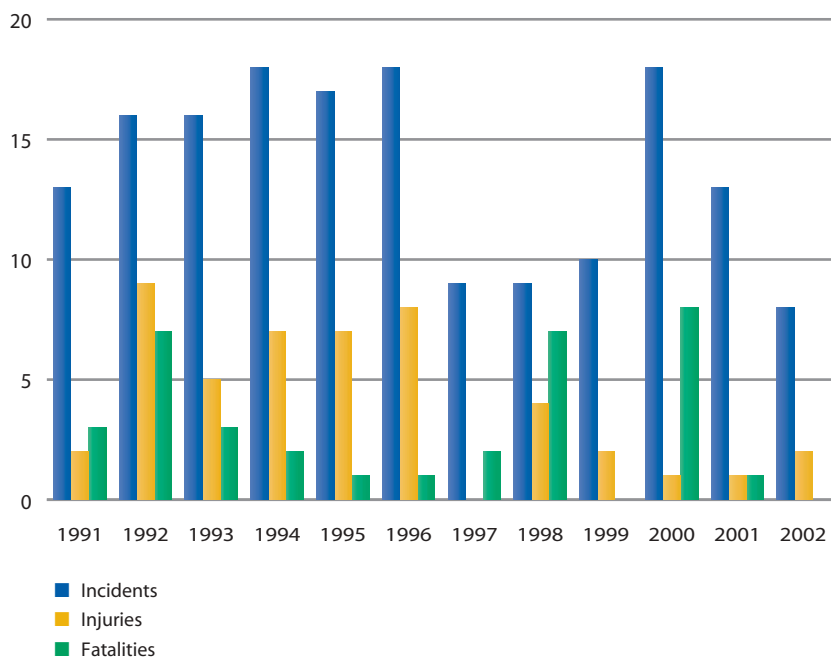
Experience shows that there is an inherent risk associated with level crossings, so Jernbaneverket has long paid particular attention to this issue.

During the year there were eight collisions between trains and road vehicles at level crossings. No-one was killed or seriously injured in these accidents, two of which occurred at level crossings controlled by traffic lights.

In only one previous year (1999) were there no fatalities (including pedestrians) at level crossings, and the number of collisions in 2002 was the lowest ever recorded.

The number of level crossings is being constantly reduced. In 2002, 118 crossings were eliminated. The table at the bottom of page five summarises level

Level-crossing accidents



crossings by line priority and type of warning system.

Work to improve level-crossing safety focused on crossings on private roads. The aim was to carry out minor improvements, to ensure that they are as safe as possible.

Level-crossing improvements in 2002

Type of improvement	Number of improvements
Elimination of crossing	118
Improved signage	768
Vegetation clearance	483
Other improvements	189
Total	1558

The most important improvement has been to ensure optimum visibility of the

railway line from road vehicles. Where vegetation blocked the line of sight, this has been cleared. Other visual obstacles have also been removed at some locations.

Another simple improvement has been the erection of signs instructing vehicle drivers to "STOP, look and listen for trains" at level crossings on all roads in daily use. Official regulatory signs have also been erected by the highway authorities at some crossings. Other measures taken include road improvements, provision of sand bins, installation of mirrors, gate improvements and closure of crossings.

On the Bergen line, a trial scheme is under way where vehicle drivers have to telephone train control before crossing the line. This is being tried at crossings where traffic levels are very low and the gates are usually locked.

Around half of the year's budget of NOK 92m was used on simple level-crossing improvements. The remainder went on larger-scale projects such as roadworks, bridges and underpasses. A total of six bridges or underpasses were built in 2002 or are under construction.

Rail traffic regulations

No matter how extensive the technical safety measures, there will always be a need for traffic regulations that must be observed by operational staff in order to maintain an acceptable level of safety on the rail network. Norway's current rail traffic regulations, developed step by step over the past century, do not really reflect modern technical standards or the expectations of today's staff.

The process of devising new traffic regulations for train operations and trackworks got under way in 1999, with the aim of introducing the new regulations in 2003/04. The regulations are being formulated in a joint project with the Norwegian Railway Inspectorate, which since 2001 has been responsible for regulations of this kind on the Norwegian rail network.

Signals passed at danger

Every year, there are a number of instances of trains passing red signals. The cause is usually (75% of cases) a technical fault with the signalling system, whereby the signal changes to red just as the train approaches, meaning it is unable to stop in time. A few cases are due to driver error.

It is vital to investigate any serious cases, and to identify solutions that may prevent a repetition. Jernbaneverket has a duty to ensure that train drivers and on-board staff are able to see and react to signals in time.

Jernbaneverket is working actively with the train operators to reduce the number of signals passed at danger.

Status of level crossings

Figures from Jernbaneverket Railway Databank as at 31 December 2002.

Line priority ¹⁾	Traffic lights	Simple warning light	No traffic signals		Total
			Road surface elements in track	No road surface elements in track	
Priority 1	11	0	28	23	62
Priority 2	113	24	329	218	684
Priority 3	132	54	902	785	1873
Priority 4	77	1	525	400	1003
Priority 5	84	0	614	249	947
Total	417	79	2398	1675	4569

1) See map on page 17

Safety on the rail network:

- Lines with centralised traffic control and automatic train control (CTC/ATC)
- Lines with cab-to-shore radio



* Centralised traffic control (CTC) means that station interlockings communicate with a central control centre.

** Automatic train control (ATC) is a collective term for automatic train-stop and automatic speed-monitoring systems. In Norway, the systems are known as DATC for partial ATC and FATC for full ATC.



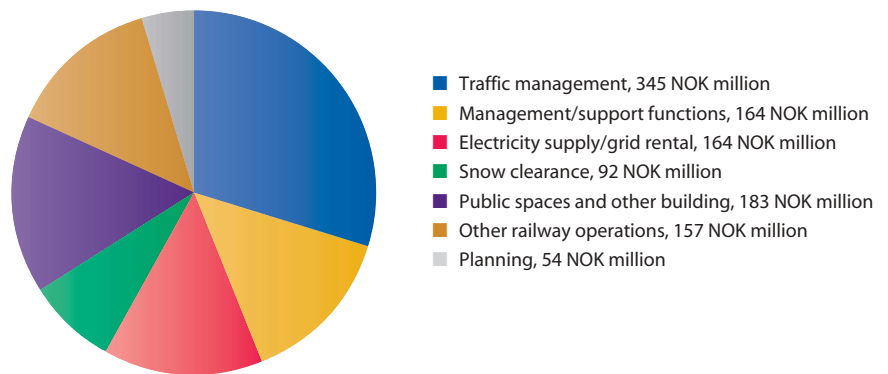
Finance and efficiency

Operations and maintenance

Operations

Railway operations comprise administration, traffic management and infrastructure operations. Traffic management involves capacity allocation, timetabling and operational traffic management (train control, dispatching and public information). Infrastructure operations, which are vital to maintaining safe and reliable train services, include tasks such as track inspections, emergency staffing, fault repairs, snow clearance, monitoring and overhauls. Figure 1 shows a breakdown of Jernbaneverket's expenditure on operations in 2002 ¹⁾.

Figure 1: Breakdown of operational expenditure in 2002



Traffic management

Jernbaneverket's traffic management function was integrated into a single Traffic Management department in June 2002. Expenditure on traffic management during the year amounted to NOK 345m.

Management and support functions

Expenditure on management and support functions totalled NOK 164m in 2002.

Electricity supply and grid rental

Rental payments to the Electric Power Supplier business for the supply of traction current totalled NOK 164m in 2002.

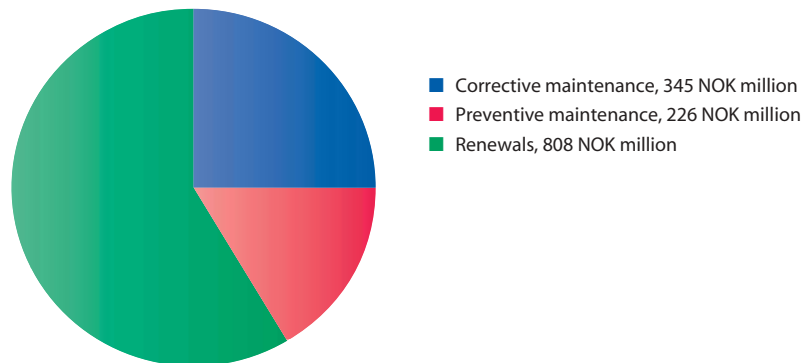
Public spaces and other buildings

This expenditure includes the leasing of public spaces at stations and connecting areas, and amounted to NOK 183m in 2002.

Planning

This heading covers planning activities up to the point at which the overall plan for a capital project is approved. It also covers some activities relating to local and neighbourhood plans produced by

Figure 2: Breakdown of maintenance expenditure in 2002



local authorities. Expenditure on planning came to NOK 54m in 2002.

Snow clearance

Expenditure on snow clearance and contingency measures was NOK 92m in 2002.

Other railway operations

This heading includes track maintenance crews, and covers activities such as track

inspections, emergency staffing and fault repairs. Total expenditure in 2002 was NOK 157m.

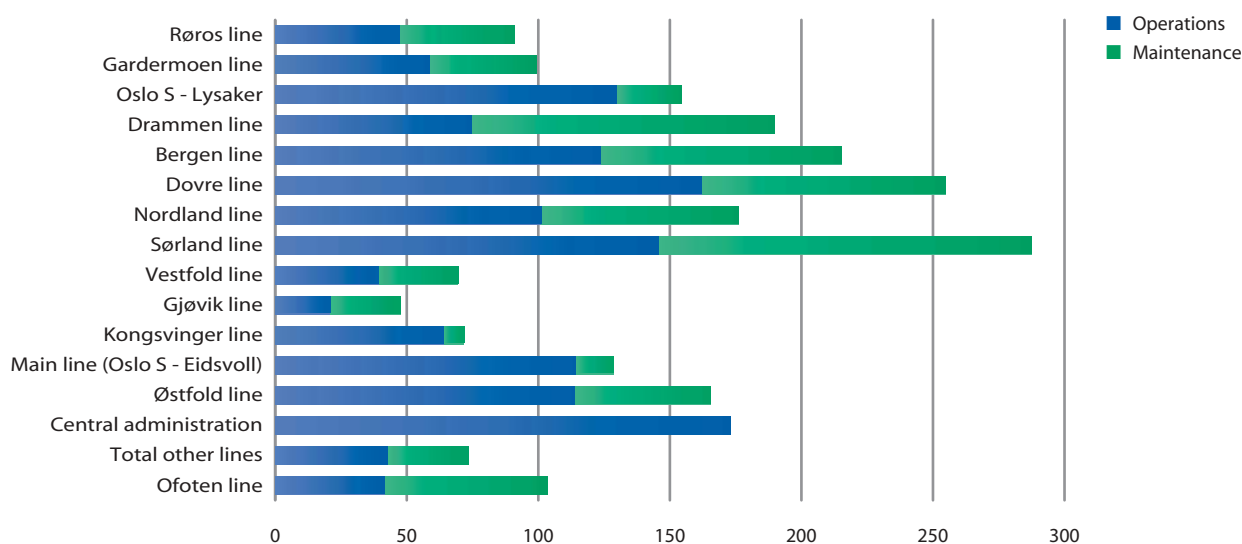
Maintenance

Maintenance operations include the replacement of components or complete installations owing to age and deterioration. Typical maintenance operations are the renewal of catenary, sig-

1) Jernbaneverket operates on the cash accounting principle, so the accounts reflect spending in the given period, which may differ from costs for the period. The diagram shows spending in relation to infrastructure and traffic management (central administrative expenses are additional).

Figure 3: Operations and maintenance costs by line in 2002 ¹⁾

(NOK million)



¹⁾ The figure shows estimated costs after calculated allocation of indirect costs. The figures do not reflect Jernbaneverket's cash accounts.

nalling systems, sleepers and rails.

Adequate maintenance is a prerequisite for maintaining safety and operational reliability, and for maintaining the value of past capital expenditure.

Maintenance falls into three categories:

- Corrective maintenance: fault repairs and emergency call-outs
- Preventive maintenance: inspections, examinations, checks, scheduled preventive repairs, overhauls, replacement of components
- Infrastructure renewal

Jernbaneverket is in the process of devising a comprehensive maintenance strategy for all lines, the objective of which is a significant reduction of the costs involved in corrective and preventive maintenance. As the permanent way is the single largest cost element, the focus will be on the maintenance of rails, sleepers, ballast and points. Work on the strategy is scheduled for completion in spring 2003, and it will then be used as the basis for the next rolling update of the National Transport Plan, covering the period from 2006 to 2015.

Scope of renewals

The following figures are an estimated average for the renewal of core infrastructure components in the years 2002–05:

Replacement of rails	30 km per year
Replacement of sleepers	36 000 sleepers per year
Replacement of points	20 sets per year
Ballast cleaning	65 km per year
Renewal of cabling	60 km per year
Renewal of catenary	40 km per year
Renewal of signalling	2.5 stations per year

The quantities reflect Jernbaneverket's maintenance plans.

Operations and maintenance costs by line

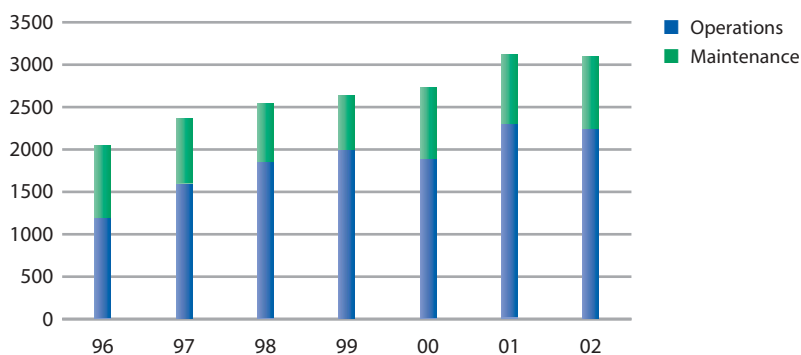
Figure 3 gives a breakdown of operations and maintenance costs by line.

Operations and maintenance costs 1996–2002

Figure 4 shows Jernbaneverket's operations and maintenance costs from 1996 to 2002 at current prices.

Figure 4: Operations and maintenance costs 1996–2002

(NOK million)

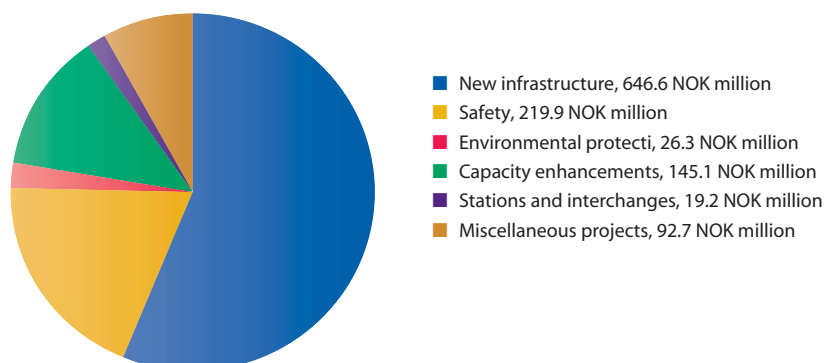


Capital expenditure – rail network development

Table 1 gives a breakdown of Jernbaneverket's spending and budget allocations under section 1350, item 30 "Investment in railway lines", along with the budgeted cost and expected final cost of the projects listed in Parliamentary Bill No. 1 (2001–02). It also covers projects in Jernbaneverket's four focus areas: safety, environmental protection, capacity enhancements, and stations and interchanges.

Figure 5 gives a breakdown of Jernbaneverket's capital expenditure in 2002 by focus area.

Figure 5: Breakdown of capital expenditure in 2002



New infrastructure

Sandvika-Asker

This project forms part of the construction of a new double-track line between Skøyen and Asker and comprises 11.6 km of new double track. Increased capacity, higher train frequencies, improved punctuality and shorter journey times are the main objectives. The project consists of two sections, Sandvika–Jong and Jong–Asker, plus the remodelling of Asker station. To accelerate the project and reduce costs, Jernbaneverket has merged the contracts for the Sandvika–Jong and Jong–Asker sections. This step was taken as a result of Parliamentary Bill No. 60 (2001–02) and the subsequent instructions issued to Jernbaneverket, in its letter of allocation for 2002, concerning efficient use of resources and management of construction projects.

Jernbaneverket has now signed a contract that will allow the project to be completed in 2005.

Lieråsen tunnel

The aim of this project is to resecure the rock inside the tunnel, so that the original operating specifications in terms of safety, speed and train frequency between Asker and Lier can be maintained. The bulk of the safety-related upgrade involves essential maintenance of the tunnel after many years of wear and tear and deterioration of concrete rendering and structures. Measures will also be taken to improve safety during construction and operation, in line with statutory requirements and modern standards. Extensive preparatory works will be carried out on the railway line before work to secure the rock com-

mences in 2005. Minor rock-securing works are being carried out annually as a stopgap measure pending full refurbishment of the tunnel. The maintenance component of the project is worth NOK 560m.

Other projects

On the Vestfold line, finishing works were carried out in 2002 on two new sections of double track near Sande and on the Nykirke passing loop. The new sections near Sande opened to traffic on 5 October 2001, and only minor finishing works remain outstanding. The Nykirke passing loop is now operational and largely complete. Only minor finishing works remain. The project has been approved by the Norwegian Railway Inspectorate.

Table 1: Capital expenditure in 2002 (NOK million) ¹⁾

	Total 2002			Accounting cost 2002			Project total		
	Allocated	Budgeted cost	Discrepancy	Budgeted cost	Accounting cost	Discrepancy	Budgeted cost	Expected final cost	Discrepancy
New infrastructure									
Vestfold line, Sande–Skoger–Åshaugen	20.7	29.1	-8.4	29.1	25.0	4.1	438.4	438.4	0.0
Vestfold line, Åshaugen–Sande–Holm	15.0	34.4	-19.4	34.4	27.1	7.3	522.8	522.8	0.0
Vestfold line, Nykirke passing loop	18.0	16.8	1.2	16.8	15.6	1.2	121.5	122.9	-1.4
Drammen line, Sandvika–Asker	517.4	443.4	74.0	443.4	533.2	-89.8	3 285.0	3 285.0	0.0
Leangen freight terminal	40.0	5.0	35.0	5.0	2.8	2.2			
Lieråsen tunnel	79.0	47.0	32.0	47.0	42.9	4.1	187.5	187.5	0.0
Other projects	0.0	23.0	-23.0	0.0	0.0	0.0			
Total new infrastructure	690.1	598.8	91.3	575.7	646.6	-70.9	5 039.3	4 556.6	
Safety	311.2	335.2	-24.0	335.2	219.9	115.3			
Environmental protection	70.0	41.9	28.1	41.9	26.3	15.5			
Capacity enhancements	118.0	183.3	-65.3	183.3	145.1	38.2			
Stations and interchanges	52.0	31.2	20.8	31.2	19.2	11.9			
Miscellaneous projects	17.7	106.9	-89.2	106.9	92.7	14.3			
Total focus areas	568.9	698.5	-129.6	698.5	503.2	195.3			
Net total, item 30	1 259.0	1 297.3	-38.3	1 274.2	1 149.8	124.5			
Section 4350, item 37	29.3	29.3	0.0	29.3	29.0	0.3			
Section 4350, items 02–18	0.0	0.0	0.0	0.0	10.9	-10.9			
Gross total, item 30	1 288.3	1 326.6	-38.3	1 303.5	1 189.8	113.8			

1) Following an internal budget review on 19 March 2002, a total of NOK 38.3m was reallocated between item 23 "Operations and maintenance" and item 30 "Investment in railway lines".

Focus areas

Safety

Jernbaneverket has a responsibility to rail users, third parties, its staff and society at large to ensure that rail transport does not result in loss of human life, serious human injury, or serious damage to rolling-stock or the environment. On the basis of thorough risk assessments, conducted largely on a line-by-line basis, Jernbaneverket's top priorities in this focus area are as follows:

- Signalling systems
- Elimination and upgrading of level crossings
- Securing against landslides and line slippage
- Communication systems, lighting, evacuation routes and marking in tunnels
- Radio communication with trains (GSM-R)
- Measures to ensure passenger safety at and in the vicinity of stations

See page 4

Environmental protection

Jernbaneverket aims to secure rail's position as the most environmentally friendly mode of transport through specific environmental standards concerning railway operations and development that protect the interests of rail users and society. Jernbaneverket's principal environmental objective is to reinforce the environmental benefits of rail transport through proper use of resources, reduced overall environmental impact, and defined, quantifiable environmental standards for our own operations, our suppliers and train operators. Rail's environmental impact can be managed by means of good planning, environmental monitoring of construction projects, and suitable operating and maintenance procedures. The main environmental problems are noise from railway operations and impact on the natural environment and cultural heritage. Railway operations also

cause some pollution and a few unfortunate incidents such as animal fatalities and forest fires.

See page 22

Capacity enhancements

Jernbaneverket is committed to increasing the capacity of Norway's rail infrastructure where freight transport is concerned. To increase rail's competitiveness in the freight market, it is vital to improve the infrastructure to allow for larger and more frequent freight trains that meet the needs of the market. As well as increasing the loading gauge, we also have to provide sufficient passing loops, electricity supply and terminal capacity to create optimum conditions for intermodal transport (rail/road/sea). Jernbaneverket's principal objective in this focus area is to increase rail's market share where rail transport is socioeconomically viable. Jernbaneverket aims to develop a rail network with a standard and capacity that meets market demand. Network capacity will increasingly have to take account of competition between different train operators who may have sole or shared operating rights over a particular section of line. See page 16

Stations and interchanges

One of Jernbaneverket's strategies is to

develop user-friendly stations and interchanges with the emphasis on safety, accessibility, information and service. The development of station facilities must form part of a joint product-development process involving train operators, service businesses, highway authorities and planning authorities. The aim is to provide passengers with the standards they expect and are willing to pay for, and to encourage more people to use public transport. Our programme for stations and interchanges involves improving customer facilities at stations, such as access, car parks, platforms and waiting areas, travel information, and other customer services.

National Transport Plan 2002–15

Jernbaneverket adopted an action plan in October 2001 in order to specify its priorities for Norway's rail infrastructure in relation to the transport policy objectives set out in the National Transport Plan. As a result of a lower than expected budget, the action plan had to be revised in 2002. The revisions reflect the current status and expected progress of the projects planned by Jernbaneverket in the years 2002–05. The bulk of the revisions involved the scaling down of projects as a consequence of budgetary constraints.

State Accounts for 2002

Jernbaneverket's budget allocations for 2002 under section 1350, Expenditure, and section 4350, Income, were NOK 4 244.9m and NOK 469.4m respectively.

Jernbaneverket's accounts reconcile the actual expenditure and income figures for the year with the budget allocations under section 1350, Expenditure, and section 4350, Income. The budget allocations are based on:

- The "Blue Book" for 2002 ¹⁾

- Letter from the Ministry of Transport and Communications dated 15 March 2002 regarding the carry-forward of NOK 9.8m from 2001 under section 1350, item 25 "Operations and maintenance, Gardermoen line"
- Letter from the Ministry of Transport and Communications dated 12 July 2002 regarding a reduction of NOK 3.3m in the allocation under section 1350, item 23 "Operations and maintenance", following the decision of the

1) The final budget approved and published by the Norwegian Parliament for the coming fiscal year is known as the "Blue Book". It sets out the national budget, including social security expenditure, and also specifies financial parameters for government departments and agencies. Individual ministries make budget allocations to their subordinate agencies on the basis of the "Blue Book".



Norwegian Parliament to cut departmental expenditure by NOK 65.0m [Parliamentary Bill No. 63 / Recommendation to Parliament No. 255 (2001–02)]

- Letter from the Ministry of Transport and Communications dated 22 January 2003 regarding a reduction of NOK 3.3m in the allocation under section 1350, item 23 “Operations and maintenance”, following a cut of NOK 84.0m in the national budget [Parliamentary Bill No. 40 / Recommendation to Parliament No. 90 (2002–03)]

With effect from December 2002, the government loan to BaneTele AS was transferred from the Ministry of Transport and Communications to the Ministry of Trade and Industry. As a result, the requirement for repayment to Jernbaneverket under section 4350, item

91, was no longer applicable. This is reflected in the figures below.

Authorisation to offset excess expenditure against excess income

In the “Blue Book” for 2002, Jernbaneverket was authorised to use excess income under section 4350 to cover excess expenditure under section 1350 as follows:

May exceed budget allocation under	By amount equivalent to excess income under
Section 1350, items 23 and 30	Section 4350, items 02 and 06
Section 1350, item 25	Section 4350, item 07
Section 1350, item 30	Section 4350, item 37

In addition to the authorisations outlined above, Jernbaneverket is authorised to increase expenditure under section 1350, items 23 and 30, if this can be offset against income under section

4350, items 15–18. Please refer to the State Budgeting Guidelines, Part II, section 6.6, regarding the changeover to direct reimbursement of sick pay.

Section 1350: Expenditure (NOK million)				Approved budget	Accounts
Item	Description	“Blue Book” for 2002	Adjustments		
23	Operations and maintenance	2 864.9	–6.6	2 858.3	3 094.4
25	Operations and maintenance, Gardermoen line	88.5	9.8	98.3	99.4
30	Investment in railway lines	1 288.3	0.0	1 288.3	1 208.9
Total, section 1350		4 241.7	3.2	4 244.9	4 402.6

Section 4350: Income (NOK million)				Approved budget	Accounts
Item	Description	“Blue Book” for 2002	Adjustments		
01	Track charges	61.8	0.0	61.8	36.5
02	Sale of equipment, services, etc.	133.9	0.0	133.9	304.3
06	Resale of electricity for train operations	155.9	0.0	155.9	169.4
07	Payment for use of Gardermoen line	88.5	0.0	88.5	72.8
15	Reimbursement for employment creation schemes	0.0	0.0	0.0	0.1
16.11	Reimbursement of salaries	0.0	0.0	0.0	5.3
16.12	Reimbursement of employer contributions	0.0	0.0	0.0	0.7
17	Reimbursement for apprentices	0.0	0.0	0.0	1.2
18.11	Reimbursement of sick pay	0.0	0.0	0.0	37.0
18.12	Reimbursement of employer contributions on sick pay	0.0	0.0	0.0	5.3
37	Contribution to infrastructure works	29.3	0.0	29.3	29.1
91	Repayment of loan to BaneTele AS	196.0	–196.0	0.0	0.0
Total, section 4350		665.4	–196.0	469.4	661.5





Human resources

Personnel and working environment

Permanent workforce

At 31 December 2002, Jernbaneverket had 3 536 permanent employees, 41 fewer than at the previous year-end.

Overtime

Overtime payments in 2002 accounted for 10.9% of permanent salaries. The corresponding figure for 2001 was 10.5%, so overtime has increased compared with previous years.

Sick leave

The number of working days lost through illness in 2002 was 7.2%, an increase from 6.9% in 2001 and 6.5% in 2000. The situation at Jernbaneverket reflects the trend in society at large: short-term absenteeism is stable and low, and the bulk of the increase is in long-term sick leave. The scheme to extend self-certification will continue, as this is having a positive effect on short-term absenteeism. In the case of long-term sick leave, the focus over the coming years will be on improved monitoring from the first day of absence, and

close dialogue between management and the individual employee. Jernbaneverket has signed up to an "inclusive workplace" scheme, which we expect will have benefits in terms of both absentee monitoring and preventive measures.

Injuries leading to absence

The number of injuries leading to absence increased over the year to 31 December 2002. In contrast to the clear reduction seen in recent years, the number of injuries in 2002 was up by around 30% on the previous year. Efforts will therefore focus on reducing this figure in the years ahead.

Follow-up of staff survey

A process aimed at making Jernbaneverket an efficient, modern organisation was under way throughout 2002. The staff survey planned for 2003 will therefore be postponed until the new organisational structure is in place.

Skills development

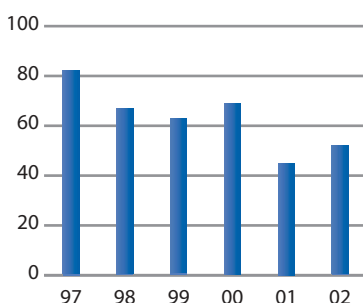
A new curriculum was drawn up for training in traffic management.

During the year, Jernbaneverket collected data on all formal qualifications possessed by staff within the organisation. These require to be built upon and kept up to date. The qualifications catalogued so far are degrees and diplomas, courses, safety certificates and other certificates.

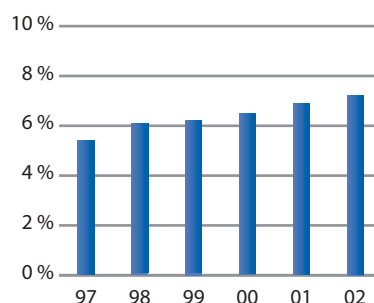
Staff suggestions programme

Activity on Jernbaneverket's staff suggestions programme remained at similar levels in 2002 to those seen in 2001, the first year of the programme. It was decided during the year to record all suggestions for improvements in a separate category in the Synergi database. This will be implemented in 2003.

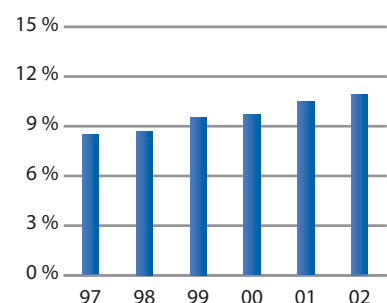
Number of injuries leading to absence



Days lost through illness %



Overtime as % of permanent salaries





Competitiveness

The Norwegian railway network

The Norwegian railway network is in the process of modernisation. In 2002, work continued on the new double track between Asker and Sandvika, while other lines were modernised by increasing the loading gauge and installing automatic train control. Most lines were built as single tracks between 100 and 150 years ago.

Capacity

Rail network capacity is expressed as the number of trains that can operate over a given section of line per hour or per day, and is calculated using a method devised by the International Union of Railways (UIC). There are many factors influencing capacity, including the number, length and separation distance of passing loops, the length of route with double track, the line speed, and the power supply. Other factors are the number of tracks and capacity at termini, and the loading and unloading capacity of freight yards.

Where passenger services are concerned, capacity can also be expressed in terms of seat-kilometres, i.e. the number of seated passengers that can be carried over a given section in a given period. However, the number of seat-kilometres, and hence the effective

capacity utilisation for the section, is determined by the type and quantity of rolling-stock deployed by the train operators.

In 2002, daily capacity on the Vestfold line between Drammen and Sandefjord increased by 16.2% when the new passing loop at Nykirke came into operation. This improvement also brought a slight reduction in journey times, as well as a more reliable timetable now that the 13 km single-track section between

Holmestrand and Skoppum is punctuated by the new passing loop. This greater reliability means that the knock-on effects of any delays will be reduced.

As in 2001, there were a number of temporary capacity reductions (speed restrictions, line closures and train cancellations) owing mainly to infrastructure works. Jernbaneverket is working to reduce the extent and duration of these temporary restrictions and to improve track availability.

Bottlenecks

In line with expected changes in Norwegian railway legislation from 15 March 2003, Jernbaneverket declared Oslo central station (Oslo S) and the Skøyen–Asker, Oslo S–Ski and Bergen–Arna sections to be overloaded.

These sections operate at full capacity for long periods in the rush hour and are therefore unable to accommodate the demands of train operators for more train paths.

Capacity is well utilised at certain times of day on most lines in eastern Norway and on local lines around Stavanger and Trondheim.

Loading gauge

Loading gauge is one of the key capacity parameters for freight traffic.

Work on loading-gauge modifications has, over the years, been a high priority for Jernbaneverket, in part to bring Norway into line with international standards and to match popular load formats used in road transport. This applies in particular to loading gauge UIC P407, which allows higher loads and hence more efficient container traffic, and above all enables semitrailers to travel by rail.

Piggyback traffic, which has shown enormous potential on national and especially international routes, is a growth segment. To a large extent, this involves temperature-controlled consignments with a high goods value, a segment in which rail offers a competitive transport option. What is more, such traffic is largely won over from the roads,

Network Statement

In compliance with future Norwegian railway legislation (effective 15 March 2003), Jernbaneverket began work on a catalogue of Norway's rail infrastructure. This catalogue contains information on the type of infrastructure available to companies wishing to run train services, the terms of access, and the related infrastructure that will be made available to companies holding operating rights for particular parts of the national rail network. The document also contains

information on charging principles and rates, including proposed changes to track charges, and the principles and criteria for capacity allocation.

The Network Statement was published on 15 March 2003 and is available on Jernbaneverket's website at www.jernbaneverket.no.

through the use of wagons designed for intermodal traffic.

P407 now applies to the entire Norwegian rail network apart from the following mainline sections and branch lines: Bergen–Hønefoss (Bergen line), Narvik–Vassijaure (Ofoten line), Elverum–Kongsvinger (Solør line), Hokksund–Hønefoss (Randsfjord line), Drammen–Eidanger (Vestfold line), Roa–Gjøvik (Gjøvik line), Grong–Namsos, Kongsberg–Rollag, Asker–Spikkestad, Nordagutu–Notodden, Nelaug–Arendal, Eina–Dokka.

Upgrading to P407 standard will continue, with the Bergen and Ofoten lines scheduled for completion in 2003. For the time being, the Ofoten line is cleared for P403 traffic.

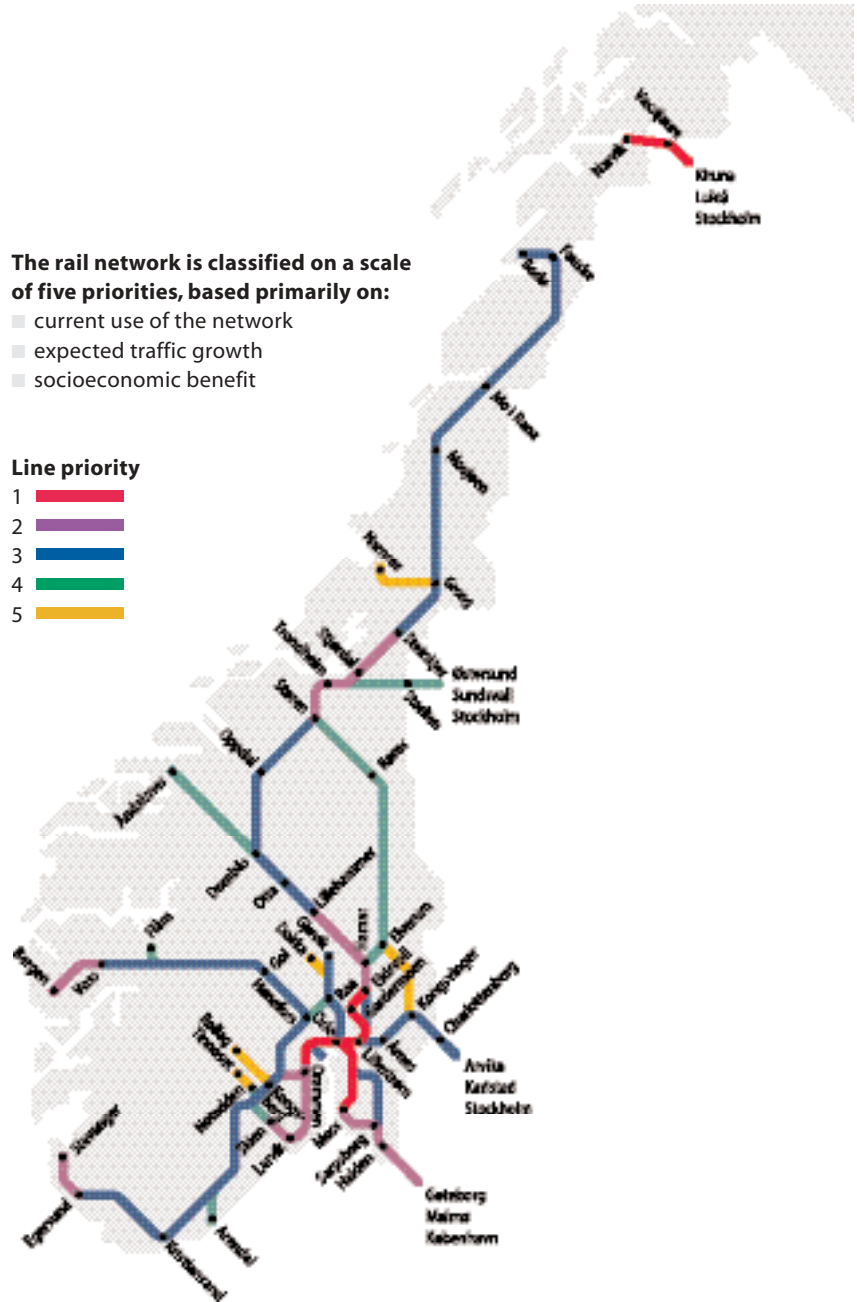
For international traffic, the priority is to adapt parts of the network to the international loading gauge RIV-3.2, which allows the use of larger, more modern wagons. In effect, RIV-3.2 is a standard loading gauge for the European rail network north of the Alps. At present, this loading gauge is permitted only on the Kongsvinger line.

The rail network is classified on a scale of five priorities, based primarily on:

- current use of the network
- expected traffic growth
- socioeconomic benefit

Line priority

- 1 █
- 2 █
- 3 █
- 4 █
- 5 █



Loading gauge: The loading gauge for each line indicates the maximum permissible height and width of loaded rolling-stock on that line.

Gauge code: A specified standard loading gauge, indicating the maximum height and width for particular cargo types. UIC P403 and UIC P407 are two examples of international gauge codes. For instance, UIC P407 is equivalent to a semitrailer 4.07 metres in height and no more than 2.6

metres wide transported on open wagons with the wagon floor 0.33 metres above the railhead.

RIV 3.2: RIV is an abbreviation for Regolamento Internazionale Veicoli – the international agreement governing the exchange and use of wagons between railway undertakings. RIV 3.2 is a specific wagon profile within which most large enclosed wagons fall.

Key figures for the national rail network

Line	Route km	Double track km	Passing loops >600m	Bridges	Tunnels	Level crossings
● Nordland line (Trondheim – Bodø)	729	–	24	361	156	899
■ Sørland line (Drammen – Stavanger)	545	–	17	495	190	159
■ Dovre line (Eidsvoll – Trondheim)	485	–	36	384	42	407
● Røros line (Hamar – Støren)	383	–	7	291	6	517
■ Bergen line (Hønefoss – Bergen)	372	–	18	192	155	306
■ Østfold line, west	170	63	8	190	16	96
■ Vestfold line (Drammen – Skien)	148	18	–	120	16	173
■ Gjøvik line (Oslo S – Gjøvik)	124	3	2	102	7	158
■ Kongsvinger line	115	–	7	49	–	96
● Rauma line	114	–	1	100	6	246
● Solør line	94	–	–	31	–	231
■ Østfold line, east	80	–	1	42	2	123
● Meråker line (Hell – Storlien)	71	–	–	64	1	62
■ Main line (Oslo S – Eidsvoll)	68	21	6	62	2	10
■ Gardermoen line (Etterstad – Eidsvoll)	64	60	–	37	3	–
■ Randsfjord line (Hokksund – Hønefoss)	54	–	–	27	–	121
■ Bratsberg line (Skien – Notodden, without Nordagutu – Hjuksebø)	44	–	–	57	24	56
■ Drammen line (Oslo S – Drammen)	42	42	–	58	11	2
■ Ofoten line	42	–	1	6	20	44
■ Arendal line	37	–	–	16	3	50
■ Roa – Hønefoss line	32	–	–	25	3	47
■ Flåm line	20	–	–	2	21	41
■ Spikkestad line	14	–	–	12	–	8
■ Brevik line (Eidanger – Brevik)	10	–	–	–	1	13
■ Alnabru – Loenga	7	–	–	3	–	–
● Stavne – Leangen	6	–	–	2	1	–
■ Alnabru – Grefsen	5	–	–	5	–	9
■ Skøyen – Filipstad	2	2	–	4	–	–
■ Dalane – Suldal	1	–	–	–	–	–
Total, lines with regular traffic	3 878	209	128	2 737	686	3 874
Branch lines without regular traffic	199	–	–	70	16	537
Total	4 077	209	128	2 807	702	4 411

- Electrified lines
- Non-electrified lines

Bergen line



Røros line



Ofoten line



Gardermoen line



Østfold line



Sørland line



Traffic volumes on the national rail network

Passenger traffic

On the basis of the infrastructure capacity (train paths) purchased by train operators, passenger traffic operated by NSB AS fell by 3% in terms of train-kilometres from 2001 to 2002. Airport Express services run by Flytoget AS showed no change from 2001 in terms of train-kilometres.

Freight traffic

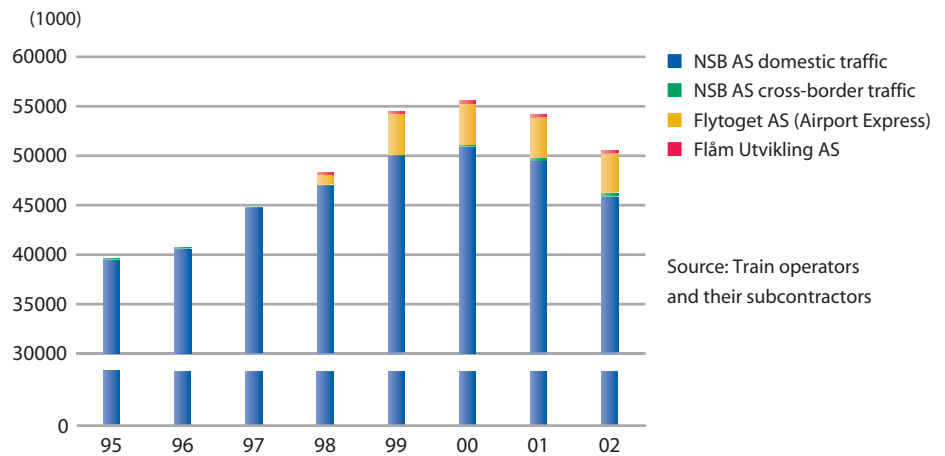
In terms of train-kilometres, iron-ore traffic on the Ofoten line operated by Malmtrafikk AS increased by 3% from 2001 to 2002, while freight traffic operated by CargoNet AS showed no change. The total freight tonnage transported by rail in 2002 was almost equal to the 2001 figure, while total tonne-kilometres fell by around 7%.

A degree of uncertainty surrounds the traffic figures, mainly because some train operators have become increasingly reluctant to disclose details of their own operations.

Future traffic

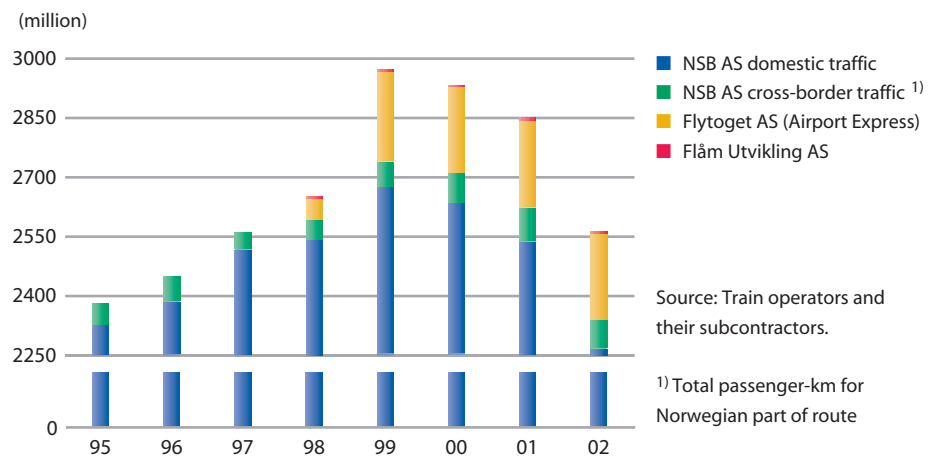
A number of prospective train operators have turned their attention to the Norwegian market in preparation for the deregulation of rail freight from 15 March 2003 and the Government's move to put publicly subsidised passenger services out to tender. Jernbaneverket has provided some assistance in an advisory capacity to prospective operators, and we expect the number of train operators in Norway to increase in 2003.

Passenger traffic, passenger journeys



Source: Train operators and their subcontractors

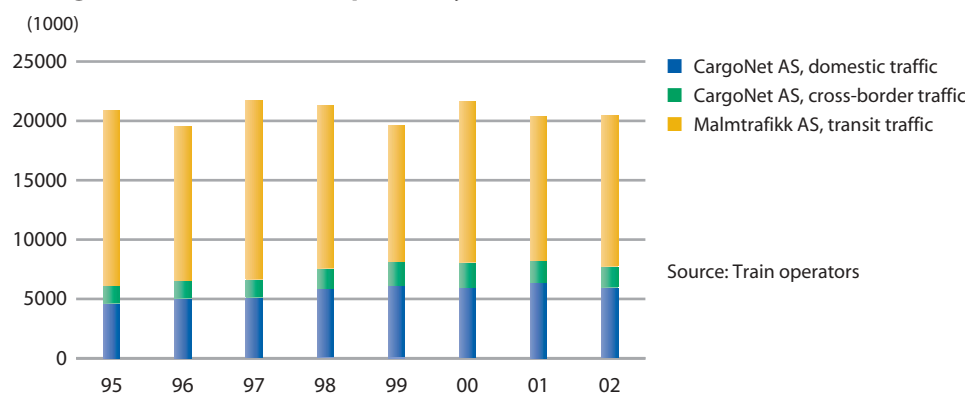
Passenger traffic, passenger-km



Source: Train operators and their subcontractors.

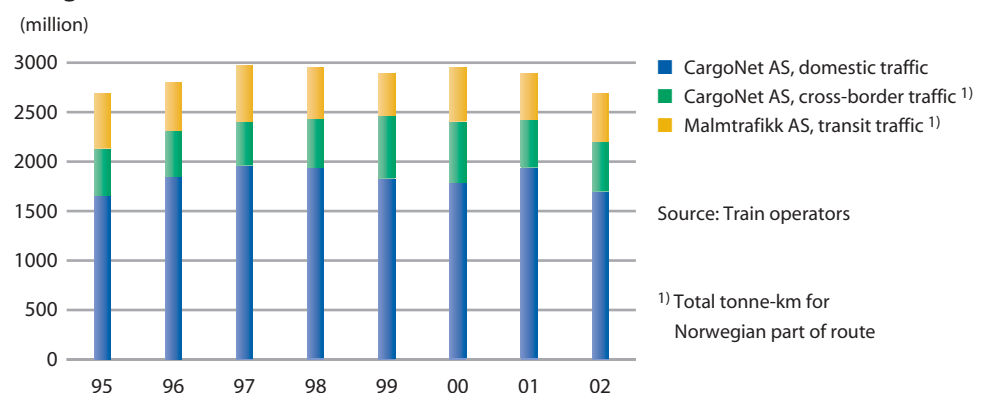
¹⁾ Total passenger-km for Norwegian part of route

Freight traffic, tonnes transported by rail



Source: Train operators

Freight traffic, tonne-kilometres



Source: Train operators

¹⁾ Total tonne-km for Norwegian part of route

Train-kilometres: The total distance in kilometres travelled by all train services put together
Tonne-kilometres: The weight of cargo in tonnes multiplied by the distance travelled in kilometres

Punctuality

The establishment of a dedicated Traffic Management department within Jernbaneverket from 16 June 2002, with overall responsibility for rail traffic management throughout Norway, will enable us to take a more uniform and coordinated approach to punctuality.

The punctuality of train services is indicated as the percentage of trains arriving at their destination on time. For regional, suburban and Airport Express services, a margin of three minutes is allowed; for all other trains, the margin is five minutes.

Punctuality improved in 2002 on long-distance services (all products), Intercity services (particularly on the Vestfold line), Airport Express services and freight services. On local passenger services, however, punctuality was consistently poorer than in 2001, with only Trondheim area services showing any improvement. Oslo suburban services showed the greatest deterioration. The delays were due to an increase in signal failures, temporary speed restrictions and problems with NSB's multiple units.

Faults affecting punctuality

Jernbaneverket keeps a record of infrastructure faults that disrupt train services. On a nationwide basis, the number of train delays directly attributable to infrastructure faults fell by 9% from 2001 to 2002.

Punctuality, % of trains arriving on time

	Long-distance	Regional	Oslo suburban	Airport Express	Time-guaranteed freight
1992	80	75	81		67
1993	79	79	85		60
1994	80	85	84		63
1995	83	84	88		77
1996	80	79	83		71
1997	78	78	75		74
1998	82	82	80		75
1999	84	87	87	97	81
2000	68	81	89	94	74
2001	77	77	85	95	76
2002	79	79	84	96	80

The figures for Oslo suburban services 1992–98 are based on rush-hour measurements. All other figures are based on round-the-clock monitoring.

Temporary speed restrictions (TSRs)

TSRs are imposed for safety reasons owing to the quality of the infrastructure or planned trackworks. Timetables make allowance for planned TSRs, which do not therefore affect the punctuality of train services.

However, delays may ensue from unplanned TSRs imposed in unforeseen circumstances, such as heat-buckling, broken rails or landslides, or as a result of the general condition of the track.

The main causes of late running in 2002 were:

- Adhesion problems due to leaf-fall in the autumn
- A large number of collisions with animals throughout the year
- Bad weather conditions, landslides and danger of landslides
- A snowy, cold spell in eastern Norway in the autumn
- Infrastructure faults
- Extensive trackworks and TSRs
- Faults with NSB's motive power





Environmental protection

Railways and the environment

The transport sector faces a wide variety of environmental challenges, particularly in the areas of biodiversity, cultural heritage, climate change, air pollution and noise. A commitment to rail and other forms of public transport provides users with an alternative that is less environmentally damaging, and hence helps reduce the adverse environmental impact of the transport sector.

Environmental management: principal objective and strategies

Environmental management forms an integral part of Jernbaneverket's management systems. Our principal environmental objective is to reinforce the environmental benefits of rail transport. To this end, Jernbaneverket aims to:

- Develop, document and communicate rail's environmental benefits, to ensure proper use of resources
- Monitor and reduce rail's overall environmental impact
- Set defined, quantifiable environmental standards for our own operations, our suppliers and train operators
- Improve the environment at stations and the lineside

Environmental vision statement for National Transport Plan 2006–15

During 2002, Jernbaneverket was involved in interdepartmental work to prepare a basis for the National Transport Plan 2006–15. As part of this process, an environmental vision statement for the Norwegian transport sector was drafted, with a commentary on its possible operational implications for the various departments and agencies. The draft environmental vision statement is as follows: Transport must not cause serious harm to people or the environment.

Environmentally friendly planning, project management and construction

Jernbaneverket is working on guidelines for an environmentally friendly approach to the detailed planning and project management of infrastructure projects. Activities in 2002 centred on the following projects, which have an environmental monitoring programme for the construction phase: Sandvika–Asker, Fjellhamar station, Sande sections 3 and 4.

Cultural heritage

Jernbaneverket is working with Riksantikvaren (the Directorate for Cultural Heritage) on a national conservation plan for railway-related cultural heritage. The proposals involve the conservation of lines and objects alike. The project commenced during the 1997 Year of Cultural Heritage, and all regions of Jernbaneverket have been involved. Internal peer review of the draft plan was completed in spring 2002, and Jernbaneverket is now working on the final draft. The plan is scheduled to be reviewed by Jernbaneverket's senior management and sent out for external consultation in the second half of 2003. It will then be sent to Riksantikvaren for further evaluation of the lines and objects to be conserved. At the same time as the plan is reviewed by senior management, administrative and financial arrangements for implementing the plan will be put in place.

The visual environment

The process of devising a comprehensive design programme for the visual environment at railway stations began in earnest in autumn 1999. The design standard for stations was refined and finally adopted in December 2002 in the form of a station design manual cover-



ing facilities, physical design, operations and maintenance. The manual differentiates between different categories of station, depending on the types of passenger traffic served.

Waste

A large proportion of the materials removed during upgrading of the rail network are reused elsewhere on the network. Waste metal and wood which cannot be reused are sold for recycling, thereby yielding a source of income. In 2002, 97% of steel waste (rails and masts) and 28% of creosote-impregnated wood (sleepers and masts) was reused or recycled.

Energy consumption

Although efficient use of energy is one of rail's environmental advantages, there is potential for further improvement. One of our goals is to reduce energy consumption. Two of the regions produced energy conservation plans in 2002, and energy efficiency measures costing NOK 21m were implemented across the regions. These measures focused in particular on points heaters. During the year, Jernbaneverket and the train operators embarked on a joint energy-efficiency project concerning traction current.

Biodiversity

The Southern Region is running a project on biodiversity, intended to test alternative methods for controlling lineside vegetation and cut the use of herbicides. The project will run for five years (2001–05).

Soil pollution

Herbicides are used to control lineside vegetation for safety reasons. Owing to new regulations, the substances now used are less effective per application,

necessitating more frequent spraying. Jernbaneverket has begun to examine alternative methods and equipment for dealing with problem vegetation in the track ballast or at the lineside.

Waste ballast

An assessment was carried out in 2002 of the risks associated with reusing or disposing of the waste ballast resulting from ballast cleaning operations. Proposed guidelines on the use of this material have been drawn up and submitted to the Norwegian Pollution Control Authority (SFT) for approval.

Collisions with animals

A total of 1 659 collisions with animals were reported on the Norwegian railways in 2002. This represents a reduction of 5% on the previous year's figure, but the number of animal collisions in both 2001 and 2002 was significantly higher than in earlier years.

Noise, vibrations and structural disturbance

Noise is the main form of environmental pollution suffered by people living and working beside the railway. Noise abatement measures were included as a separate programme when Jernbaneverket formulated its action plan for the years 2002–05. The main objective is compliance with the statutory limits on air pollution and noise. The number of homes with an average noise level in excess of 42 dB(A) was significantly reduced in 2002 compared with the previous year, thanks partly to rail grinding and sound-proofing of homes. Another factor in this reduction was new measurements showing that the number of homes exposed to noise levels exceeding the statutory limits was lower than first thought.

Skills development

Jernbaneverket has set up a number of specialist forums to encourage the exchange of information and improve the expertise of staff in relation to green issues. In addition, all principal departments within Jernbaneverket are running a training programme designed to increase environmental awareness.

Environmental Report for 2002

Details of Jernbaneverket's environmental policies and the status of environmental programmes can be found in the Environmental Report for 2002, available online (in Norwegian) at www.jernbaneverket.no under "Miljørapport 2002."



International activities

In its White Paper on transport policy , the European Union calls for an increase in rail freight. Jernbaneverket recognises the importance of this goal, and is working for greater standardisation and optimisation in how the rail network is used for both passenger and freight traffic.

European cooperation

At the end of January 2002, the European Commission unveiled proposals for a Second Railway Package containing three Directives, one Regulation and one Recommendation for a Decision. Over the months that followed, the members of the European Infrastructure Managers (EIM) worked actively to produce a position paper setting out the organisation's views on the proposals. This was of great help to Jernbaneverket in preparing a more detailed consultation response, which we submitted to the Ministry of Transport and Communications in June. EIM's other activities in 2002 focused mainly on setting up and consolidating the newly formed organisation. Towards the end of the year, EIM launched an initiative to produce a manifesto detailing the organisation's objectives and views regarding developments in the rail sector. This document will be published in 2003.

Experts from Jernbaneverket are heavily involved in various expert and project working groups within the International Union of Railways (UIC) and in the expert working groups drafting Technical Specifications for Interoperability (TSIs) under the auspices of the European Association for Rail Interoperability (AEIF).

Nordic cooperation

The work of the Nordic Infrastructure Managers (NIM) in 2002 centred largely on the extensive project, commenced in autumn 2001, to identify barriers to a free Nordic railfreight market. Jernbaneverket held the presidency of NIM in 2002, so was responsible for the content and progress of the project, which is scheduled for completion in 2003.

White Paper: European Transport Policy for 2010: Time to Decide. Published by the European Commission, Brussels, in 2001.



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