

Evaluation of the Schiphol Policy

Final Report

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Table of contents

	Summary	5
1	Introduction	11
1.1	Reason and objective of the evaluation of the Schiphol Policy	12
1.2	Context and follow-up of the evaluation	12
1.3	The Schiphol Policy	12
1.4	Three components of the evaluation	13
1.4.1	Equal protection	13
1.4.2	Policy effectiveness	14
1.4.3	Proposals to improve the policy	14
1.5	Approach	14
1.5.1	Roles and Responsibilities	14
1.5.2	Involvement of the parties	14
1.6	Advices and related issues on Schiphol	15
1.7	Bookmarker	16
2	Equal protection	17
2.1	Introduction on equivalence	18
2.2	Results of the studies	18
2.2.1	Equal protection (Baarda Motion et al)	18
2.2.2	Additional questions	19
2.3	Opinion of the Environmental Impact Assessment Commission	22
2.4	Opinion of the Aircraft Noise Expert Committee	22
2.5	Findings with regard to equal protection	22
2.5.1	Equivalence test (Baarda Motion et al)	22
2.5.2	Additional questions	22
3	Effectiveness of the Schiphol Policy	23
3.1	Introduction into the effectiveness survey	24
3.2	The effectiveness of the regulations and limits for controlling nuisance and risks	24
3.2.1	Noise	24
3.2.2	Safety	27
3.2.3	Restrictions on the use of space	28
3.2.4	Emissions and air quality	29
3.2.5	Perception of nuisance and risks; local residents and their opinions	30
3.2.6	Regional Consultation Committee Schiphol (CROS)	32
3.2.7	Compliance and enforcement	32
3.3	The effectiveness of the regulations and limits for the development of the main port	33
3.4	Responses by the Council for Housing, Spatial Planning and the Environment and the Council for Transport, Public Works and Water Management	35
3.5	Conclusions about the effectiveness of the Schiphol Policy	36

4	Improvement Proposals for the Schiphol Policy	39
4.1	Introduction on improvement proposals	40
4.2	Proposals for improvement by the parties concerned	40
4.2.1	Approach	40
4.2.2	Results of the study into the effects of improvement proposals made by the parties involved	43
4.3	Proposals from the Aircraft Noise Expert Committee	48
4.4	The follow-up to the proposals for improvement	49
4.4.1	Proposals for improvement from the parties involved	49
4.4.2	Follow-up	50
5	Advices	51
5.1	Introduction on advices	52
5.2	Transport, Public Works and Water Management Inspectorate	52
5.3	Housing, Spatial Planning and Environment Inspectorate	52
5.4	Environmental Impact Assessment Commission	53
5.5	Council for Transport, Public Works and Water Management	54
5.6	Conclusions of the government in respect of the advices	54
6	Related subjects	55
6.1	Introduction	56
6.2	Group risk	56
6.3	Spatial and building restrictions Policy Document	57
6.4	Sound insulation of residences	57
6.5	Regulations for the Schiphol night time regimen	58
6.6	Health	58
6.7	Air quality	58
6.8	MNP facts and figures on Schiphol	59
6.9	Safety Advice Commission Schiphol	60
7	Process Committee for the Evaluation of the Schiphol Policy	61
7.1	Introduction	62
7.2	Advices	62
8	Conclusions	63

Introduction

On 20 February 2003, the Schiphol Act and Airport Decrees came into effect, marking the commissioning of the Schiphol 5-runway system. The essence thereof is that the government, through regulations and limits, sets preconditions to the effects aviation has on its surroundings. The aviation sector has the freedom to develop within those preconditions. With the Schiphol Policy the government serves two public interests:

- the protection of local residents against the negative effects of aviation;
- the economic interest of Schiphol Airport for the Netherlands.

As a follow-up to the 'Baarda Motion et al', it has been agreed that the Schiphol Policy, as recorded in the Schiphol Act and Airport Decrees, must be evaluated within three years of taking effect. In 2004, the evaluation of the Schiphol Policy was started. The contents and procedure of the evaluation are recorded in the 'Plan of Action Evaluation Schiphol Policy'. This plan was discussed in the Lower House in 2004.

This report details the results of the evaluation. In April 2006, the government shall take up its position with regard to the manner in which this evaluation is followed up.

Results of the evaluation

The evaluation is aimed at the Schiphol Act and Airport Decrees. The policies for noise levels, safety risks, air pollution and spatial planning for Schiphol are recorded therein. The evaluation is 3-tiered:

- a policy equivalence test (Baarda Motion et al);
- a policy effectiveness test;
- exploring the possibilities of improving the policy.

The results of the evaluation per section are detailed below.

Equal protection, Baarda Motion et al

The Schiphol Policy must meet a number of requirements, such as offering protection to the surroundings equal to the protection offered by virtue of the environmental standards detailed in the Key Planning Decision (PKB) Schiphol and Surroundings of 1995. During the evaluation it has been examined whether this equivalence condition has been met.

Also, the Upper and Lower Houses have asked additional questions which they want to see answered in the evaluation. These questions concern the development of noise levels, safety risks and air pollution caused by aircraft near Schiphol since 1990.

Equal protection

Based on the results of the equivalence test in accordance with the Baarda Motion et al, the government concludes that the Schiphol Act and the corresponding Airport Decrees meet the equivalence requirements. This applies to both previous years and situations in which maximum environmental effects are assumed.

The Aircraft Noise Expert Committee (CDV) advised on the implementation of the Baarda Motion et al. The Committee is of the opinion that the motion has been correctly and fully implemented and that the equivalence requirements as formulated in the intermediary articles of the Aviation Act have been met.

The Committee's advice on testing with regard to the environmental impact assessment is not yet available at the time of publication of this final report.

Additional questions

An overall reduction in noise pollution and risks for those living near Schiphol can be seen for the period between 1993 and 2005. That does not mean that things have improved for all: in some places, such as below the Polderbaan runway flight paths, pollution has drastically increased. The government at the same time concludes that since 2000, sleep disturbance has shown a slight increase; this following many years during which sleep disturbance levels were falling. Currently sleep disturbance figures are still much lower compared to 1990.

The effectiveness of the Schiphol Policy

The government wanted to test whether the policy pursued for Schiphol is effective: do the regulations and limit values contribute to nuisance control and does aviation have the opportunity to develop within those regulations and limit values?

Results

In 2003, 2004 and 2005, nuisance and risks were controlled by the regulations and limits. None of the regulations or limits restricted the development of the main port. The government therefore concludes that during the past years the objective of the legislation has been achieved: 'stimulating maximum use of the airport with due observance of the limits regarding safety and environmental protection'. In the event of moderate economic growth, the airport is expected to further develop within the regulations and limits until 2012. If the economy recovers and air traffic surpasses growth levels as seen during the period starting in 2000, the development of the main port is expected to be restricted by the limit values for aircraft noise levels as from 2008. As a result, prosperity is set to rise less compared to the situation in which market demand would be fully accommodated, also referred to as a 'loss in prosperity'.

Although the regulations and limits control nuisance and risks, they are not at their lowest possible levels. There is still room for improvement. This also applies to room for growth of the main port. So far, the main port has developed within the regulations and limits. However, if the limit values for aircraft noise levels restrict the growth of the aviation sector, it is important that the restricted room for growth is allocated to those flights which are important to the development of the main port combined with stimulating quieter flights. Therefore, based on the survey into the effectiveness of the Schiphol Policy, the government concludes that the Schiphol Policy offers opportunities to be improved.

Reference points for improvement which the government wants to explore include:

- more efficient use of the possibilities to allow the aviation sector to grow within the set regulations and limit values;
- regulation which is better aligned to the actual development of the aviation market;
- regulation which enables further growth of the main port;
- regulation which is better aligned to the perception of local residents;
- increasing the predictability of nuisance;
- nuisance control in residential areas further away from Schiphol;
- the possibility of regional contribution in the decision-making process on Schiphol issues;
- removing ineffective regulations and limits;
- clarity regarding the future;
- increasing clarity regarding the responsibilities and positioning of Air Traffic Control the Netherlands (LVNL).

Responses by the Council for Housing, Spatial Planning and the Environment and the Council for Transport, Public Works and Water Management

The government has requested two advisory councils, the Council for Housing, Spatial Planning and the Environment and the Council for Transport, Public Works and Water Management, to respond to the survey into the effectiveness of the Schiphol Policy. The Councils have prepared these responses independently from each other. Their replies are aimed particularly at the realisation of the objectives of the policy, controlling nuisance and risks and the development of the main port. The two advisory councils have also made proposals in that respect.

Proposals to improve the Schiphol Policy

To conclude, the government has announced that it wants to explore potential improvements to the policy. Although the current policy was formulated with due care, the government has indicated to be receptive to improvement proposals. Hence until 1 July 2005, everyone had the chance to submit proposals to improve the policy. In Addition, the Aircraft Noise Expert Committee submitted proposals in January 2006 with regard to specific issues surrounding the Schiphol Policy.

Proposals for improvement by the parties concerned

A total of 682 proposals were submitted by 138 petitioners. Both the petitioners and the contents of the proposals show a wide diversity. Proposals were submitted by for instance local residents, municipal administrations, environmental organisations, research agencies and sector parties. Discussions regarding the contents and background of the proposal for improvement were conducted with the petitioners in various manners and at different times.

The proposals for improvement have been examined in respect of their effects on feasibility, nuisance control and the development of the main port. Also, CROS and a panel formed by local residents issued advice on the proposals for improvement.

The effects of the proposals for improvement

The effects of the proposals for improvement on feasibility, living environment, the health of local residents and main port development have been outlined by means of an assessment framework. Factors to assess feasibility include the implementation term, flight safety and legal and financial aspects. Factors such as noise levels, air pollution and external safety are relevant to the living environment, perception and health. In order to determine the effects for main port development, the climate for establishing a business, capacity and network quality have been examined, among other things.

The survey into the feasibility and the effects of the improvement proposals on the living environment and main port development leads to the following picture. It is anticipated that around 15 to 20 per cent of the proposals can be implemented immediately after adoption of the government position. If to this end legislation needs to be amended, an implementation term of several months up to one and a half years needs to be taken into account. In the event of multiple amendments at the same time, more time is needed for the implementation. Another possibility is testing the proposals in practice first prior to permanently amending the legislation. Proposals for communication, compensation for the nuisance and the institutional framework can be implemented at short-term notice. It is anticipated that a similar percentage shall be rejected without further consideration, e.g., as important objections have been raised in the field of implementation, living environment and main port development. Approximately 60 to 70 per cent of the proposals for improvement generate both positive and negative effects, which must be considered very carefully.

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This mostly involves proposals in the field of departing and arriving traffic and the use of runways and flight paths, which involves shifting noise levels from one residential area to another. The fields of establishing common standards and amending the legal framework also require due consideration.

Proposals for improvement by the Aircraft Noise Expert Committee (CDV)

CDV was instructed to submit proposals for a supplementary enforcement system for residential areas located further away from Schiphol and to describe the advantages and disadvantages thereof.

To this end, CDV has made a number of proposals:

- a proposal extending the number of noise points in residential areas further away from Schiphol;
- a proposal with a zone-oriented approach;
- and proposals using noise standards which are better aligned to the perception of local residents compared to the current annual standards for aircraft noise.

However, the additional noise points are at the expense of the room for growth of aviation. Hence CDV advises to upwardly adjust the limit values of the additional noise points.

Furthermore, CDV made proposals for the manner in which noise measurements can be used in the enforcement of noise level criteria and the provision of information. Since enforcement involves strict tests to confirm whether or not a concrete limit value has been observed, it is necessary that the data on the basis of which tests are conducted are undisputed. CDV believes that, unfortunately, enforcement on the basis of noise measurements alone is not possible. However, CDV can see a role for noise measurements in terms of improving current calculations of aircraft noise. CDV also sees possibilities in using noise measurements for the provision of information. CDV advises to examine whether the existing measurement networks offer sufficient coverage and to see whether the data of the different measurement networks can be compared with each other.

The third instruction to the CDV concerned the evaluation of the switch to European noise standards. CDV indicates not to see any reason to re-discuss the previous decision to switch to the new European standards.

Process Committee for the evaluation of the Schiphol Policy

The Process Committee has been formed in order to monitor the independence and objectivity of the evaluation of the Schiphol Policy. The Process Committee issued a number of recommendations. Many of the recommendations have been adopted or drove the government to seriously consider them. Furthermore, the committee functioned well as an independent contact point for various parties with questions or reservations regarding the execution of the evaluation. In conclusion, it is highly likely that the very existence of the committee alone served as a useful purpose in that the parties concerned have been made more aware of the process that was monitored. The committee's final assessment of the evaluation is anticipated to take place at the end of February 2006.

Conclusions regarding the evaluation of the Schiphol Policy

- Based on the results of the equivalence test, the government concludes that the Schiphol Act and the corresponding Airport Decrees meet the equivalence requirements as stipulated in the intermediary articles of the legislation. The intended improvement of the environmental situation has, on the whole, been achieved. That test, therefore, does not give rise to an adjustment of the policy.
- During communications the emphasis has often been on the overall improvement of the environmental situation, whereas little attention has been paid to local deterioration. Relatively little attention has also been paid to the effects further away from the airport, whilst the vast majority of those affected live in that region. The government sees reason to improve these matters.
- The government concludes that during the past years the Schiphol Policy has not affected aviation development. However, within a number of years the effects may be felt, as aviation shall then be restricted in its growth due to the environmental limits set out in the policy. As a result, prosperity is set to rise less (a so called 'loss in prosperity'). The question is whether Schiphol Airport can develop further with the selected instruments in the future.
- Part of the room for growth cannot be exploited by aviation as the market is developing differently than previously anticipated. The developments in aviation are hard to predict.
- The question is whether aviation within the current regulations and limit values can create additional room for growth, for example by pursuing a policy aimed at quieter, safer and cleaner air traffic, quiet flight procedures or less or quieter flights at nights.
- With regard to nuisance: nuisance is reduced as a result of the Schiphol Policy, but not much. Certain sections leave room for improvement, e.g. by creating a better alignment to the perception and change in flight paths and procedures. Here the predictability of air traffic (when, where and why) plays a significant role. Also, some of the rules are not effective.
- Furthermore, the question is whether current regulations and limit values do minimize nuisance where possible. This certainly does not seem the case further away from the airport.
- There are a lot of proposals to improve the positioning of the flight paths and flight procedures. A large part thereof does lead to a reduction in nuisance, however, in many cases also to a shift in nuisance and/or a reduction in air traffic capacity. That means that any changes must be considered carefully and that in certain cases it can be useful to first test the changes prior to permanently amending the regulations. Furthermore, the issue of concentrating or correctly distributing nuisance comes to the fore.
- Clarity and a long-term perspective by the government regarding the future and restrictions on the use of space surrounding the airport is of high importance to local residents, the municipalities and businesses as well as to Schiphol, the airline companies and air traffic control.
- The question is what types of air traffic (freight, leisure etc.) and destinations are of importance to the quality of the main port and whether regional airports can play a bigger role.
- Clarity regarding the roles and responsibilities of those involved is of high importance. These have been recorded in the legislation, however, practice shows that it is not always clear as to who is responsible for what. This is also in line with the issue whether the government has a role in directing further development of aviation, and if so, which one.
- In the region there is a need to exert a greater degree of influence on the distribution of air traffic across the surroundings. Schiphol too indicates that it would like to have more room in order to enter into agreements with the surroundings. However, the surroundings of the airport are partly subjected to a conflict of interest. The municipalities indicate that they want more freedom in spatial planning.



Introduction

This is the final report on the evaluation of the Schiphol Policy.

The evaluation was started in 2004 with a Plan of Action which was discussed in the House.

This final report concludes the evaluation and contains the results and conclusions thereof. This report does not contain a position of the government on the Schiphol Policy. That shall be formulated in April 2006, partly on the basis of this report.

1.1 Reason and objective of the evaluation of the Schiphol Policy

On 20 February 2003, the Schiphol Act and Airport Decrees (the Airport Traffic Decree Schiphol and the Airport Layout Decree Schiphol) came into effect, marking the commissioning of the Schiphol 5-runway system. The essence thereof is that the Government sets preconditions to the effects aviation has on its surroundings. The aviation sector has the freedom to develop within those preconditions.

It has been agreed that the Schiphol Policy, as recorded in the Schiphol Act and the two Airport Decrees, must be evaluated within three years of taking effect. The objective of the evaluation is to assess the current Schiphol Policy:

- do the Airport Decrees offer 'equal' protection to the local residents near Schiphol as intended in the legislation?
- is the chosen Schiphol Policy effective?
- can the policy be improved?

This final report answers the above questions. On the basis of this report a decision can be taken in 2006 in respect of the desire to adjust the policy.

1.2 Context and follow-up of the evaluation

Early 2006, in addition to the evaluation of the Schiphol Policy, two other activities which relate to Schiphol shall be completed, viz., the main port project Schiphol and the elaboration of alternatives for group risk policy. These three activities strongly relate to each other and form the basis on which the government shall determine its position in April 2006. The government position shall include proposals to make changes in the Schiphol Policy in the short and long term. Here it shall be indicated which proposals can be implemented immediately, without amending laws and regulations, and which proposals take up more time as laws and regulations do need to be amended or because the proposals need to be worked out in further detail still.

1.3 The Schiphol Policy

In 1995 it was decided that Schiphol could expand with a new, fifth, runway, called the Polderbaan runway. The Polderbaan decision was recorded in a Key Planning Decision (PKB), the PKB Schiphol and Surroundings. The PKB allowed aviation to expand on the basis of the 5-runway system, as long as the overall result of the environmental effects caused by aviation did not exceed levels of 1990. Compared to 1990, aircraft noise, on balance, was even expected to fall. Growth in aviation and yet a standstill or improvement of the environmental situation was possible, as there were few residential areas in line with the new Polderbaan runway. During the past years, air traffic has also become increasingly quiet. Following the commissioning of the new runway (the Polderbaan) noise levels surrounding the airport cannot fall everywhere. Hence the requirements for a standstill

or improvement applied 'on balance' i.e.: taking into account the whole of the area surrounding the airport. Therefore, aircraft noise has increased in some places, whereas it has fallen in other places.

The PKB Schiphol and Surroundings did not survive long: It appeared that the PKB, even before taking effect for the 5-runway system, could not be used. The system which was opted for could not be enforced, the dividing line between government and the business sector was not clear and the aviation sector proved to be developing much quicker than anticipated. Hence (in 1998) the government decided that this PKB had to be replaced by a new policy for Schiphol. This new policy is to offer protection to the surroundings which equals the protection offered by the environmental standards detailed in the PKB. The new policy has been laid down in the Schiphol Policy and the two Airport Decrees. The Schiphol Act includes criteria in so-called intermediary articles. Formulated therein is what equal protection is understood to be.

The policy of the Schiphol Act and the two Airport Decrees imposes regulations and limits on the effects of air traffic in terms of noise, the external safety risk, the emission of air polluting substances and the use of space in the airport surroundings. These regulations and limits are aimed at reducing nuisance and risks around the airport. That does not mean that there is no noise pollution, emissions and risks. These issues are an inevitable consequence when opting for a large airport. The main port, a flourishing airport with excellent international connections and a positive investment climate, is of great importance to the Dutch economy. The government emphasises the importance of the main port to the national economy in e.g. the Mobility and Spatial Policy Documents as well as in the background document 'Main Port Schiphol, policy information'. The quality of the destination 'network' is vital to that main port: the number of destinations, the frequencies and travel times. This does not solely involve the number of flight movements for instance.

The aviation sector has the freedom to further develop within the imposed environmental and safety limits. Growth within the set limits is possible, provided air traffic becomes quieter, cleaner and safer. Therefore the amount of air traffic has not been subject to requirements, yet the effects thereof on the surroundings have. It is up to Schiphol, air traffic control and the airline companies to make the best possible use of the room within the margins.

The Schiphol Act (Chapter 8 of the Aviation Act))

The Schiphol Act:

- includes two Decrees which define the regulations and limit values for air traffic, the use of space surrounding the airport, and provides a regulatory framework. These are the so-called Airport Decrees;

- formulates the protection of the surroundings which must be offered by the first Airport Decrees and with that the intended equal protection;
- stipulates that all subsequent Decrees must offer equal or better protection compared to previous Decrees; the law does not stipulate how that requirement is given substance. That can be determined once it has been decided to amend the Airport Decrees;
- defines the main port objective and provides the possibility of making the best possible use of the margins within the set environmental safety regulations;
- stipulates mutual duty of due care between the sector parties;
- regulates the responsibilities of air traffic control at the airport;
- stipulates the formation of the Regional Consultation Committee Schiphol (CROS);
- includes a regulations and limit values exemption provision in the event of major maintenance to the airport runway system and unforeseen circumstances;
- includes an exemption provision with regard to restrictions on the use of space due to safety and noise;
- defines the role of the enforcer, the Inspector General of Transport, Public Works and Water Management, and his tasks and powers.

Airport Decrees

The environmental standards and the restrictions on the use of space are laid down in two Airport Decrees in conjunction with the Schiphol Act: the Airport Traffic Decree Schiphol (LVB) and the Airport Layout Decree Schiphol (LIB). The Airport Decrees are 'general administrative measures'.

The LVB focuses on managing the scope and distribution of the effects air traffic has in terms of external safety, noise levels, emissions of air polluting substances and odour.

To this end the following has been done:

- limit values have been imposed on noise levels, external safety risk and the emission of air polluting substances;
- regulations have been set up for the use of the runway system and the air space around Schiphol;
- regulations have been set up to restrict odour emissions.

Protecting the surroundings against the negative effects of aviation can only be achieved in combination with physical planning measures. Hence the LIB imposes restrictions on the use of space in the airport surroundings. The restrictions are required in view of external safety risks and noise levels caused by air traffic. It concerns safety demolition zones, noise demolition zones, restrictions on permitted building heights, areas with private and commercial building restrictions, and avoiding objects which attract birds. The objective of the LIB is to prevent large concentrations of people staying in the vicinity of the airport and/or the installation objects

which are sensitive to noise. The LIB is linked to the LVB, i.e. the areas that impose restrictions on the use of space are based on the use of the airport stipulated by LVB regulations. For example, the LVB defines the area which is subjected to high aircraft noise levels and the LIB stipulates that no new residential houses may be built in that area.

1.4 Three components of the evaluation

1.4.1 Equal protection

The Schiphol Policy stipulates that the policy must offer protection to the surroundings equal to the protection as intended through previous environmental standards for the 5-runway system detailed in the PKB Schiphol and Surroundings of 1995. Hence the Schiphol Act includes criteria in so-called intermediary articles which formulate what equal protection is understood to be. The regulations and limits in the Airport Decrees have been tested against these legislative criteria in advance (ex ante) (see EIA Schiphol 2003), to verify whether the intended protection would be offered by the Airport Decrees.

The results were positive. Yet there remained concerns whether in practice the protection would be sufficient. The Upper House formulated this concern in the 'Baarda Motion et al'. This motion instructs to test, on the basis of experiences in practice, whether the intended protection, as recorded in the Schiphol Act, is indeed offered.

The Baarda Motion et al had to be completed within three years of the Schiphol legislation taking effect, thus prior to 20 February 2006. In accordance with the motion, the test is aimed at the practice as seen in the 2004-2005 period. The motion has been carried out together with this final report.

In addition, the Upper and Lower Houses have asked additional questions which they want to see answered in the evaluation. These questions concern the development of noise levels, safety risks and air pollution caused by aircraft near Schiphol since 1990. That information is included in this report.

A study has been carried out by expert research agencies with regard to the equal protection test and the additional questions by the Upper and Lower Houses. An intermediary report has been drawn up for 2004 and offered to the House and the Environmental Impact Assessment Commission. The EIA Commission issued advice in that respect. That advice has been incorporated in the final report on equivalence. In addition, the Aircraft Noise Expert Committee (CDV) issued advice on the research instruction and the intermediary report for 2004.

An intermediary report has also been drawn up on the 'additional questions' which has been offered to the House. The final report on both the equivalence test and the additional questions has been enclosed with this final report as appendices.

1.4.2 Policy effectiveness

The government has furthermore indicated the wish to test whether the policy pursued for Schiphol is effective: do the regulations and limits contribute to nuisance control and does the main port have the opportunity to develop within those regulations and limits?

The purpose of this part of the evaluation was to verify whether these objectives had been achieved and whether this was a result of the policy pursued. That means that, in addition to checking whether the aviation sector observed the regulations, it has been verified whether the introduction and compliance with those regulations have contributed to nuisance control and the development of the main port. Not only did this include examining the measures and calculated quantities such as decibels, but also examining the manner in which local residents experience the nuisance by means of a perception survey.

A 'Survey Agenda Effectiveness' was prepared to test the efficiency of the policy. The survey agenda was discussed in the Lower House in April 2005. The policy effectiveness study examines the effects of all policy instruments combined, but also of all instruments separately and was carried out by various expert research agencies. Their reports have been included in this final report as appendices.

Concept conclusions regarding the effectiveness of the policy were drawn up on the basis of the study reports. At the end of 2005, the Council for Housing, Spatial Planning and the Environment and the Council for Transport, Public Works and Water Management were asked to comment on these concept conclusions. The Cabinet shall include these responses in its position on the Schiphol Policy. Chapter 5 outlines the responses of the Councils.

1.4.3 Proposals to improve the policy

The third component of the evaluation is to examine whether the policy can be improved. Hence everyone had until 1 July 2005 to submit proposals to improve the policy. A total of 682 proposals were submitted by 138 petitioners. In August 2005, an independent research agency made an initial examination of the improvement proposals. This initial examination was tested with the petitioners in October through individual discussions. The assessment framework was formed in November. The effects of the proposals have been outlined on the basis thereof. This study was published in January 2006 and is enclosed with this report as an appendix.

In addition, the Regional Consultation Committee Schiphol Airport (CROS) and a panel formed by local residents issued advice on the proposals which had been submitted. The advices were included in the actual consideration of the proposals for improvement by the government in April 2006.

1.5 Approach

1.5.1 Roles and Responsibilities

The evaluation has been carried out by the Ministries of Transport, Public Works and Water Management / Housing, Spatial Planning and the Environment on the instruction of the Lower House. The Lower House issued this instruction so that the government can be held to account directly with regard to the execution, planning and quality of the evaluation.

Early 2005, a Process Commission was formed, in order to guarantee the independence and objectivity of all parts of the evaluation process. In the period May - October 2005, the Process Commission Evaluation Schiphol Policy issued seven advices on various parts of the evaluation. The committee's final advice shall be ready at the end of February 2006.

Chapter 7 shall discuss the advices submitted by the Process Commission.

1.5.2 Involvement of the parties

The Upper and Lower Houses

The Upper House is closely involved in the evaluation, as it submitted the so-called Baarda Motion et al. In addition, both the Upper and Lower House have asked additional questions.

During the evaluation the Houses have been informed of the progress by means of progress reports, letters on the state of affairs and discussions of those documents.

Local residents, aviation sector and administrators

Local residents, the aviation sector and administrators have been given the opportunity to submit proposals to improve the policy until 1 July 2005. In addition, various information meetings and theme gatherings have been held for these parties. Also, a panel of residents living near Schiphol issued advice on the proposals for improvement.

Administrators, local residents, Schiphol, KLM and Air Traffic Control the Netherlands have issued advice on the improvement proposals, each independently through CROS, and have been informed on the progress of the evaluation during a number of meetings.

Experts

Various experts have been involved in the evaluation:

Committee of Experts on Aircraft Noise (CDV)

CDV has been requested:

1. To make proposals for an additional enforcement system for residential areas further away from Schiphol. This concerns the development of an 'LVB plus' system. 'Plus' indicates that the ring of enforcement points in the LVB already offers certain protection for residential areas further away from Schiphol.
2. To make proposals for the manner in which noise measurements can be used in the enforcement of

noise level criteria and the provision of information.

3. Within the Schiphol Act it has been opted to transfer from the Dutch aircraft noise measurements to the new European standards L_{den} and L_{night} . The CDV has been instructed to investigate the course of action of that transition in practice. When doing so, the commission shall examine noise levels during the 2000-2005 period.

The CDV completed its tasks early 2006. The proposals on measurements and enforcement in the outer area have been included in the evaluation as improvement proposals.

In addition, the CDV was asked to test whether the Baarda Motion et al had been carried out correctly. The findings of the CDV in this respect shall be discussed in this report.

Safety Advice Commission Schiphol (VACS)

VACS issued advice on the Schiphol Safety Policy. The VACS advice was included in the evaluation of the policy.

Environmental Impact Assessment Commission (EIA Commission)

The EIA Commission issued advice on the Schiphol Policy. The advice included recommendations for the equivalence test, the survey agenda and the proposals for improvement. The commission further advised on grouping the improvement proposals. This advice comes separate from the statutory duty of the EIA Commission when assessing the report on equivalence (Baarda Motion et al) and subsequent EIA procedures regarding the desired policy amendment.

The Transport, Public Works and Water Management / Housing, Spatial Planning and the Environment Inspectorates

The Transport, Public Works and Water Management / Housing, Spatial Planning and the Environment Inspectorates are responsible for the enforcement of the Schiphol Policy. They issued advice regarding their findings on the policy. These findings shall be discussed in this report separately.

Expert agencies

Various expert agencies carried out researches for the evaluation.

Planning offices

The approach of the effectiveness survey has been discussed with the Central Planning Office (CPB) and the Environment and Nature Conservation Planning Office (MNP). The objective of that consultation was:

- to prevent research being initiated which had already been carried out by the planning offices;
- to test whether the survey questions of the Ministries were correct;
- to verify whether the planning offices could contribute

to the effectiveness survey.

The results of the studies carried out by expert research agencies have been discussed with the MNP and CPB as well.

In addition, the CPB has advised the Transport, Public Works and Water Management / Housing, Spatial Planning and the Environment Ministries on the economic study into the effect of the Schiphol Policy on the main port. To this end, the CPB verified the approach of the study. The planning office criticised a number of starting points used in the study. As a result thereof, the research agency adjusted the set-up of the study. During the study, the CPB commented on the interpretation and presentation of the results. The research agency has incorporated these comments in the final report. The MNP has input knowledge into the study on airports abroad which are comparable to Schiphol. In addition, the MNP has verified the results of the study into the effect of the Schiphol Policy on the emission of air polluting substances by air traffic and on air quality. The planning office commented on the calculations and interpretation of the study results. These comments have been included in chapter 3 of this report.

The MNP has studied the facts and figures on the development of aviation and the environment surrounding Schiphol. The findings have been published in the report 'The environment around Schiphol, 1990 - 2010, facts & figures'. Paragraph 6.8 details the main conclusion of the MNP.

1.6 Advices and related issues on Schiphol

In addition to this evaluation of the Schiphol Policy, there are other subjects affecting the policy on Schiphol: the group risk policy, the main port project, the Spatial Policy Document, sound insulation of residences and the regulations for Schiphol during the night. This report shall briefly discuss these subjects and their relation to this evaluation.

In addition, this report pays attention to the report 'The environment around Schiphol, 1990 - 2010, facts & figures' from the Environment and Nature Conservation Planning Office (MNP) and to the advices of the EIA Commission and the Council for Transport, Public Works and Water Management (report 'It's no use hiding..., advice on the future of aviation in the Netherlands').

1.7 Bookmarker

The Final Report Evaluation Schiphol Policy is set up as follows:

- Chapter 2 discusses equal protection;
- Chapter 3 discusses the effectiveness of the Schiphol Policy;
- Chapter 4 discusses the proposals of improvement regarding the Schiphol Policy;
- Chapter 5 provides an overview of the advices that have been issued;
- Chapter 6 details related issues;
- Chapter 7 discusses the Process Commission Evaluation Schiphol Policy;
- Chapter 8 details the conclusions of the evaluation.

2 Equal protection

In 1990, around 90,000 people lived in an area seriously affected by noise pollution caused by air traffic. In 1995, it was decided that Schiphol would be expanded with a new runway. As from the commissioning in 2003, nuisance levels had to be substantially reduced and the safety and air quality situation was not to deteriorate compared to the 1990 levels.

The question whether these objectives have been achieved can be answered with a straightforward 'yes'. For example, it appears that in 2005 'a mere' 20,000 people were subjected to serious noise pollution, substantially less than the figure of 90,000 in 1990. That does not mean that things have improved for all. In some areas flight movements have increased causing nuisance to rise. In addition to the comparisons for noise pollution, this chapter also details those for safety and air pollution, as well as the actual development of the environmental effects between now and then.

2.1 Introduction on equivalence

In terms of protection, the Schiphol Act had to be ‘equal’ to the protection offered by the former Key Planning Decision (PKB) Schiphol and Surroundings. The law univocally defines what the equivalence of the Schiphol Policy is understood to be. Prior to the policy coming into effect, this was tested against the equivalence requirements. As a result of concerns in the Upper House, recorded in the Baarda Motion et al, the policy was further tested against these requirements in practice. This test was aimed at the practice of the 2004-2005 period, as per the request stated in the motion. The 2003 period was not included in this test, as this period was the transitional year from the 4-runway to the 5-runway system. The study had to be completed three years after the Act coming into force, i.e. in February 2006.

There has been a lot of discussion on the execution of the Baarda Motion et al. Hence the government invited the Upper and Lower Houses to express what they, in addition to the execution of the Baarda Motion et al, would like to see examined in the evaluation. The Houses indicated that they wished to have an insight into the development of noise levels, safety risk and air pollution caused by aircraft near Schiphol since 1990. That wish has been fulfilled through the additional study, the results of which are detailed in paragraph 2.2.2.

This chapter details, in that order, the results, the conclusions on the equivalence test (in accordance with the Baarda Motion et al) and the additional questions. Subsequently, the advices issued in this respect by the Environmental Impact Assessment (EIA) Commission and the Aircraft Noise Expert Committee (CDV) shall be discussed.

Since the PKB still used the old noise measurements Ke and LAeq and a listing of residences (number and location) from 1990, the equivalence test also used these noise standards and residence database as per 1990. The intermediary articles in the Schiphol Act also stipulate this: otherwise apples would be compared with oranges. With regard to answering the additional questions (report on the environmental effects from 1990 until today) the new noise standards Lden and Lnight plus the current residence database have been used.

In 2005, the Schiphol Act was amended as requested in the Baarda Motion et al, recording the execution of the equivalence test, carried out in this evaluation, in the Act. The legislative amendment describes the execution requirements for the equivalence test, as well as the role of the EIA Commission in the execution of the motion.

2.2 Results of the studies

2.2.1 Equal protection (Baarda Motion et al)
Noise

According to the criteria of the legislative intermediary articles, noise pollution in 2004 and 2005 must, in

general, be substantially reduced compared to the 1990 levels. According to the legal requirement, no more than 45,000 people may, during day time, be subjected to serious nuisance as a result of (considerable) aircraft noise. According to the legal requirement, no more than 39,000 people may be disturbed in their sleep as a result of (considerable) night time aircraft noise (20 dB(A) LAeq or more).

According to the legal requirement, areas subjected to high levels of noise during a 24-hour period (35 Ke or more) may not exceed 10,000 residences, areas subjected to high levels of night time noise (26 dB(A) LAeq or more) may not exceed 10,100 residences. Starting point for these calculations is the residence database of 1990.

The number of those seriously affected in areas with noise levels of 20 Ke or more (residence database 1990)

Situation 1990	Approx 90,000
Maximum according to Schiphol Act Requirement	45,000
Situation 2004	Approx 19,000
Situation 2005	20,000

The number of residences in areas with noise levels of 35 Ke or more (residence database 1990)

Situation 1990	Approx 15,000
Maximum according to Schiphol Act Requirement	10,000
Situation 2004	Approx 6,000
Situation 2005	6,600

The number of people suffering from sleep disturbance in areas with night time noise levels of 20 dB(A) LAeq or more (residence database 1990)

Situation 1990	Approx 134,000
Maximum according to Schiphol Act Requirement	39,000
Situation 2004	Approx 11,000
Situation 2005	11,000

The number of residences in areas with night time noise levels of 26 dB(A) LAeq or more (residence database 1990)

Situation 1990	Approx 30,000
Maximum according to Schiphol Act Requirement	10,100
Situation 2004	Approx 2,500
Situation 2005	2,900

The chart shows that the equivalence requirements have been met. The fact that the equivalence requirements have been met despite the growth in air traffic has been made possible mainly thanks to the commissioning of the Polderbaan runway and the use of quieter engines in many of the aircraft landing and taking off at Schiphol. As a result of the Polderbaan runway, fewer flight paths cross densely populated areas than before. The positive effect of quieter engines is self-explanatory. In addition

to these two main causes, the following two issues play a role. Air traffic has not yet taken maximum advantage of the room between the environmental margins. The room between the margins can never be taken advantage of in full as aviation must take into account the unpredictability of the weather. Around half the time it is the weather circumstances (particularly the wind) determining which runways at Schiphol can be used. The exact weather circumstances during the course of a year, e.g. the number of days per year during which the wind is easterly, cannot be predicated in advance.

Safety

According to the criteria in the intermediary articles of the Schiphol Act, there may be no more than 774 residences which are subjected to an increased possibility of its residents dying due to a crash. The starting point for this calculation is the residence database of 1990. The table below demonstrates that this requirement has been amply met. In 2004 and 2005, the number of residences subjected to an increased risk fell by nearly 40 per cent, compared to 1990.

The number of residences in areas subjected to an increased risk

Situation 1990	Approx 774
Maximum according to Schiphol Act Requirement	774
Situation 2004	Approx 490
Situation 2005	Approx 476

The relatively low number of residences subjected to an increased risk can be explained according to the same principle as that for noise, on the understanding that here of course it was not the aircraft being quieter, but the aircraft being safer that a played a role.

Air pollution

The criteria in the intermediary articles of the Schiphol Act stipulate that in 2004 and 2005, the combined emissions of five polluting substances by air traffic, road traffic, industry and other sources may not exceed the emission levels of 1990 in an area measuring 20 x 20 kilometres around Schiphol. These criteria have been met for all five substances. In the area under review, air traffic accounts for only a limited proportion of polluting substances in the emissions total; in 2004 it varied from 3 per cent for volatile organic

substances to 27 per cent for sulphur dioxide and in 2005 from 4 per cent for volatile hydrocarbon substances to 24 per cent for nitrogen oxide. During the period under review, aviation accounted for a few per cent of the total air pollution in residential areas surrounding the airport (which, in addition to local emissions, e.g. caused by road traffic, is also determined by the quality of air coming in from elsewhere).

The reduction in the emissions total surrounding Schiphol for volatile organic hydro(carbon) substances (VOS), is mainly thanks to the reduction in emissions by the industry (from 7,045.9 tons in 2004 to 4,211.7 tons in 2005) and in the category 'miscellaneous' (from 1,488.8 to 562.4 tons). VOS emissions caused by air traffic rose slightly in the 2004-2005 period (from 545.4 to 550.4 tons).

2.2.2 Additional questions

One of the reasons for the discussion surrounding the Baarda Motion et al was that, during its execution, outdated noise measurements were used and that the development in housing construction, which took place during the previous years, did not emerge, as only the residence database of 1990 was used in the calculations.. Partly as a result thereof, the Upper and Lower Houses asked additional questions regarding the historical development of the environmental effects surrounding Schiphol as from 1990, on the basis of the current housing situation and noise standards.

This paragraph provides an overview of the results of the study into the additional questions. To this end, a selection has been made of the most relevant charts and illustrations. With regard to the remaining illustrations, reference is made to the report on the additional questions in the appendices.

No relevant data for the periods 1990, 1991 and 1992 were available for illustrating the historical development. Data was available for the period of 1993 onwards. These data have been used as a basis to answer the additional questions.

Noise

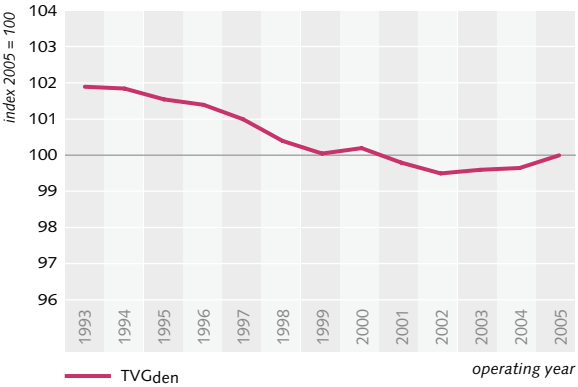
Since 1993, the number of flight movements has increased from 202,000 to 410,000 in 2004. However, that increase did not cause a proportional increase in noise levels.

Emissions of polluting substances Schiphol and surroundings (in tons per year)

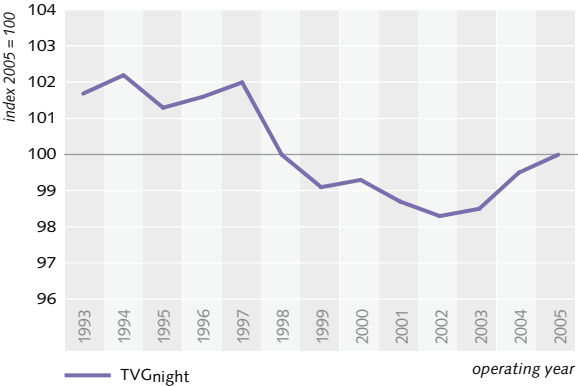
	Situation 1990	Maximum according to Schiphol Act requirement	Situation 2004	Situation 2005
Carbon monoxide	45,701	45,701	19,659	20,496
Nitrogen oxides	19,771	19,771	11,550	11,862
Volatile organic hydro(carbon) substances	21,173	21,173	16,519	12,700
Sulphur dioxide	1,274	1,274	297	373
Air particle	1,208	1,208	909	849

During the 1993-2005 period, the total amount of noise produced during a 24-hour period, expressed in Total Volume Noise (TVG), remained practically equal. The total amount of noise produced during the night demonstrates a similar pattern, yet less constant. However, this does not provide any information regarding the development of the number of those affected, since the TVG does not take into account the location of where aircraft noise is produced. The development in the number of those affected by noise pollution shall be explained later on.

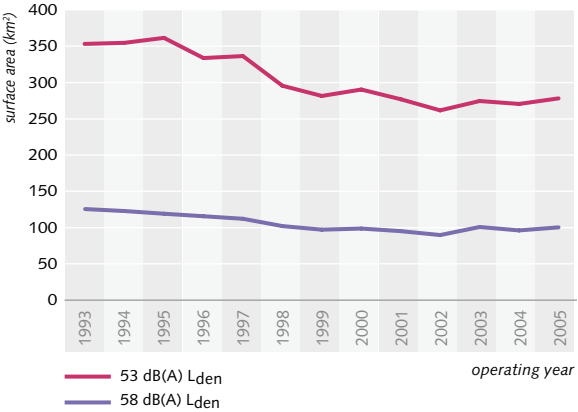
Trend in the Total Volume Noise during a 24-hour period (2005=100)



Trend in the Total Volume Noise during night time (2005=100)

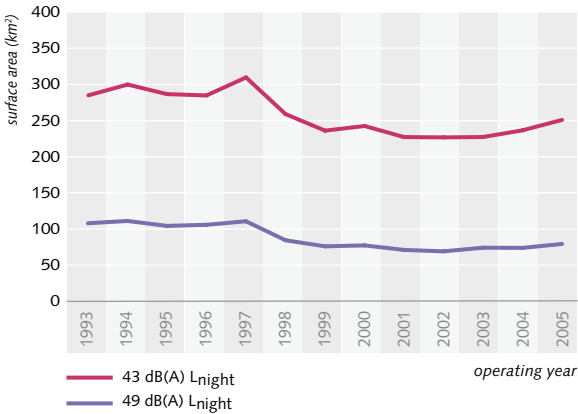


Trend in the surface area surrounding the airport subjected to minimum noise levels of 53 dB(A) L_{den} and 58 dB(A) L_{den} respectively, according to operating year. Noise levels during a 24-hour period.



During the past years, the scope of the areas subjected to noise gradually reduced also. Exception to this trend is a slight increase in 2003, as a result of the commissioning of the Polderbaan runway.

Trend in the surface area surrounding the airport subjected to minimum noise levels of 43 dB(A) L_{den} and 49 dB(A) L_{den} respectively. Noise levels during night time.

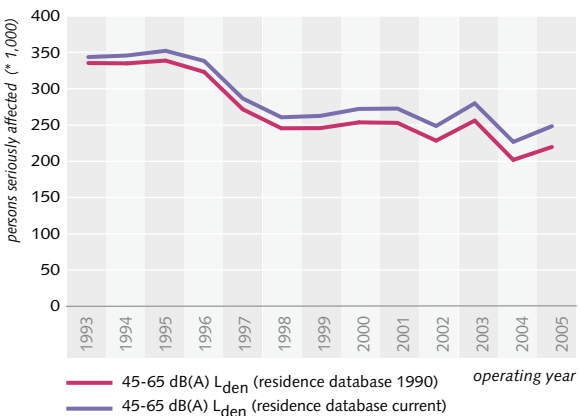


In the area under review, the number of people seriously affected by noise pollution gradually reduced during the 1993-2002 period. The commissioning of the Polderbaan runway caused a significant reduction in the number of people seriously affected. This number has since slightly increased. The development in sleep disturbance demonstrates a similar pattern, yet less constant. Since 2000, a modest increase can be seen here. This is the result of a recent rise in the number of night flights.

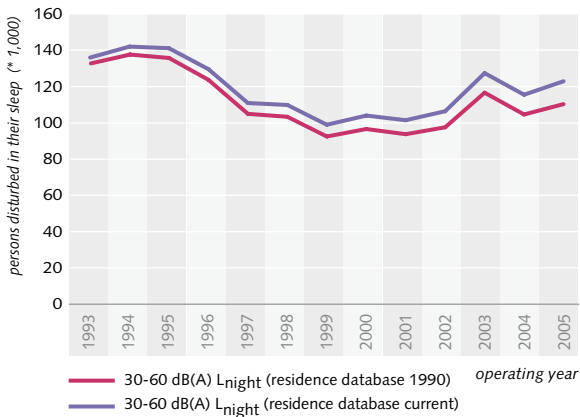
Areas subjected to noise levels of 50 dB(A) L_{den} in 1993, 2002 and 2005.



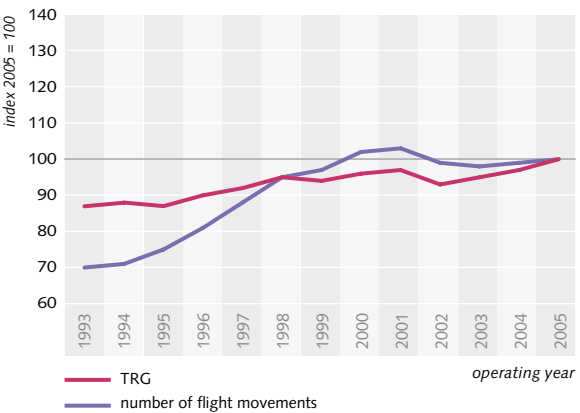
Trend in the number of people seriously affected in the area under review; figures are on the basis of the RIVM (National Institute for Public Health and the Environment) housing situation in 1990 and current situation; noise levels during a full 24-hour period.



Trend in the number of people suffering from sleep disturbance in the area under review; noise levels during night time; figures are on the basis of the housing situation in 1990 (RIVM) and the current housing situation.



Trend in Total Risk Weight (TRW) and the scope of air traffic since 1993 (2005 = 100)



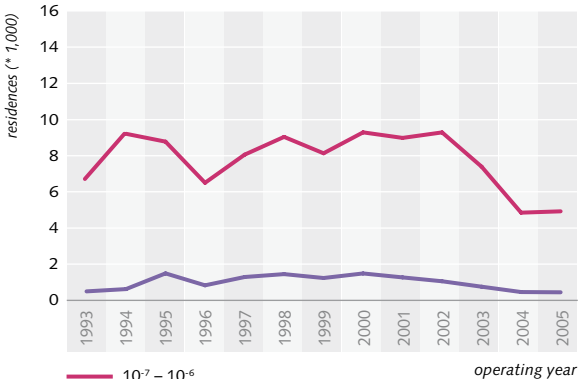
Safety

The Total Risk Weight (TRG), a measure for the chances of a crash near Schiphol, gradually increased during the 1993-2005 period. This is the result of a rise in the number of flight movements. However, that increase

exceeded that of the TRG. This is thanks to the fact that aircraft landing and taking off at Schiphol have become safer.

The distribution of safety risks is illustrated by means of so-called risk sectors. Within such a sector the risk exceeds that sector value of, e.g. 10^{-5} . The risks are determined on the basis of crash data near airports across the world. The value of the risk represents the chances of being involved in a crash when stationary at a certain location for one year. The closer to the airport, the higher the safety risk; this is because crashes mainly occur near airports. During the course of the year, the areas around Schiphol within the risk sectors 10^{-5} (demolition zone), 10^{-6} and 10^{-7} have gradually increased. For example, the area within the 10^{-7} sector increased from more than 40 km² (1993) to 50 km² (2005). The area within the 10^{-6} sector increased from more than 7 km² (1993) to 10 km² (2005). The area within the 10^{-5} sector increased from more than 1.4 km² (1993) to 1.6 km² (2005). However, the number of residences within those sectors fell, particularly following the commissioning of the Polderbaan runway, as there are few residences near that runway.

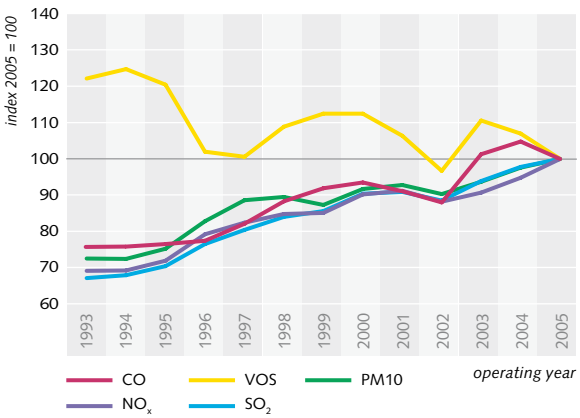
Trend in the number of residences subjected to a medium to high level of risk



Air pollution

Since 1993, the emissions total of CO, NO_x, SO₂ and PM10 (air particles) as a result of air traffic at Schiphol increased, whilst the emissions total of VOS fell. This is the result of four developments. During the period under review, engines have become more economical in fuel consumption, as a result of which emission levels have fallen. On the other hand, the take-off weight has increased. Heavier aircraft consume more fuel per take-off or landing and thus the average emission total per flight movement increases. Furthermore, the number of flight movements has increased, which again increases emissions. And finally, aircraft have to taxi further to and from the Polderbaan runway which also causes an increase in fuel consumption and thus emissions. However, aviation still only accounts for a few per cent of the total air pollution in residential areas around Schiphol.

Trend in the emissions total of CO, NO_x, SO₂, VOS, and PM10 caused by air traffic at Schiphol (2005 =100).



(See notes in Appendix I.32 (Polluting emissions) for an explanation of the values for the 1990 emissions total, presented in figure 5.1)

2.3 Opinion of the Environmental Impact Assessment Commission

On 1 July 2005, the Environmental Impact Assessment (EIA) Commission, in accordance with the Schiphol Act, issued advice on the equivalence test interim report. The commission recommends paying attention to a number of additional issues, such as the development of group risk and the fact that part of the available room within the environmental margins is still not fully taken advantage of by the aviation sector. During the years 2004 and 2005, which the equivalence test is aimed at, the maximum levels in terms of noise, risk and emissions had not yet been reached. The EIA Commission advised to map out the maximum environmental effects within the environmental limits. This has been examined. As part of the study, the maximum environmental effects for noise and safety risks have been mapped out. The study demonstrates that when the maximum environmental limits are taken advantage of, the equivalence requirements continue to be met.

2.4 Opinion of the Aircraft Noise Expert Committee

The Aircraft Noise Expert Committee was asked to test the research instruction for the equivalence test and to issue its opinion on the manner in which the relevant studies had been carried out (amendment to the decision establishing the Aircraft Noise Expert Committee 2003, dated 28 January 2005, published in the Government Gazette of 10 February 2005). The CDV found that the research instruction was properly formulated and that the studies for the interim report for 2004 had been carried out correctly. The committee shall further issue its opinion on the final report on the equivalence test which, in addition to 2005, includes the results for 2004. It is not yet known when the committee shall have completed this task.

2.5 Findings with regard to equal protection

2.5.1 Equivalence test (Baarda Motion et al)

Based on the results of the equivalence test in accordance with the Baarda Motion et al, the government concludes that the Schiphol Act and the corresponding Airport Decrees meet the equivalence requirements. This applies to both previous years and situations in which maximum environmental effects are assumed.

The Aircraft Noise Expert Committee (CDV) advised on the implementation of the Baarda Motion et al. The Committee is of the opinion that the motion had been correctly and fully implemented and that the equivalence requirements as formulated in the intermediary articles of the Aviation Act had been met.

The Committee’s advice on testing the environmental impact assessment was not yet available at the time of publication of this final report.

2.5.2 Additional questions

The period between 1993 and 2003 shows an overall reduction in noise pollution and risks for those living near Schiphol. That does not mean that things have improved for all: in some places, such as below the flight paths for the Polderbaan runway, pollution has drastically increased. The government at the same time concludes that since 2000, sleep disturbance has shown a slight increase following many years during which sleep disturbance levels were falling. However, sleep disturbance figures are still much lower compared to 1990.

Although aviation accounts for only a very limited proportion in air quality, the government does find that during the 1993-2005 period emissions of polluting substances as a result of air traffic at Schiphol have substantially risen. VOS is the only exception in that respect.

Effectiveness of the Schiphol Policy

Is the Schiphol Policy, which was introduced in 2003, effective? In other words: do the limits and regulations help to control nuisance and can the airport develop within these limits? In order to investigate this, decibel levels have been studied as well as the perception among local residents. During the past three years, the policy enabled limited control of the nuisance and risks. The development of the main port was not impeded.

In a number of years, depending on the pace at which aviation develops, noise regulations shall slow down the development of the main port. As a result, fewer aircraft shall be able to land and take off at Schiphol than airline companies and passengers would want to. The Netherlands therefore face a number of options. This chapter details the results of the survey into the effectiveness of the policy.

3.1 Introduction into the effectiveness survey

The Schiphol Act and the Airport Decrees impose regulations and limits with regard to the nuisance and risks of air traffic around Schiphol. The regulations and limits intend to limit the effects aviation has on local residents; they at the same time define the margins within which the main port can develop. The objective of the regulations and limits is: 'stimulating maximum use of the airport with due observance of the limits regarding safety and environmental protection'. As part of the evaluation of the Schiphol Policy, the government investigated whether the regulations and limits contribute to controlling nuisance and safety risks and whether the main port can develop within those regulations and limits. The survey is aimed at the effects of the policy during the past years, from the moment the Act and Decrees came into effect in 2003, to 2005, and at the anticipated future effects of the policy around 2010. The scope of the survey did not expand any further. This was the case in the background document 'Main Port Schiphol, policy information', in which developments in the medium to long terms were studied, and thus also beyond 2010. The sub-surveys into the effectiveness of the policy have been enclosed with this final report as appendices.

This chapter examines the effectiveness of the regulations and limits on controlling nuisance and risks (paragraph 3.2) and the development of the main port (paragraph 3.3). Two government advisory councils, (the Councils for Housing, Spatial Planning and the Environment / Transport, Public Works and Water Management) commented on the effectiveness survey (paragraph 3.4) Based on the survey results and the comments by the councils, the government has drawn a number of conclusions regarding the effectiveness of the policy (paragraph 3.5)

3.2 The effectiveness of the regulations and limits for controlling nuisance and risks

3.2.1 Noise

Aircraft noise from 2003 to date

As from 2003, the Schiphol Act and Airport Decrees, in combination with the Polderbaan runway, ensure that densely populated areas such as Amsterdam and Amstelveen are subjected to lower levels of aircraft noise. Vice versa, sparsely populated areas north and south of the airport are subjected to higher levels than before. This applies to both day and night time.

Core of the regulations and limits is to minimise flights above residential areas. Hence air traffic is, where possible, bundled above rural areas. In other words: redirect a maximum amount of high levels of noise to sparsely populated areas. This is controlled by means of a 'ring of enforcement points' around the airport. Each enforcement point limits the local amount of aircraft noise per year. The ring of enforcement points is to

protect residential areas outside the ring against high levels of aircraft noise. Prior to the policy taking effect, it was examined whether the ring of points offered sufficient protection for areas outside of it. Now this has been tested in practice. The result demonstrates that the intended protection is offered: there are no high noise levels (exceeding 58 dB(A) L_{den}) in residential areas outside the ring of enforcement points.

Enforcement points for noise levels and noise sectors in 2004 (53, and 58 dB(A) L_{den} respectively) in the area under review, surrounding Schiphol.



Since 2003, nuisance caused by aircraft noise in e.g. large parts of Amsterdam and Amstelveen has decreased. However, the number of people affected in rural areas north and south of the airport has increased. Yet the total number of people seriously affected has fallen: from 294,000 in 2003 to 240,000 in 2004 and to 256,000 in 2005. In 2004, approximately 240,000 people lived in areas where levels exceeded 45 d(B)A L_{den} . More than 2 per cent thereof lived in areas with high levels of noise (58 d(B)A L_{den} and higher). Around 10 per cent of those seriously affected lived in areas with medium noise levels (between 53 d(B)A L_{den} and 58 d(B)A L_{den}). The vast majority of those seriously affected, 87 per cent, lived in areas with relatively low noise levels (53 d(B)A L_{den} and less).

Prior to the commissioning of the Polderbaan runway,

the majority of those seriously affected already lived in areas exposed to relatively low noise levels. The number of those seriously affected living in areas with medium to high noise levels prior to the commissioning of the Polderbaan runway was considerably higher.

Aircraft noise during the night

The number of night flights between 2002 and 2005 increased by 18 per cent. Hence during the night aircraft can be heard in a larger area south and southeast of Schiphol. Despite the increase in the number of night flights, the number of people exposed to aircraft noise at night did not increase. Also, flying above residential areas during the night is kept to a minimum and the amount of noise per enforcement point, per year, is limited. In 2004 and 2005, noise levels did not exceed 48 dB(A) L_{night} outside the ring of night time enforcement points.

In 2004, approximately 117,000 and in 2005 approximately 124,000 local residents were seriously disturbed in their sleep due to aircraft noise. This figure represents around 6 per cent of the local residents within the area under review, roughly the rectangle between Leiden, Utrecht, Hoorn and Alkmaar. In 2004, approximately 2,000 thereof and in 2005 approximately 1,300 thereof lived in areas with high levels of noise during the night (more than 48 dB(A) L_{night}). In 2004, 9,000 people lived in areas with medium levels of noise during the night (more than 43 dB(A) L_{night} , but less than 48 dB(A) L_{night}) and in 2005 this figure was approximately 10,000. The vast majority of people who are seriously disturbed in their sleep, 106,000 in 2004 and 111,000 in 2005, live further away from the airport in areas with relatively low levels of noise (less than 43 dB(A) L_{night}).

Complaints on aircraft noise

According to the 2004 complaints analysis (CROS), more than 10,000 local residents submitted one or more complaints on noise pollution. The majority of the local residents complaining on aircraft noise live in areas where noise levels, since the commissioning of the Polderbaan runway, have increased. Furthermore, the number of people submitting complaints since the commissioning of the Polderbaan Runway has fallen by 2000. During this period the number of complaints submitted per person increased.

Nuisance caused by aircraft noise in the future

The development of nuisance depends on the pace at which the aviation sector develops and how soon aircraft can become quieter. Nuisance is not expected to increase during a period of modest economic growth. This is because the limited increase in the amount of aircraft is in that case compensated by the aircraft becoming quieter. In the event of fast economic growth, nuisance, as a result of additional flight movements, is not expected to be compensated by the level in which aircraft become quieter, subsequently causing nuisance to increase.

The limit values in the enforcement points and the TVG, a limit value in terms of the total amount of aircraft noise at Schiphol, shall therefore restrict growth at a certain point in time. Expectations are that as from 2008, fewer aircraft shall be able to land and take off at Schiphol than airline companies would want to. Only if the economic development stagnates, the aviation sector is expected to show a mere moderate development and therefore the imposed limit values shall not restrict growth in air traffic until 2012.

If the limit values with regard to aircraft noise cause a reduction in flight movements, aircraft noise levels shall fall. Calculations show that, in 2008, approximately 295,000 people are seriously affected by aircraft noise. Without a restriction on growth, this figure would be more than 310,000. As a result of the restriction on growth, the total amount of aircraft noise is not expected to rise further. Therefore, expectations are that as from 2008, the number of local residents seriously affected and/or disturbed in their sleep shall stabilise around 300,000 and 150,000 respectively.

Nuisance near airports abroad

In the surroundings of Schiphol, fewer people are exposed to similar levels of aircraft noise compared to other major European airports. Hence fewer people around Schiphol are affected by serious nuisance or sleep disturbance compared to similar airports abroad. That is the result of the relatively strong restriction on housing construction in the vicinity of airports in the Netherlands. In other words: in the Netherlands, few people live in areas which are subjected to high levels of noise. However, people in the Netherlands do complain more about noise. Incidentally, an average aircraft at Schiphol is not quieter or noisier than elsewhere in Europe.

The effectiveness of the regulations and limits for controlling noise pollution

Limit values for noise levels in enforcement points (LVB, art. 4.2.1, 4.2.2)

Enforcement points around the airport limit noise levels in areas surrounding the airport. The number of enforcement points, the position and the permitted noise levels per enforcement point differ during night and daytime.

In 2003, 2004 and 2005, the limit values for the enforcement points were not exceeded; all air traffic has been dealt with within the limits. During the past years, runway operations were changed a number of times to prevent limit values being exceeded. The study shows that, without those changes, the number of people seriously affected and disturbed in their sleep would be higher on the basis of scientific insights. The question is whether this is also the case in the perception of the local residents.

Limit values for Total Volume Noise (LVB, art. 4.2.1, 4.2.2)

The Total Volume Noise is a noise measure based on the number of flight movements, the type of aircraft / engine and the distribution of air traffic across a 24-hour period. Within TVG, night and evening flights carry more weight than flights during the day. The TVG limits the amount of noise all aircraft are permitted to produce, per year.

In 2003, 2004 and 2005, the TVG limit value was met. However, this does not mean that nuisance is controlled. TVG does indeed limit the total amount of noise, but does not affect the distribution of noise across the surroundings. In other words: the TVG does not ensure that noise levels in densely populated areas are low. Hence TVG is not an effective instrument to control nuisance.

Air traffic routes and minimum altitudes (LVB art. 2.1, 3.1.1, 3.1.2 and 3.1.3)

Jet aircraft must use the prescribed air traffic routes and/or flight paths. Ascending traffic, after leaving the air traffic route, and descending traffic, until the final approach, are subject to minimum altitudes. Air traffic control may deviate from these regulations with a view to the safety and smooth handling of air traffic. A maximum allowed percentage in terms of deviations is prescribed according to day and night time, as well as approach and departure.

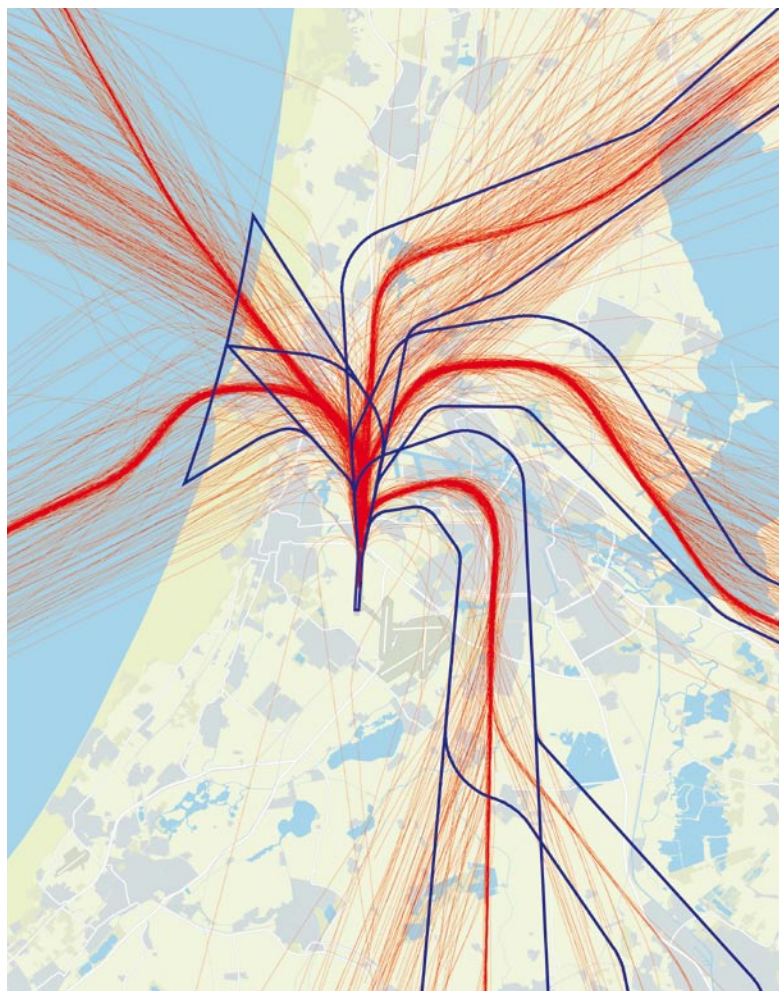
In 2003, 2004 and 2005, regulations and limits for air traffic routes and minimum altitudes have not been properly complied with. The regulations for air traffic routes and minimum altitudes are complex, hard to enforce and difficult to explain to local residents, due to the large number of routes and all permitted exceptions to it. Nuisance levels and safety risks hardly increased as a result of these offences, although the offences did cause some irritation among the local residents. Without regulations and limits for air traffic routes in place, flights above densely populated areas are expected to increase, causing nuisance and risk levels to rise. Without minimum altitudes in place, descending night traffic would fly at lower altitudes. Flying at lower altitudes increases noise pollution, risk levels remain the same.

Availability and use of runway system (LVB, art. 3.1.4 and 3.1.5)

These regulations stipulate the permitted use for each of the runways. The regulations distinguish according to landing and taking off, daytime and night and single or double use of the runway.

The use of the runway system directly affects the distribution of noise and safety risks across the surroundings, as do air traffic routes. In 2004, these regulations were violated eight times during night time landings on the Buitenveldertbaan runway, without stating further reasons. The effects on noise levels and safety risks these offences caused are negligible. However, local residents

Air traffic routes for daytime flights from the Polderbaan runway and the radar tracks of flights on 1-7 October 2005.



do find it annoying when flights take place during times and at places when it is not allowed.

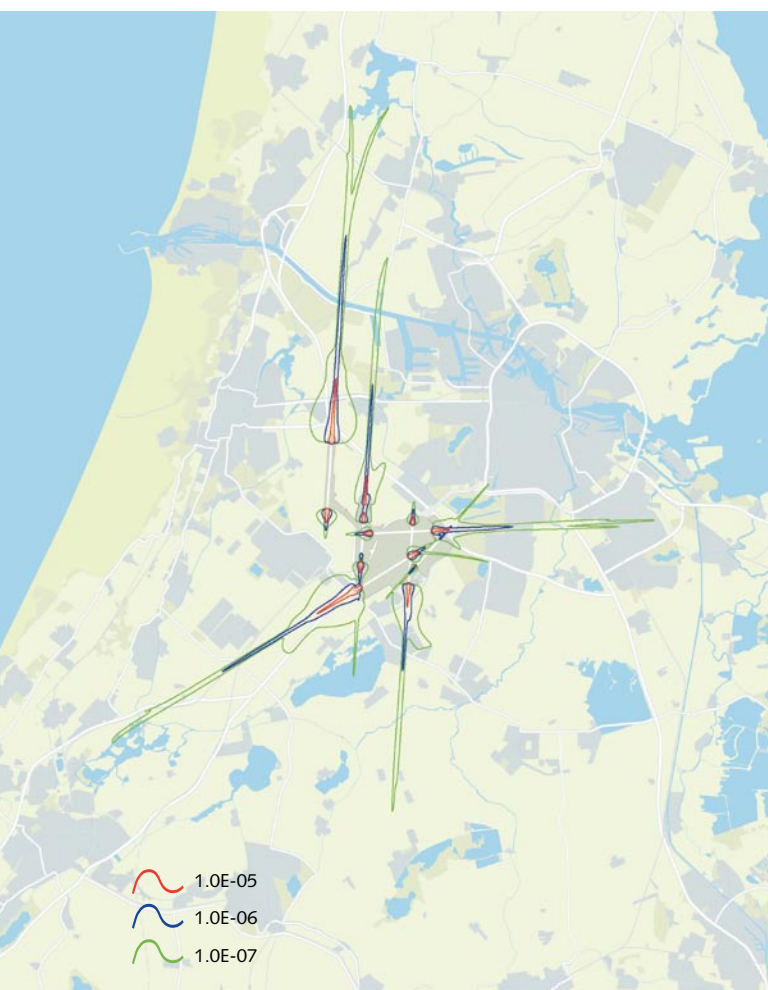
The experience of local residents

The regulations for air traffic routes are not always in line with the expectations and perceptions of the local residents. Flights are directed above populated areas on a frequent basis, whereas local residents expect this to be banned. However, in many cases this is permitted, either because it is inevitable that flight paths cross populated areas, or because traffic can deviate from flight paths when above 900 metres, in accordance with the regulations.

Experiences of the airport, airline companies and air traffic control

Air traffic control, airline companies and Schiphol believe that the combination of the TVG and limit values for enforcement points is unnecessarily complex and not flexible. Practice shows that, as a result, the room within the margins of the limit values is not taken advantage of in full. In addition, airline companies do not consider the regulations and limit values an incentive for purchasing quieter aircraft. An airline company at Schiphol investing in a quiet fleet sooner generates a competitive disadvantage, rather than an advantage.

Local risks (10^{-5} , 10^{-6} and 10^{-7} risk sectors) in the area under review surrounding Schiphol in 2004



Experiences at airports abroad

The majority of the regulations and limit values abroad apply in similar forms in the Netherlands. However, regulations in the Netherlands are more complex than elsewhere. Schiphol is the only airport where the total amount of noise during daytime is limited. On the other hand, both Frankfurt and Heathrow apply strict regulations for night flights. Other than at Schiphol, at some airports abroad the noise produced by aircraft is measured and compared with a limit value. This enables a policy of imposing on-the-spot penalties. Local residents attach a lot of value to such 'noise cameras' as individual aircraft producing too much noise can be penalised. Also, a predetermined operating schedule of the runway has generated positive experiences abroad. This increases the predictability of any nuisance so that local residents are more aware of what they can expect. For example, the British aviation authorities have operated the same alternating runway schedule at Heathrow for years. The local residents are accustomed to this and complain less about aircraft noise.

3.2.2 Safety

Safety risks by air traffic

Since the commissioning of the Polderbaan, part of the approach and departure routes have changed. As a result, safety risks in densely populated areas surrounding the airport have fallen. However, in sparsely populated areas north and south of the airport risk levels have increased. The highest risks can still be seen in areas near the airport which are the continuation of the runways. Currently, as a result of the changed approach and departure routes, fewer people live in areas with increased safety risks than before. In 2004, approximately 1,300 people lived in areas with local risks exceeding 10^{-6} ; 35 people in areas with a risk exceeding 10^{-5} . In 2005, those figures were approximately 1,100 and 33 respectively.

The Schiphol Act and Airport Decrees assume that the combination of Total Risk Weight (TRG) and limit values for noise in the enforcement points and air traffic routes ensure that there are no local risks exceeding 10^{-5} outside the 'safety demolition zones' and no risks exceeding 10^{-6} outside the 'restricted area for new commercial buildings'. In other words: in places with low air traffic volumes in order to control nuisance, the expected safety risk levels are low as well.

In practice, the distribution of safety risks across the surroundings equals that for noise. According to the calculations, local risks exceeding 10^{-5} are not present outside the demolition zones. This shall continue to be the case in the future, if the limit values imposed on aircraft noise continue to be set to a maximum limiting effect. Outside the 'restricted area for new commercial buildings', local risks do exceed 10^{-6} and this is expected to continue to be the case in the future. The difference can be explained in that when restricting the demolition zones the variable use of runways and routes due to weather circumstance was taken into account, whereas this was not done for the restricted areas. Furthermore, the limits for the restricted areas have been formalised. If the limits with regard to the restricted area for new commercial buildings had taken into account weather influences, the assumed context would be effective, now and in the future.

Experiences abroad

Comparison with airports abroad learns that elsewhere air traffic is not subject to specific legal regulations and limits in order to control safety risks in the surroundings. Regulations and guidelines from the international organisation for aviation (ICAO), Joint Aviation Authorities (JAA) and Eurocontrol for the safe design of aircraft and the safe handling of air traffic suffice there. In addition, around some airports the use of space has been subject to restrictions comparable to those in the Airport Layout Decree. Regulations for the use of space do not directly affect air traffic, nor do they affect the development of the main port.

The effectiveness of the regulations and limits for controlling safety risks

Limit values for Total Volume Weight (LVB, art. 4.1.1)

The Total Volume Weight (TRG) is a risk measure based on the chances of a crash, weight of the aircraft and the number of flight movements per year. The TRG limits the chance per year of a crash in the surroundings of Schiphol.

In 2003, 2004 and 2005, the TRG limit value was met. All air traffic was handled within the limit value. This shall continue to be the case in 2008 and 2012, both during slow and fast economic growth. Hence the TRG does not affect the development of the main port, now and in the future. However, this does not mean that safety risks are controlled. TRG does indeed control the chances of a crash, but does not affect the distribution of the risks across the surroundings. In other words: the TRG does not arrange for flights to take place mainly over areas where the risks for local residents are smallest. TRG alone is not an effective instrument to control risks.

3.2.3 Restrictions on the use of space

The objective of the regulations and limits in the Airport Layout Decree (LIB) is to ensure that the number of people living and working in areas exposed to high levels of noise and safety risks is limited. To this end, the use of space, among other things, is restricted. With a view to flight safety, the LIB sets requirements to construction heights and objects which attract birds.

Airport Layout Decree and zoning plans (Aviation Act, art. 8.8 - 8.11)

Zoning plans by municipalities in the restricted areas surrounding Schiphol must be adjusted in accordance with the instructions regarding the use of land and objects within one year of the adoption of the Airport Layout Decree (LIB).

This rule is not properly complied with. The municipality of Haarlemmermeer is the only one to have adjusted the zoning plan. Two other municipalities are still in the process of doing so. Other municipalities have not or not sufficiently reviewed their zoning plans. The effect of this rule on controlling nuisance and risks is small. The LIB serves as a preliminary planning decision for a zoning plan, so that without an exemption no planning permission may be granted which is contrary to the LIB provisions.

Safety and noise demolition zones (LIB, art. 1.2.1 and 2.2.1)

Buildings in areas exposed to noise levels exceeding 71 d(B)A L_{den} and in areas with local risks exceeding 10^{-5} are not permitted. Existing buildings are purchased and demolished on a voluntary basis.

As from 2003, the regulations for demolition zones have been complied with. No new buildings were built; 59 premises out of a total of 86 in the demolition zones have been purchased, of which 19 have meanwhile been

demolished. During the next three years, the remaining premises that have been purchased (40) shall be demolished. The motion Hofstra et al prevents residents from being forced to sell their residences. As a result, the time schedule within which all premises shall be demolished is uncertain. In a number of cases, sound insulation proved so expensive that some residences which did not qualify to be demolished, but which did for insulation, were nevertheless demolished.

Financial support to municipalities (Aviation Act, art. 8.33)

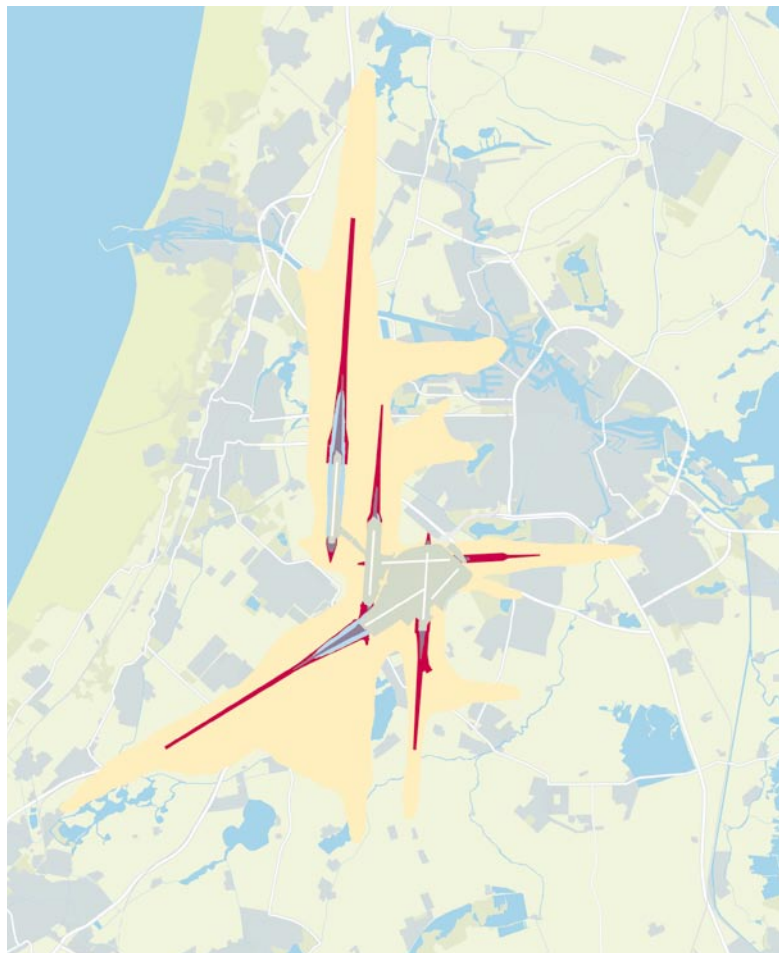
This regulation mainly regulates the financial support when purchasing residences in the demolition zones.

In terms of implementation - but also in terms of the effect on controlling nuisance and risks - this regulation cannot be separated from the abovementioned demolition zones themselves.

Restricted area for new commercial buildings (LIB, art. 1.2.2 and 2.2.1)

The construction of new buildings in areas exposed to local risks exceeding 10^{-6} is not permitted. This includes commercial buildings, with the exception of small-scale or extensive business.

Noise and safety demolition zones plus restriction areas for the construction of new residential and commercial buildings surrounding Schiphol detailed in the Airport Layout Decree.



During the past years, the regulations for 'restricted areas for new commercial buildings' have been complied with. Seven certificates of no objection were applied for, of which five were granted, one was rejected and one is still being processed. Expansion has taken place solely in terms of small-scale, extensive businesses. No residential houses have been built. As a result, the regulation contributes to controlling safety risks.

Restricted area for objects sensitive to noise

(LIB, art. 1.2.2 and 2.2.1)

The construction of noise-sensitive objects, such as residential housing, schools or hospitals, is not permitted within the restricted areas. Newly-built commercial buildings are permitted. This regulation can only be deviated from by exception and supported by reasons.

From February 2003 until the autumn of 2005, 290 exemptions from the ban on new buildings were applied for; 253 certificates of no objection were issued, 27 applications are still being processed, 4 were rejected and 6 have been withdrawn. In over two hundred cases it concerned home extensions or improvements; in approximately sixty cases it concerned the construction of new buildings. Furthermore, municipalities anticipate the regulations by preparing areas previously intended for housing construction as commercial grounds.

The regulation has a substantial preventative effect. Between 2003 and 2005, commercial and residential buildings have been built in the restricted areas at only a very limited scale. The number of residences and businesses outside the restricted areas grew quicker. Although the Airport Layout Decree sets strict conditions on granting exemptions from the ban on new buildings, the question remains whether construction figures do not secretly exceed the number of newly-built premises as planned by the regulations.

Maximum permitted height of objects (LIB, art. 2.2.2)

Depending on the distance to the airport, buildings and objects are subject to maximum heights.

Regulations for objects for which no planning permission is required (Aviation Act, art. 8.12)

Objects which do not require planning permission are subject to regulations of maximum heights.

Restrictions on activities which attract birds (LIB, art. 2.2.3)

Within a radius of six kilometres from the runways, no new objects are permitted which attract birds.

From 2003 to date, regulations for maximum height of objects, for objects which do not require planning permission and for restrictions on activities which attract birds, were complied with. In the event that the regulations had not been complied with, the use of certain runways and approach and departure routes would have

been restricted. This would have reduced the capacity of the airport. Compliance does not directly affect the control of nuisance and safety risks.

Experiences of local residents and regional administrators

Practice shows that there is an increased need for customisation. Local residents and regional administrators plead for a more relaxed application of the limits for demolition zones and the area where residences are isolated or where compensations are paid.

Many local residents and regional administrators experience the Airport Layout Decree as (too) restrictive and unjust. According to their perceptions the development of the municipality is in a deadlock as a result of the tight restrictions. In addition, LIB fully allocates the already scarce space in the surroundings of this part of the Randstad Urbanisation to the aviation sector. That reduces the vitality of the smallest residential cores surrounding Schiphol. That is why it was decided (July 2005) to award a higher priority to the vitality of smaller residential cores than controlling nuisance, by not taking the extent of the noise levels into consideration as a determining factor in the assessment of an exemption request. In the years to come, approximately one hundred residential houses are built within the 'restricted area for objects sensitive to noise'.

3.2.4 Emissions and air quality

Emissions of air polluting substances

Aircraft are becoming cleaner. Between 2003 and 2005, average nitrogen oxide emissions per aircraft fell by 4 per cent and those of air particles by 8 per cent. However, total emissions by air traffic increased, as during that same period air traffic grew faster than the fleet of low-emission aircraft. Total emissions of air particles rose by 3 per cent, those of nitrogen oxide by 7 per cent. Air traffic emissions of the substances under examination accounted for 4 to 27 per cent of the total of all sources in the area under review.

Air quality

Despite the sometimes substantial emissions of air polluting substances, aviation hardly is a contributory factor in terms of air pollution problems in the surroundings of Schiphol. The quality requirements detailed in the air quality Decree are exceeded at a local level in Badhoevedorp, Zwanenburg or Boesingheliede. At those locations, air traffic accounts for approximately two per cent of nitrogen oxides concentrations and less than one per cent for that of air particles. As a result of atmospheric processes, air polluting substances emitted at altitudes exceeding 300 metres do not affect air quality in the surroundings of Schiphol. Within the region, it is mainly road traffic which is responsible for exceeding the limit values detailed in the air quality Decree. The final destination of nearly twenty per cent of traffic on the A4 motorway is Schiphol; each day, approximately 40,000

vehicles arrive at Schiphol. Consequently, Schiphol is an indirect contributory factor to exceeding the limit values detailed in the air quality Decree.

The effectiveness of the regulations and limits for controlling emissions

Standards for average emission levels per aircraft (LVB, art. 4.3.1)

Average emission levels per aircraft have been subject to limits for air polluting substances (carbon monoxide, air particles, nitrogen and sulphur oxides and VOS). Because the number of aircraft does not play a role, the total emissions are not limited. If the limit for average emission levels is exceeded total emissions are limited, albeit it temporarily.

In 2003, 2004 and 2005, the limit values for the emission of polluting substances were met. According to calculations, the limit values shall continue to be met in 2008 and 2012. Cleaner aircraft are mainly the result of external factors such as international regulation, fleet renewal and savings in fuel cost and not as result of Dutch policy to reduce emissions. In brief: between 2003 and 2005, and beyond as anticipated, the limits for emissions do not affect nuisance control, nor do they affect the development of the main port.

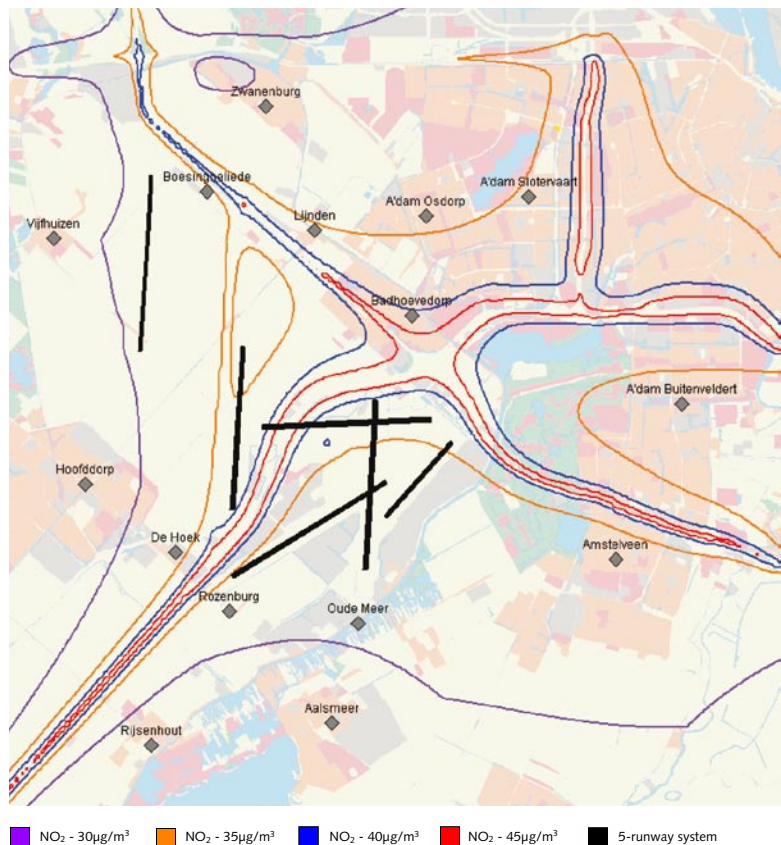
Regulations and limits to control emissions and odour nuisance do not appear to be effective to improve air quality, as they do not affect emissions of air polluting substances by the aviation sector and as such do not at all affect air quality. Expectations are that this is not going to change. As previously stated, aircraft do become cleaner, yet total emissions rise due to the growth in aviation. Since other sources do become cleaner comparatively quicker, aviation accounts for a growing proportion in air pollution.

When verifying the survey results, the Environment and Nature Conservation Planning Office (MNP) draws a less favourable picture for the development of air quality surrounding Schiphol and levels accounted for by air traffic. Research by the MNP confirms that at locations near the airport, the standards detailed in the air quality Decree for nitrogen dioxide (NO₂) and air particles are exceeded. However, air traffic is only a minor contributory factor to air particles (PM10). Due to the rise in emissions by aircraft, NO₂ concentrations around the airport fall less rapidly than generally is the case in the Netherlands. Along motorways near (yet outside) the Schiphol grounds, these offences are anticipated to continue until after 2020. Here levels accounted for by air traffic are expected to increase to a maximum of 15-20 per cent. In 2020, in unfavourably located residential areas, levels accounted for by air traffic can rise to a maximum of 10 per cent.

MNP at the same time concludes on the basis of new information that, as from 2010, the regulations and limits for the emissions detailed in the Airport Traffic Decree

(LVB) can affect emissions by air traffic. In the event of modest economic growth, the limit for the VOS emissions total - and to a lesser extent that of carbon monoxide - is likely to be reached. Without additional measures, this can increasingly limit the extent of air traffic. The regulations and limits detailed in the LVB do not affect NO₂ and air particles emissions, whereas the limit values for NO₂ and air particles detailed in the air quality Decree are exceeded and those for VOS and carbon monoxide are not.

Air quality around Schiphol in 2004 (iso concentration lines of average annual concentrations nitrogen dioxide, NO₂)



Reducing odour nuisance (LVB, art. 3.2.1 and 3.2.2)

In order to control odour nuisance, aircraft with three or more engines must taxi with at least one engine switched off. Where possible, the on-board aggregate is not used whilst at the gate; the fixed power supply on the platform is used instead.

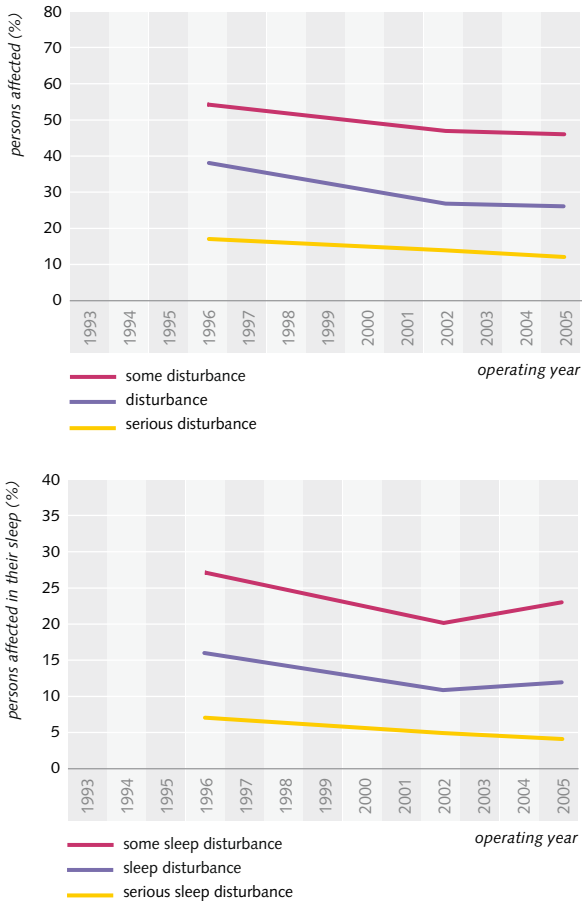
Regulations to control odour nuisance are difficult to enforce in practice. Hence no regulations are enforced. However, many pilots do switch off engines with a view to the economic advantages, such as a savings in fuel consumption and less wear of engines and brakes. This causes a reduction in emissions of both odour and polluting substances.

3.2.5 Perception of nuisance and risks; local residents and their opinions

In 2005, a large number of local residents within a radius of 25 kilometres of Schiphol participated in a

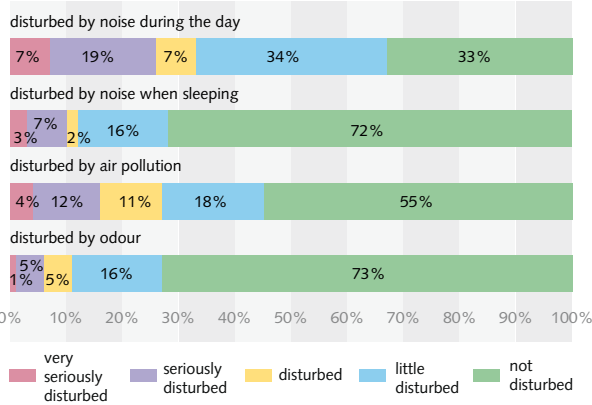
survey. Eleven per cent of the participants expressed to experience serious nuisance due to aircraft noise. Compared to previous questionnaires, the 'self-reported serious nuisance' and the 'self-reported serious sleep disturbance' showed a reduction in the entire area under review compared to 1996, although figures remained the same compared to 2002. In the areas northwest of Schiphol, nuisance caused by aircraft noise did increase. Following the commissioning of the Polderbaan runway, local residents experience more nuisance than expected on the basis of the level of exposure alone.

Nuisance and sleep disturbance due to aircraft noise among the population aged 18 and older in terms of perception in the area under review (95% reliability interval)



More than 4% of local residents experience serious nuisance due to vibrations (ground noise) and approximately 3% experiences serious odour nuisance due to aircraft. Approximately 6 per cent of the local residents are concerned about safety in view of the fact that they live under approach routes. More than 40 per cent is concerned about health in relation to air quality. Odour nuisance caused by air traffic and the number of people who feel unsafe due to living in the vicinity of Schiphol have remained the same. Concern about health in relation to air quality has increased, as have the number of complaints on air traffic at Schiphol.

Level of nuisance among local residents due to air traffic around Schiphol



The amount of noise local residents are exposed to remains the decisive factor in terms of how nuisance is perceived. Calculations of the amount of noise are a poor reflection of the perception of local residents. The calculated noise measures are abstract and assume annual averages, whereas the nuisance in the perception of local residents is determined by events: the noise level of aircraft, the time of passing, the predictability of flight movements and the number of aircraft that pass. By using such annual averages for noise measures, enforcement only takes place in retrospect. The regulations of the Schiphol Policy make immediate and on-the-spot action hardly possible to carry out in practice. Many local residents regard the lack of such tit-for-tat enforcement as a loss. It is one of the reasons why trust in the government and the Schiphol Policy is low.

A change in exposure to noise plays an important role in perception. Changes in the runway operating schedule cause an 'overreaction' to aircraft noise. Due to the change more people experience serious nuisance, even when that change is relatively limited. This possibly explains why the proportion of people seriously affected around Schiphol was higher than anticipated on the basis of the exposure-response relation detailed in the EU Directive Ambient Noise.

Apart from noise, non-acoustic factors also play a role. In addition to personal aspects, such as sensitivity to noise and anxiety, matters such as attitude towards Schiphol, the government and the anticipated development of the airport are important. Particularly when people expect the future (noise) situation to deteriorate, higher levels of nuisance are generated than can be expected on the basis of noise levels alone. Also, a negative attitude towards Schiphol and the government, separately from the actual noise levels, causes an increase in nuisance. As local residents are exposed to less noise, non-acoustic factors play a more important role in the perception.

Opinion polls demonstrate that more than three-quarters of the local residents are positive about Schiphol. The majority is convinced of the importance of the airport

and believes Schiphol is a business the Netherlands can be proud of. Approximately half is also positive about further growth and expansion of the airport. At the same time, local residents predominantly doubt the guarantees offered by the Schiphol Act and the Airport Decrees. That suspicion is also reflected by the fact that more people believe that, in terms of aircraft noise, their situation has deteriorated. However, the actual development in noise levels indicates that the situation for the majority of people has improved. Trust in the responsible authorities is limited, particularly where it involves the Ministry of Transport, Public Works and Water Management. The Transport, Public Works and Water Management Inspectorate, however, clearly enjoy higher levels of trust. Many local residents believe that at the decisive moments, the government emphasises the policy aimed at stimulating Schiphol, whereas controlling nuisance comes second.

3.2.6 Regional Consultation Committee Schiphol (CROS)

Formation of the Regional Consultation Committee Schiphol (Aviation Act, art. 8.34 to 8.40)

The articles regulate the formation of CROS. The committee consists of the representatives of regional authorities, local residents and sector parties. The task of the CROS is to stimulate an airport operation which does justice to the interests of all parties involved.

A review by the CROS

At the end of 2004, at the request of the Ministry of Transport, Public Works and Water Management, CROS evaluated its own performance. That evaluation demonstrated that all members justify the existence of the CROS, but that its credibility and level of support must be improved. Where possible, the CROS pursues consensus, but that must not be at the expense of making choices or the clarity of the position of participating parties. According to the members, the position and organisation of the Information and Complaints Office (IKB) must be reviewed. On the basis of an up-to-date complaints registration system and a thorough analysis of the complaints, the CROS shall be in a better position to draw conclusions for policy and management.

Experiences of local residents, administrators and the aviation sector

Parties who are involved in the implementation of the Schiphol Policy have explicit opinions on the CROS. The objective of CROS is to examine what measures can be taken to reduce nuisance and risks. However, the CROS does not dispose of means to independently amend regulations and limits. Furthermore, CROS lacks decisiveness as its powers and status are not clearly defined. Hence many parties involved deem CROS as too informal. In addition, the legitimacy of the residents' representatives is unclear. Formally they do represent the local residents, but not factually. They lack true supporters. Hence the residents' representatives cannot negotiate with the sector on behalf of the local residents.

3.2.7 Compliance and enforcement

Cooperation between sector parties (Aviation Act, art. 8.18)

In a joint effort, air traffic control, the airport and the airline companies make provisions which are required to prevent regulations and limits being violated.

Operation of the airport according to the LVB (Aviation Act, art. 8.19)

The airport administrator, air traffic control and the captains operate according to the regulations and respect the limits detailed in the LVB. Deviating from these is allowed only for safety reasons.

Air traffic access to the airport (Aviation Act, art. 8.25)

The airport operator is obliged to grant access to all aircraft, provided they comply with the regulations.

The legislative articles stipulate that the sector parties must each comply with the regulations. At the same time sector parties depend on each other in order to prevent violating the regulations and exceeding the limits. These regulations do not directly affect the control of nuisance and risks, but without these regulations compliance with the regulations and limits in the Airport Decrees would not be a matter-of-course.

Additional measures by the Inspector General (Aviation Act, art. 8.22)

In the event that limit values are exceeded, the Inspectorate shall impose additional measures to nevertheless control the nuisance and risks.

During the past years, no limit values were exceeded. Hence the Inspector General did not impose additional measures. Therefore, it cannot be concluded whether additional measures would be effective. However, it does offer the Inspector General the opportunity to take action in the event that limits are exceeded.

Enforceability

The enforceability of the current system is better than the previous one. The limit values in the Airport Traffic Decree have been declared generally binding. In the event of limits being exceeded, measures can be imposed on the relevant party. That means that the airport operator, the airline companies and air traffic control can all be held to account. In the past (PKB), the limits for noise and risk were aimed at the airport alone, while the amount of noise and the scope of the risks are the result of the actions of the entire aviation sector. Furthermore, these days the party which can provide a solution is addressed. In addition, the available instruments of the enforcer have been expanded, e.g. with provisions on administrative fines.

Unbundling of policy, implementation and enforcement

The desired unbundling of policy, implementation and

enforcement has for an important part been realised in the current system. The separate roles have been made explicit: the government prepares the policy, air traffic control has been transferred to an independent administrative body, the inspectorate monitors, the airline companies provide transport and Schiphol Airport NV operates the airport. The government defines the preconditions for the airport operation; implementation of the airport operation is up to the sector parties and the local residents. Hence the government has withdrawn from the consultation with the parties involved in the CROS.

The examining party concludes that the unbundling of the tasks within the government has for an important part been realised. With the exception of the double position of Air Traffic Control the Netherlands (LVNL), which is both sector party and Independent Administrative Body (ZBO).

Ministerial Order Information Provision (Aviation Act, art. 8.26-30)

This regulation forces the sector parties to register discrepancies with regard to the regulations for the use of air space, noise levels, emissions and safety and report these to the Inspectorate. The Inspectorate in its turn reports to the House and the ministries.

This instrument does not directly affect the control of nuisance, risks and the development of the main port. However, without this regulation the authorities involved would not dispose of the necessary information required for enforcement. In other words: this instrument only has indirect effect, now and in the future.

Measurability

Introduction of the Schiphol Act and Airport Decrees have not removed the objections regarding the poor measurability of the old system. The current limits and also the enforcement thereof are still based on calculated annual averages for nuisance measurements. The majority of the issues which the policy subjects to limits, such as safety risks, the emissions of polluting substances or the Total Volume Noise cannot be measured.

The only thing that really can be measured is noise. The transfer from the previous (PKB) noise zone with more than 200 'zone points' to a ring of 35 enforcement points (LVB) had to simplify the transition from calculating to measuring. However, in practice, measuring noise appears to be rather complicated. The Aircraft Noise Export Committee (CDV) advised not to use noise measurements for the enforcement. The committee does recognise possibilities for measuring for the provision of information and using measurements to validate the calculation model. The CDV report has been included in this final report as an appendix. The government shall make a decision on the measuring of noise in the government position.

Exceptional circumstance (Aviation Act, art. 8.23)

Exceptional situations, such as runway maintenance or calamities, can possibly lead to regulations and limits being violated and/or exceeded. In those instances, current regulations and limits are temporarily lifted and/or adjusted.

During the 2003 operating year, work was carried out on the Aalsmeerbaan and Zwanenburgbaan, as a result of which the Polderbaan runway could not operate in full. Hence until 1 November 2003, the State Secretary granted exemption from a number of regulations detailed in the Airport Traffic Decree, while the limit values for noise levels at certain enforcement points were temporarily adjusted so that all traffic could be dealt with. In 2005, exemption was granted for the use of the Zwanenburgbaan as take-off runway for a period of two nights as the Polderbaan was out of service due to snow and black ice.

Without this rule, air traffic would have had to be dealt with within the current LVB regulations and limits. Since the preferred runways were not available, it would have certainly led to a reduction in the capacity of the airport as a result of which fewer flights would have been handled. By means of a temporary adjustment of the regulations and limits, noise was temporarily differently distributed across the area; an increase in the amount of noise is not permitted. That means that locally - and temporarily - nuisance levels at some places had increased, whereas in other places it had fallen.

3.3 The effectiveness of the regulations and limits for the development of the main port

The introduction of the Schiphol Act and the Airport Decrees in 2003 coincided with an exceptional market development. As from 2001, terror attacks, the war in Iraq, SARS and the economic recession caused a reduction in the number of flight movements. A recovery can be seen as from 2003, although the 2001 record year was again not matched in 2005. The number of passengers in 2005 was a record: more than 41 million.

Effects of regulations and limits on the capacity of the airport from 2003 to date

Between 2003 and 2005, the regulations and limits to control nuisance and risks hardly had a negative effect on the number of flight movements, the number of transfer passengers and the network and the frequency of the connections from Schiphol. Hence during the past period the Schiphol Policy did not impede main port development.

Some rules had a positive effect. The regulations for the maximum height of objects (LIB, art. 2.2.2), for objects which do not require planning permission (Aviation Act, art. 8.12), for restrictions on activities which attract birds (LIB, art. 2.2.3) and exceptional circumstances (Aviation Act art. 8.23) were complied with. Failure to comply

would have resulted in a restriction of the use of certain runways and approach and departure routes. This would have reduced the capacity of the airport.

Effects of regulations and limits on the capacity of the airport in the future

The future effects of the Schiphol Policy on both the main port and the Dutch economy have been explored on the basis of two scenarios: one which represents strong economic growth and one modest growth. The chosen scenarios reflect the long-term future explorations of the planning offices. In the event of strong economic growth, growth in aviation shall be considerable. Vice versa, in the event of modest economic growth, growth in aviation shall be limited. The known environmental effects which correspond to these scenarios have been tested against the limits detailed in the Schiphol Act and the Airport Decrees, viz.: the Total Volume Noise (TVG), the Total Risk Weight (TRG) and limit values for emissions of air polluting substances. The remaining regulations and limits - such as demolition zones, air traffic routes - do affect nuisance and risks in the future, but are not expected to affect the capacity of the airport during the selected years of 2008 and 2012, regardless of economic growth.

Calculations show that until 2012, in the event of modest economic growth, the regulations and limits shall hardly impose any restrictions on the scope of air traffic. In that case, the policy does not negatively affect prosperity, the development of the main port and employment. In the event that the economy shows strong growth, and therefore the same can be seen in the aviation sector, the limit values with regard to the amount of noise are expected to limit growth in air traffic as from 2008. In that case market demand cannot be met within the imposed limit values. Furthermore, those same calculations demonstrate that the limit values for the emission of air polluting substances and safety risks (TRG) on the basis of the scope of air traffic in 2008 and 2012 shall not be reached.

Research shows that the set limit values with regard to the amount of aircraft noise allow between 450,000 to 480,000 flight movements per year.

This is the room for growth without quieter aircraft being deployed and without any other measures being taken to increase the room for growth in air traffic.

In a recently published discussion paper (Airport capacity, efficiency and safety in Europe) the European Commission expressed its concern about the fact that three-quarters of the fifty largest airports in Europe can hardly or not grow any further. In addition to the fact that many airports are simply full and that European airspace management is too patchy, the commission signalled that regulations to control nuisance and risks often generate negative results for the capacity of the airport. The dilemma between growth of the airport and

protecting the local residents requires a careful decision-making process, according to the Commission.

Consequences for prosperity

In the event that the economy starts to recover, expectations are that air traffic shall shortly reach the limits, leading to an increasing restriction of air traffic growth. In 2008, approximately 8 per cent of flight movements can no longer be dealt with at Schiphol (41,000 of the estimated 487,000 slot applications). In 2012, this shall have risen to twenty per cent (120,000 of the estimated 588,000 slot applications).

Calculations show that the more traffic is rejected, the less prosperity shall develop (the so-called 'loss in prosperity'). Not only does this concern the price based on scarcity, but also the loss in network quality which is translated into a lower frequency, more transfers and longer waiting and travelling times than would be the case without growth being restricted. In 2008, higher ticket fares and a lower network quality causing a fall in air travel figures are expected to result in a reduction in prosperity of over 600 million euros for the users of the airport; 180 million for Dutch families and businesses and 430 million euros for foreign families and businesses. In 2012, the total 'loss in prosperity' amounts to over two billion euros, of which 660 million for Dutch families and businesses. In 2008 and 2012, the anticipated loss in profits for the aviation sector amounts to 20 and 65 million euros respectively.

Consequences for the development of the main port

If the capacity is limited, the number of transfer travellers shall be affected more than proportionally. After all, travellers transferring are more sensitive to fares than travellers with local destinations. Calculations for the 2012 target year demonstrate that if air traffic growth is slowed down, approximately 27 per cent of travellers transferring shall no longer travel via Schiphol, whereas for travellers boarding and disembarking this figure is 13 per cent. This shall impact the very core of the main port function. Due to the reduction in the number of transfer passengers the intercontinental network of Air France-KLM shall be scaled down. After all, 31 of the 55 intercontinental destinations consist of a transfer proportion of 80 per cent or more. If the transfer proportion was to fall considerably, these connections could no longer be operated with a profit. In 2008 and 2012, in the event of modest economic growth, the set limit values for the amount of aircraft noise are not expected to affect the capacity of the airport. In that case the regulations and limits of the Schiphol Policy shall not restrict main port development.

Consequences for employment

Calculations show that a reduction in aviation growth reduces employment opportunities at the airport and businesses related to Schiphol. In 2012, that difference

- assuming the economy recovers - could have increased to 36,000 jobs. According to common economic mechanisms the majority of these people could find work elsewhere. However, semi and unskilled workers for whom there is a structural shortage of jobs are an exception to this rule. The airport in particular employs many unskilled workers. In 2012, even if the main port is restricted in its further growth, the airport employs approximately 7,000 more people than in 2004.

Possible reaction to a shortage in capacity

Expectations are that the parties involved shall, where possible, try and reduce the loss in prosperity caused by the limited room for growth. Quieter aircraft and quieter flight procedures allow more flights within the set limit values for aircraft noise. Transferring flights which are less important to the development of the main port could create room at Schiphol for flights which are important to the main port.

As an example of stimulating quieter air traffic to increase the room for growth, researchers explored a bonus/malus system in which quiet aircraft are rewarded, while an additional levy shall be imposed on noisy aircraft. Expectations are that, in that case, only 10,000 slot applications need to be rejected in 2008 (in stead of 41,000) and nearly 60,000 in 2012 (instead of 120,000). In that case, capacity would be approximately 480,000 flight movements in 2008 and 530,000 in 2012. The losses in prosperity are expected to be much lower with such a bonus/malus in place compared to operating without such a system: in 2008 the loss in prosperity amounts to 20 million euros, in 2012 this is 135 million euros.

An overall exploration of the range of possible measures to increase room for growth within the set limit values for the amount of aircraft noise demonstrates that additional room for growth for aviation can be created particularly by handling increasingly less noisy traffic during the night and introducing levies on noisy aircraft while rewarding quieter aircraft. When calculating limit values for the amount of aircraft noise, night flights count for ten times as much compared to traffic during the day. Another measure which can possibly create additional room for growth is transferring part of air traffic to regional airports.

Considering the benefits and burdens of the main port

As part of the economic study into the development of the main port, the loss of prosperity in the Netherlands has been calculated assuming aviation growth is restricted. However, when doing so, it is also relevant to know what the 'gain' in prosperity would have been. After all, when air traffic growth is limited there is less nuisance, smaller safety risks and the emissions of air polluting substances are lower compared to when aviation growth would not be limited. In order to consider these losses and gains in prosperity, it is important that the environmental effects are expressed in monetary units as well. The results of

that study are available following completion of this report and shall be included in the government position on Schiphol in April 2006.

3.4 Responses by the Council for Housing, Spatial Planning and the Environment and the Council for Transport, Public Works and Water Management

The government has requested two advisory councils, the Council for Transport, Public Works and Water Management and the Council for Housing, Spatial Planning and the Environment, to respond to the survey into the effectiveness of the Schiphol Policy. The Councils have prepared these responses independently from each other. Their replies are aimed particularly at the realisation of the objectives of the policy, controlling nuisance and risks and the development of the main port. The Councils have made proposals for these issues as well. The responses have been attached as an appendix. The main features are described below.

Council for Transport, Public Works and Water Management

The Council for Transport, Public Works and Water Management states that there is a lot of distrust among local residents, sector parties and local administrators. Although the Council regards the studies into the effectiveness of the policy and the summary thereof as neutral and balanced, many of those involved shall have a different opinion. There are other options in addition to the evaluation, such as alternatives for group risk or the advice from the Aircraft Noise Expert Committee. The evaluation has yielded a large amount of dissimilar factual information, which shall give everyone something to suit his taste. Against this background, the Council confines itself to the issues that matter: noise and growth. After all, aircraft noise is the biggest nuisance. At the same time, the limit values for the amount of aircraft noise are most restrictive for the capacity of Schiphol.

The Council found that there was no support for what constitutes 'feasible capacity' at Schiphol. Researchers used different future forecasts. Apparently the system is so complex, there is no unequivocal picture. Also, the Council observes that the various researchers do draw the same conclusion: if the economy recovers, it shall no longer be possible to fully honour the demand for capacity. In addition, the Council was disappointed about the lack of clarity in the effectiveness survey as to how the capacity of the airport could be increased within the limit values for the amount of aircraft noise. After all, quieter aircraft and flight procedures make it possible to increase traffic within the noise limits.

The Council feels that in the next years the policy agenda must pay more attention to process quality - rebuilding trust being the main objective. More than ever before, the parties must identify facts, causes and solutions

together. It is also important for the airport to visibly make an effort to reduce nuisance and to build up a good relationship with its neighbours. Like this evaluation, local residents should not be kept at bay during that process. Such a shared process must be in line with the developments within the Regional Consultation Committee Schiphol Airport (CROS). The Government must be involved in this.

Action must be taken as well. In the short term, the limit values for the amount of aircraft noise restrict the development of the main port. Inspired by the effectiveness survey, the proposals for improvement and the Council's advice 'It's no use hiding ...', the Council proposes the following solutions:

- elaborating and experimenting with low-noise flight paths and procedures;
- mapping out the benefits of bundling traffic, i.e. concentration of the nuisance;
- supplementing the system with 'noise cameras' for the benefit of enforcement and provision of information;
- inciting airline companies, with levies, to use ultra-silent aircraft and to discourage the use of noisy aircraft;
- changing the current system of slot allocation into a system in which 'quieter, cleaner and safer' play a role, as well as the airport's contribution to the network;
- shifting traffic that is not essential for the main port development to regional airfields;
- nuisance cannot be avoided, so make sure those who are seriously affected are bought out or compensated.

Environmental Council

The Environmental Council feels that the setup and results of the different sub-surveys have been insufficiently integrated to enable the Council to assess the effectiveness - and efficiency - of the policy. According to the council it would have been better to evaluate the separate lines of the evaluation together. The lack of a clear objective for the development of the main port is a deficiency according to the council, as is the departure from a view through to 2020. In addition, the results of the effectiveness survey should be geared more towards the dilemma that shall arise when air traffic reaches the environmental limits, and what the adjustment possibilities are. Furthermore, the council feels that the current Schiphol Policy has not paid enough attention to a number of aspects: the wider context of the policy for spatial planning, climate and mobility. With that, the advice feels very much like a list of agenda items. The council also has a number of points which should be reconsidered fundamentally:

- The council pleads for a management concept which defines the distribution of responsibilities between the airport and the government better than is currently the case. The government stipulates the conditions (space and environment) within which the airport can operate as a normal company.

- The relation between central and decentralised management must be reconsidered. The council deems it feasible to create a market where aviation space can be exchanged for regional quality of life.
- The regulations and limit values are difficult to fathom and do not seem to guarantee the control of environmental quality. The Council for Housing, Spatial Planning and the Environment pleads for a transition to a system that is managed more in terms of the effects on air traffic. Quality standards for the living environment are the focus of attention in this respect. Standards are enforced through measurements instead of calculations.
- The restrictions on residential building and the construction of industrial estates have met with a lot of incomprehension. A transparent environmental quality policy therefore provides opportunities for a decentralised spatial planning policy. The regions can make their own choices between the development in the use of space on the one hand, and the control of nuisance and risks on the other.
- Air traffic concentration can contribute to an increase in capacity and more predictable nuisance levels. As a result of better predictability combined with compensating measures, concentration should be more socially acceptable.
- If Schiphol reaches the set regulations and limit values, the redistribution of traffic across Schiphol and regional airports could be an option. Management of the airports however is in the hands of different administrations. This way, the sector cannot start a redistribution process.
- A revamped Schiphol Policy shall not provide final clarity as to the balance between noise pollution and the room for growth. New insights into the seriousness of the environmental effects or the value of the main port to our country are unavoidable. The balance between noise and the room for growth should be re-identified on a regular basis, which shall lead to a dynamic policy. In respect of the trust among local residents, the sector and the government it is important to communicate those unavoidable dynamics.

3.5 Conclusions about the effectiveness of the Schiphol Policy

In 2003, 2004 and 2005, nuisance and risks were controlled. None of the regulations or limits restricted the development of the main port. The government therefore concludes that during the past years the objective of the legislation has been achieved: 'stimulating maximum use of the airport with due observance of the limits regarding safety and environmental protection'. In the event of moderate economic growth, the airport is expected to further develop within the regulations and limits until 2012. If the economy recovers and air traffic surpasses growth levels as seen during the past years, the development of the main port shall be restricted by the limit values for aircraft noise levels as from 2008. As a result,

prosperity is set to rise less compared to the situation in which market demand would be fully accommodated, also referred to as a 'loss in prosperity'.

Although the regulations and limits control nuisance and risks, they are not at their lowest possible levels. In respect of the development of the main port, quieter air traffic can be stimulated to a greater extent, causing the air traffic's room for growth to increase. The government therefore concludes that there are opportunities for improving the Schiphol Policy.

The government identifies the following reference points for improvement.

Efficient use of the air traffic space within regulations and limit values

More traffic, passengers and goods can be dealt with within the set regulations and limit values if quieter aircraft are used. The amount of traffic within the regulations and limit values can also increase if the number of daytime flights is increased and the number of night flights is reduced. Also, by rewarding companies that use silent aircraft and letting companies that use noisy aircraft pay, the allowable noise limits can be used more efficiently. The policy only attaches a maximum to the annual noise levels. It does not generate the quietest possible air traffic. Neither does the policy ensure that the rare allowable noise limits are allocated to those flights that are important to the main port. Since the set limit values for the amount of aircraft noise have not yet been reached, the policy's incentive is not yet effective. Furthermore, it is not sure whether the policy shall be effective if the set limit values for the amount of aircraft noise have been reached. The airport, airline companies, slot coordinator and air traffic control - none of them really benefit from investments in controlling the nuisance. The room for growth, caused by an airline company's investment in quieter aircraft, benefits all airline companies, including the competition. That means that an airline company making an investment is indirectly affected by competitiveness. The question is how to incite the airport and the airline companies into using the quietest possible aircraft, and how it can be stipulated which air traffic is important to the main port and to stimulate that type of air traffic.

Regulations which are aligned to the actual development of the aviation market

The regulations and limit values are based on the anticipated use of the airport in the future. In practice, the market develops differently than expected. Not only the economy is difficult to predict - so are the development of goods carriage, the renewal of the fleet, the formation of alliances, liquidations, or the popularity of destinations. The past has demonstrated this: up to now, the environmental standards have been adjusted every three to five years because aviation developed differently than anticipated. As the use develops differently in practice than anticipated, the environmental effects

of air traffic are different too, while the room for growth appears to be smaller than expected. This invokes the question whether the environmental preconditions have been formulated in such a way that the airport and airline companies can take their own responsibilities within that context.

Regulations which enable further growth of the main port

The Schiphol Act contains a main port objective. The key of the policy is that the main port can develop within the set environmental preconditions. Research has shown that when the economy recovers, the main port shall soon reach the growth limits due to the environmental preconditions. The room for growth of air traffic is smaller than anticipated upon adoption of the Schiphol Policy. The growth limits have not yet been reached. It must be noted however, that this is partly due to the fact that growth came to a standstill during the past years. This invokes the question whether the main port objective as contained in the Schiphol Act can be achieved in the future with the current policy and, as the government states in its White Paper on Mobility, whether Schiphol can continue to develop in its current location until 2030. What are the remaining possibilities as to development, and will it enforce the main port function of Schiphol? Can regional airports play a bigger role?

Regulations which are in line with the perceptions of local residents

Current regulations and limit values assume annual averages, while the perceptions of local residents are mainly determined by the time, the predictability, the noise levels and the number of aircraft flying past. Annual averages for nuisance measurements shall also render tit for tat enforcement impossible. However, the annual averages for nuisance measurements (L_{den} and L_{night}) are in line with European legislation. The question is how the current regulations can be better aligned to the perception of local residents.

Predictability of nuisance

In addition to the transparency about the development of Schiphol in the future and the effects thereof on the surrounding area, the 'daily' predictability of air traffic is also important to local residents: why are there suddenly flights over my house all day long, and what can I expect next week? Predictability about where aircraft fly and why is therefore important. The question is: should regulations and limits change; can it be dealt with through improved provision of information in order to make nuisance more predictable?

Nuisance control in residential areas further away from the airport

The policy ensures that the number of houses subjected to high noise levels shall be restricted as much as possible. However, by far most people affected by air traffic live

outside that area. The policy now protects them against high noise levels (exceeding 58 dB(A) L_{den}). Nevertheless, reduced noise levels are still a nuisance. The question is whether it is possible and desirable to reduce this nuisance in residential areas further away from Schiphol more than ever.

The possibility of regional contribution in the decision-making process on Schiphol issues

Local residents and regional administrators experience the reduction of the use of space as (too) restrictive and unjust. There is constant pressure to relax regulations and to grant an exemption from the building restrictions. Building restrictions, demolition, sound insulation and compensation all require more customisation. Furthermore, the airport wants to make arrangements with local residents about the use of runways and flight paths without the intervention of The Hague.

The question is: who better to determine whether there should be any building, living and working activities in the restricted areas than the municipalities and local residents themselves? Aren't agreements between the sector and local residents more effective than regulations from The Hague? Should the Government confine itself to the main features of the use of space more than it does now?

Removing ineffective regulations and limits

The Total Volume Noise (TVG) restricts the total amount of noise, but does not reduce noise in densely populated areas. It therefore offers the local residents no protection at all. The Total Risk Weight (TRG) controls the chances of an accident, but does not arrange for flights to take place over areas where the risks for local residents are smallest. Nor does the TRG have any added value: it offers local residents no protection.

When a small change is made to the use of the airport the restricted areas must be adjusted as well, as with a prohibition on new construction. Since buildings are constructed for a longer period of time and require large investments, it begs the question whether the restricted areas should not be designed better so as to make them less sensitive to changes in the use of the airport.

The government's basic principle is not to set any unnecessary regulations, and therefore it wants to find out if there are policy instruments that can be dropped. The question is whether the ineffective instruments are also unnecessary and can therefore be dropped.

Clarity regarding the future

Local residents, the municipalities, businesses and the airline industry all indicate they want clarity as to Schiphol's future.

As from 2003, the Schiphol Policy has been contained in the Schiphol Act and the Airport Decrees. This policy stipulates the possibilities of the aviation development and the effects of air traffic in the surroundings. The

question is whether evaluation of this policy and the studies into the future of the main port are reason to change this policy.

The government shall have to answer that question in the government position in April 2006.

Clarity about responsibilities and positioning of Air Traffic Control the Netherlands

LVNL is an independent authority and is therefore the responsibility of the Government. At the same time, LVNL is part of the aviation sector. The question is whether this double role does not cause any problems in terms of authority. Furthermore, it is not clear whether the responsibilities of LVNL have been laid down in a transparent manner.

4

Improvement Proposals for the Schiphol Policy

Can the Schiphol Policy be improved? In answer to this question, the government received 682 proposals from interest groups, municipal administrations, sector parties and research agencies. Some of the proposals include: choose approach and departure routes that cause less noise pollution, and improve communication. The Ministries for Transport, Public Works and Water Management, and Housing, Spatial Planning and the Environment have discussed the proposals with the petitioners and have outlined the effects of the proposals on the living environment and the development of Schiphol.

Most improvement proposals have advantages, although there are some disadvantages. Moving flight paths seems to improve quality of life in one location, but then it often deteriorates in another location. Concentrating aircraft noise on a certain route or distribute it across a wider area: these are alternatives that must be considered. The cabinet shall do so in its position of April 2006. During so-called pilots, the Regional Consultation Committee Schiphol Airport (CROS) wants to test a number of proposals which appear to be technically feasible in the short term.

4.1 Introduction on improvement proposals

In the evaluation of the Schiphol Policy, the cabinet offered the possibility of submitting proposals to improve the policy. In practice, certain parts of the current policy could turn out not to be effective, leaving room for improvement. That is why the cabinet was particularly curious about practical experiences and improvement proposals from those involved, such as local residents, administrators and sector parties. The parties involved thus were given the opportunity to make policy proposals themselves instead of having to respond to cabinet proposals afterwards.

You will find the approach and results of the study into improvement proposals in paragraph 4.2. In addition to the improvement proposals made by the parties concerned, the Aircraft Noise Expert Committee (CDV) also made improvement proposals. The cabinet has asked the CDV to carry out a study into a number of specific issues. These issues and the results of the study are described in paragraph 4.3. Finally, paragraph 4.4 describes the conclusions about the improvement proposals and the follow-up process.



4.2 Proposals for improvement by the parties concerned

4.2.1 Approach

Everyone had until 1 July 2005 to submit an improvement proposal at the evaluation planning office. This could be done either by post or e-mail; furthermore, a special evaluation website was set up so that people could submit their proposals online. A total of 682 proposals for improvement were submitted by 138 petitioners. Both the petitioners and the contents of the proposals show a wide diversity. Proposals were submitted by for instance local residents, municipal administrations, environmental organisations, research agencies and sector parties. The Regional Consultation Committee Schiphol (CROS) also submitted a number of proposals.

Preliminary survey into proposals for improvement

In the summer of 2005 a preliminary classification and survey was carried out in respect of the submitted proposals for improvement. The classification has led to an arrangement into a number of themes:

- departing and arriving traffic;
- use of runways and flight paths;

Number of proposals per category of petitioners

business	5
professional party involved	57
NGO expert	16
municipality of Aalsmeer	9
municipality of Alkemade	15
municipality of Amstelveen	9
municipality of Amsterdam	5
municipality of Bloemendaal	7
municipality of Haarlem	5
municipality of Haarlemmerliede and Spaarnwoude	14
municipality of Haarlemmermeer	12
municipality of Liemeer	6
municipality of Oostzaan	1
municipality of Uithoorn	17
municipality of Wormerland	12
municipality of Zaanstad	14
municipalities of the Zuid-Kennemerland region	1
joint platforms	5
civilian	211
authorities/municipal environmental department	16
consultative body	92
platform	147
province of Zuid-Holland	6
total	682

- establishment of common standards;
- spatial planning;
- main port strategy;
- communication;
- compensation;
- political-administrative and organisational.

The preliminary survey provides information on each (sub) theme in respect of the consequences of the proposals on the living environment, the main port and feasibility. All petitioners received the preliminary survey and were given an opportunity to respond. Most responses demonstrated that the preliminary survey showed a clear overview of all improvement proposals. Some of the petitioners indicated that some proposals were relayed or described incorrectly.

Visits to petitioners of proposals

Following on from the preliminary survey, the petitioners of improvement proposals were approached to discuss their proposal. The objective of the interviews was to find out if the proposals had been understood correctly, to learn about the backgrounds and motives of the petitioners, and to observe the local situation. For that reason, the interviews were preferably held at the petitioner's home or place of work. This also provided a better picture of the various forms of nuisance caused by air traffic in the surroundings of Schiphol and the petitioners' personal perception thereof. A general report about this interview round has been included in the appendices.

Number of proposals per theme

Use of runways and flight paths	Use of runways and flight paths	62
Use of runways and flight paths	Ground level noise	16
Use of runways and flight paths	Night time use of Schiphol	40
Use of runways and flight paths	Distributing nuisance	20
Communication	-	35
Compensation	Financial	18
Compensation	Insulation	14
Compensation	Insulation and financial	4
Traffic - arriving	Volplane approach	17
Traffic - arriving	Higher approach	11
Traffic - arriving	Steeper approach	3
Traffic - arriving	Recording approach routes	13
Traffic - arriving	Shifting approach routes	33
Main port strategy	-	41
Establishment of common standards	Covers multiple sub-themes	8
Establishment of common standards	Noise	63
Establishment of common standards	Enforcement	5
Establishment of common standards	Nuisance perception	17
Establishment of common standards	Air pollution	17
Establishment of common standards	Safety	6
Spatial planning	Restrictions use of space	42
Spatial planning	Strategy use of space	1
Traffic - departing	Staying on starting route longer	17
Traffic - departing	More accurate use of starting routes	23
Traffic - departing	Steeper or flatter departure	8
Traffic - departing	Shifting starting routes	49
Institutional and legal framework	Institutional framework	30
Institutional and legal framework	Legal framework	7
Falls outside the scope of this survey	-	51
Reference to other petitioner	-	8
Other	-	3
total		682

It is striking to see that many of the petitioners have a lot of detailed knowledge about air traffic to and from Schiphol. This knowledge ranges from being able to indicate nuisance and nuisance moments, knowledge and ideas as to how to improve this in practice, to knowledge of policy and legislation over the years. The knowledge of (the objectionable effects of) air traffic is very useful to the parties involved - particularly the aviation sector - in effectively reducing nuisance. In practice this knowledge appears to be used hardly at all.

Apart from this issue as to how complaints are dealt with, the interviews highlighted a number of other recurring themes such as:

- attention for the quality of the living environment;
- improving the provision of information and communication about policy decisions and the effects thereof by Schiphol, Air Traffic Control the Netherlands (LVNL),

municipalities and the government;

- accurate use of the routes agreed upon, clearly visible and strict enforcement;
- a desired improvement in the attitude and actions of the authorities, Schiphol, air traffic control and other parties concerned, including CROS towards local residents. This concerns talking to people correctly and quick and correct implementation of nuisance-restricting (policy) measures, such as sound insulation.

Theme meetings

On some occasions, multiple petitioners submitted a proposal on a certain theme. The planning office organised three meetings in order to enable these petitioners to talk to each other and to representatives of the Ministries of Transport, Public Works and Water Management, and Housing, Spatial Planning and the Environment. The objective of these meetings was to explore - in a dialogue - the differences and similarities between the various improvement proposals and particularly to find out what the underlying ideas were. The meetings dealt with the themes political-administrative/organisational, compensation and distribution of air traffic in the surrounding area. The meetings were particularly



useful to define a number of problems - in addition to the proposed solutions - which the petitioners wished to tackle by means of their improvement proposal. The relevant discussion yielded a number of valuable starting points for the formulation of the government position. The complete reports of the three meetings are included in the appendices.

Advices

In order to obtain a picture of the feasibility of and level of support for the proposals, CROS and a local residents' panel were asked for their advice on the proposals for improvement. In addition, all parties involved had the opportunity to give their reactions to the preliminary survey and the feasibility of the proposals.

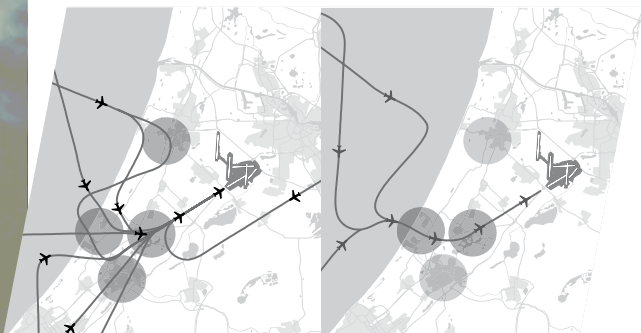
Like the results of the interviews with the petitioners and theme meetings, the government shall include the advices when considering the proposals for improvement. This consideration shall be included in the government position in April 2006.

Advice from the Regional Consultation Committee Schiphol (CROS)

In the CROS, the administrators and local residents living

near the airport can develop ideas as to the reduction of nuisance, together with the aviation sector. If such ideas are supported by all those involved in the CROS, they can count on a wide level of support, because various parties and organisations are represented in the CROS. The CROS has used the possibility of submitting proposals for improvement. In addition, the CROS was asked to respond to all improvement proposals submitted by others and to indicate which of those it considers feasible.

On 1 December 2005, the CROS presented its findings. For the time being the CROS does not comment on the proposals. It concludes that a number of the proposals may contribute to nuisance restriction. According to the CROS some of the proposals are not feasible in the short term due to practical or technical reasons. During so-called pilot, the CROS shall test a number of proposals which seem to be technically feasible in the short term. The CROS itself submitted these pilots as improvement proposal in order to test which improvements are possible in practice. The improvement proposals regarding, among other things, the improvement of communication and the processing of complaints are in line with the way in which the CROS views these issues. Within the CROS,



many improvement proposals are under discussion, because fundamental choices such as the distribution or concentration of aircraft noise are involved.

Finally, the CROS has expressed its concern about the LVNL having sufficient means and manpower to assess and help implement all proposals for improvement. LVNL has told the CROS members that a sufficient amount of capacity has been reserved for the pilots.

Advice from local residents' panel

In order to be able to form a picture of how a reflection of local residents of Schiphol views the submitted improvement proposals from their environment, a local residents' panel was formed. The organisation and supervision of this local residents' panel has been put in the hands of experienced process supervisors. Following a careful recruitment and selection process, 22 local residents were selected for the panel. At the end of November 2005 the panel issued a joint advice. The participants in the panel have been explicitly addressed in their capacity of 'local resident', not as representative of their community or on the basis of any other expertise. The panel has been informed about the objective and background of the panel, the evaluation and the

proposals for improvement. With a view to the large amount of improvement proposals, the often technical nature of these proposals and the time available for discussions, the panel members made the unanimous decision to discuss the improvement proposals per theme. They expressed the wish to concentrate on criteria they regarded as important during the assessment by experts when discussing the proposals for departure, arrival and use of flight paths.

Finally, for two days the members of the local residents' panel exchanged ideas about the proposals with the instruction to come to a joint advice. Various experts have lent their assistance for substantive questions. Representatives of the ministries responsible and the Process Committee were present as auditors.

For the ideas of the local residents' panel we refer to the integral advice contained in the appendices. In paragraph 4.2.2, striking recommendations made by the panel are listed under the various subjects of the improvement proposals. A number of general findings by the panel are mentioned below.

The local residents' panel has given its express view on a number of values which must be discussed upon assessment and testing of the improvement proposals.

The panel would like to see an assessment in the fields of safety, wellbeing (health, environment, noise pollution, air pollution, contamination and predictability of noise) and prosperity (economy, the main port and the retention and possible growth of capacity for air traffic). The panel unanimously declared that, in their eyes, safety comes first. That is why in principle all proposals aimed at increasing safety shall be supported wholeheartedly. The panel also attaches great value to health. All proposals leading to cleaner and quieter flights are recommended. When it concerns the consideration of wellbeing and prosperity, the panel in general did not express a preference. It has a slight preference for wellbeing over prosperity. The panel wishes for Schiphol to retain its main port function, as long as it stays within the prevailing environmental standards.

A lot of emphasis is put on the trust that local residents have in Schiphol and the government. Many of the panel's recommendations are based on the need to recover dwindling confidence. The panel observes that a lot has gone wrong during the past few years particularly when it comes to information about Schiphol. They therefore plead for the provision of objective (verifiable), reliable, accessible and public information. The sector's improvement proposal for a multi-year improvement programme is also supported within this framework.

Assessment

In order to outline the effects of all improvement proposals, an assessment framework has been set up, containing all elements required to make a final assessment of the proposals. The assessment framework

is intended to outline the effects of the proposals on feasibility, the living environment and main port development. The assessment framework does not involve a consideration. This consideration shall be included in the government position.

Using the assessment framework, a consultancy agency has outlined the effects of all individual proposals. The effects of some 50 proposals have not been outlined on the basis of the assessment framework. This concerns proposals which:

- fall outside the scope of the evaluation, such as an airport out in the sea;
- fall outside the jurisdiction of the government;
- refer to another petitioner (which proposal has been assessed);
- relate to the approach of the evaluation;
- are implemented already;
- are categorically unsafe or technically infeasible;
- constitute a different type of contribution, e.g. a declaration of support.

The effects of all other improvement proposals on feasibility, the living environment and main port development have been outlined using the assessment framework. Factors to assess feasibility include the implementation term, flight safety and legal and financial aspects. Factors such as noise levels, air pollution and external safety are relevant to the living environment, perception and health. In order to determine the effects for main port development, the capacity, climate for establishing a business and network quality have been examined, among other things. The appendix contains the full assessment framework, followed by the elaboration of all these factors.

The report “Effects of improvement proposals” contains all proposals submitted, including the results of the assessment framework outlines.

As implementers of the Schiphol Policy, Schiphol, LVNL, KLM, the Netherlands Pilots Association (VNV), the Environmental Inspectorate and the Transport Inspectorate were presented with the improvement proposals for advisory purposes. The advices have been included in this final report as an appendix. Also, an agreement was made with these parties to assess the results of the study into the effects proceeding from their responsibilities. The advices and assessments of these implementers of the Schiphol Policy shall be closely involved in the formulation of the government position.

4.2.2 Results of the study into the effects of improvement proposals made by the parties involved

The study into the effects of the proposals on feasibility, the living environment and main port development yielded a lot of information. The results thereof are listed in the appendix, according to proposal. This chapter outlines the results according to theme. The various themes also

list remarkable issues arising from the recommendations made by the local residents' panel and the CROS.

Departing and arriving traffic, use of runways and flight paths

More than 300 proposals were made relating to flight procedures, and the use of runways and flight paths for departing and arriving aircraft. The study shows that more than two-thirds of the proposals in respect of the use of runways and flight paths result in a reduction of nuisance, but have direct negative consequences for the main port. Furthermore, most proposals result in a shift of nuisance to other populated areas.

Departing traffic

Nearly 100 proposals were made to move the starting routes, to use the starting routes more accurately and to stay on them for a longer period. Proposals were also made to fly out steeper or even flatter.

Feasibility

Apart from the occasional exception, the proposals to move flight paths and to stay on them for longer periods are technically feasible and safe. About two-thirds of



the proposals for more accurate use of the routes can be enforced immediately. These proposals can be partly implemented by means of modern navigation systems.

An amendment to the Aviation Act or the Airport Traffic Decree is required in respect of nearly all proposals. In order to enforce the proposals, the regulations must be amended in a number of cases.

From the moment of decision-making, the proposals can be implemented separately within a 1 to 2-year period. A complete review of the flight path structure shall take a number of years.

Effects on the living environment and main port development

The effects on the living environment differ greatly for each improvement proposal. By shifting the starting routes, nuisance shall be reduced locally while it increases elsewhere. The effects on nuisance depend on the distance from the airport and the number of people living there.

There shall be local improvements, but in all cases, part

of the issue moves to another (populated) part of the Schiphol surroundings.

The effects could include:

- a small group currently subjected to high noise levels shall be subjected to lower levels: from 85 dB to 75 dB;
- a large group currently subjected to low noise levels shall be subjected to higher levels: from 65 dB to 75 dB.

The proposals affect a couple of hundred to tens of thousands of people living near Schiphol.

Making more accurate use of the routes results in a reduction of nuisance in areas next to the route. Apart from the noise levels, perception also plays a role in this reduction.

Not all proposals have an effect on the main port. In the case of approx. twenty proposals to move the flight paths, the hourly capacity shall drop by 5 to 30 per cent on the relevant flight path. For these proposals this means there shall be negative consequences for punctuality and the network, while there shall be additional costs for the airline companies. However, this does not necessarily mean that annual capacity shall drop.



Arriving traffic

Nearly 80 proposals were made to move and secure approach routes, and/or to change the approach procedure. Increasing the number of approaches over sea is regarded as an improvement. Dozens of petitioners also regard changing the night time and daytime approach procedures by landing in a descent at a greater altitude (known as the Continuous Descent Approach, CDA) as a sound and realistic possibility of further reducing noise levels.

Feasibility

The proposals are technically feasible and can be implemented in a safe manner, with the exception of 10 proposals for steeper approaches. Most proposals require a change to the working methods of air traffic control. Additional training is required for this. Implementation of the proposals for arriving traffic may also require changes to departing traffic with a view to safety.

The proposals can be implemented within a couple of years, with the exception of daytime CDA, which requires a longer implementation period. The term for implementation of the proposals furthermore depends on the number of changes.

Effects on the living environment and main port development

The effects on nuisance differ greatly for each improvement proposal. The proposals shall not lead to a change in nuisance close to the airport. Increasing the number of approaches over sea shall result in a reduction of nuisance for part of the coastal area. The effects of approaches at a higher altitude can be perceived at a distance of more than 12 kilometres from Schiphol; that is where approaches at a higher altitude generally result in lower noise levels. Certain areas shall be subjected to an increased number of approaches compared to the current situation. CDA procedures provide the same picture as higher approaches. Fixed approach routes generate a concentration of traffic and nuisance, but do not result in lower noise levels below the routes. The number of people for whom nuisance can be reduced is difficult to assess on the basis of the proposals. In general it can be stated that changing the approach procedures can result in a reduction of nuisance in large parts of the area surrounding the airport. The six proposals for changing night time approach procedures hardly yield any reduction in nuisance at all.

Most proposals for arriving traffic have an effect on main port development. If CDA procedures and fixed routes were to be implemented now, they could lead to a halving of the hourly daytime capacity. This has direct negative consequences for punctuality and the airline company network, and consequently, for the main port function of Schiphol. CDA procedures and fixed routes can be implemented without loss of capacity within a three to five-year term. Implementation requires changes to the number of take-off and landing procedures and flight paths. The exact term within which these can be implemented depends on the training and implementation at air traffic control and how fast all air traffic can dispose of the required technical equipment. This concerns navigation equipment in particular.

Advices

The CROS sees opportunities for CDA. In its improvement proposal, the CROS proposes to carry out practical tests on the improved (night time) approaches. Such a pilot carried out by the CROS should provide an insight into the possibilities and feasibility of implementation of daytime CDA. The CROS concludes that many proposals for improvement require changes to be made to the air traffic control systems or airspace. An example is fixed approach routes over sea, thus avoiding residential nuclei.

Use of runways and flight paths

Nearly 140 proposals were made to change the use of runways and flight paths. This does not only concern proposals directly relating to the use of the runways and flight paths (approx. 60), but also proposals about night time use of Schiphol (approx. 40, 35 of which about extending the night until 7.00 a.m.), distributing

nuisance (approx. 20) and ground level noise (approx. 15). The proposals to reduce ground level noise are discussed separately in this paragraph.

Feasibility

Most of the proposals are technically feasible and safe, within the limits dictated by the weather. Nearly all proposals require for changes to be made to legislation, because the use of the airport changes. From the moment of decision-making, the proposals can therefore be implemented within a 1 to 2-year period. Changes to the use of the runways may lead to changes to the area in terms of (additional) insulation. The costs are estimated at a couple of millions of euros.

Effects on the living environment and main port development

The effects on the living environment differ greatly for each improvement proposal. There shall be local improvements, but in all cases, part of the issue moves to another (populated) part of the Schiphol surroundings. The proposals affect a couple of hundred to tens of thousands of people living near Schiphol. As a result, proposals also affect the restrictions of the use of space, e.g. residential building.

The proposals to use the runways differently generally do not affect the main port function or its development. The proposals to reduce night time use of Schiphol by extending the night time regimen among other things do have an effect. Spreading nuisance has few negative effects for the main port.

Advices re departing and arriving traffic, use of runways and flight paths

The local residents' panel focuses on criteria for the assessment of the proposals for departing and arriving traffic and the use of runways and flight paths. The panel leaves assessment and selection to the experts. The panel does plead for an increase of flights over the sea. The panel is divided as to the issue of spreading or bundling air traffic. When it comes to approach routes, most panel members opt to concentrate approaching traffic as much as possible. Whatever the option, according to the panel, the predictability of air traffic is of paramount importance.

The local residents' panel supports a legal base for the execution of experiments. In that case, preconditions shall apply, such as good communication with the surroundings and accountability to the government.

The CROS concludes that various improvement proposals regarding flight procedures and the use of runways and flight paths could be perfectly executed during a pilot or experiment before laying them down in legislation. Only then can the desirability of the proposals be properly assessed. As an example, CROS mentions the proposal to spread or concentrate the flight paths. According to

the CROS, each case requires a separate assessment into the best result, measured according to nuisance suffered by the surrounding area. The CROS thinks that the principle of higher approaches is feasible. For each runway it wants to assess which of the possibilities of higher approaches would actually lead to a reduction of nuisance and whether those possibilities are acceptable from a capacity and safety point of view. The CROS is working on a number of potential experiments.

As yet, it has no opinion as to the desirability of further reducing air traffic in the early hours of the morning between 6 and 7 o'clock. The KLM points out that these early hours are vital for its business operations and the main port.

Ground level noise

Nearly 15 proposals were made to reduce the effects of air traffic on the ground. Improvements may include removing the effects and the cause. This could be carried out by reducing air traffic, particularly (cargo) planes taking off from the Polderbaan runway. In their proposals for improvement, local residents indicate that after the Polderbaan runway was taken into use, the nuisance caused by ground level noise from taxiing, departing



and landing aircraft increased significantly, particularly in Vijfhuizen and part of Hoofddorp. Among other things, the parties involved - united in the residents' association Hoofddorp-Noord - indicate the need for at least recognition for and a definition of the problem; they regard it as an omission when the Polderbaan runway was constructed. The State Secretary for Housing, Spatial Planning and the Environment has now indicated the fact that this issue was underestimated during the formulation of the current policy. A study should now identify the cause of this problem and what could be done about it. The final study shall be completed in February 2006.

Advice re ground level noise

The CROS is of the opinion that nuisance caused by ground level noise should be reduced, and it hopes that the results of the study help to assess the feasibility of the proposals for improvement, such as noise barriers.

Establishment of common standards

According to more than 100 petitioners, the current system of establishing common standards (the regulations and limit values) is far removed from the nuisance actually suffered by local residents. They therefore

propose different systems. This includes:

- more measurements instead of calculations;
- sharing the environmental benefits with the surrounding area;
- more enforcement points;
- regulations for ground level noise;
- changing the night time regimen (air traffic between 6 and 7 a.m.);
- proposals for other types of enforcement and implementation of enforcement by a party other than the Transport, Public Works and Water Management Inspectorate.

Effects on the living environment and main port development

In general there are no direct effects on the living environment. Perception and the increase of trust are expected to be indirectly affected.

Advices

The local residents' panel paid a lot of attention to the issue of the establishment of common standards. The panel proposes to validate the calculations of aircraft noise by means of measurements.



Complaint registration must be transformed into a complaint management system, to be executed by a neutral organisation. Currently the complaints are not handled; they are only registered, while potential solutions are not looked into.

The local residents' panel is surprised to find that no limit values are in place for noise peaks (Lmax) and ground level noise. According to the panel it is the noise peaks causing the nuisance. In this respect, the panel also emphasises the need to promote the use of quieter aircraft.

Spatial planning

Some local residents and municipalities regard the restrictions on the use of the space around Schiphol, contained in the Airport Layout Decree Schiphol, as too restrictive. On the other hand, other petitioners plead for tighter restrictions on new constructions and an increase of demolitions. Approximately 40 proposals were submitted in respect of spatial planning. Proposals were made to simplify legislation to enable a faster definite answer as to the construction of homes and other functions. A statement by the Government that one is permitted to install a dormer window is regarded as superfluous legislation. Other proposals relate to the tension between drawing

a line on the map and explaining the restrictions to local residents. This is the case in safety demolition zones and in the area where homes are insulated. There are also proposals to view the spatial planning issue surrounding the airport differently, i.e. in terms of the added value for the economy and quality of life. Finally, proposals were made to decentralise the process of setting restrictions from the provinces to the municipalities.

Effects on feasibility, the living environment and main port development

Proposals to abolish or loosen restrictions for new construction may eventually cause other people to be affected as well. However, these people themselves choose to go and live in these locations. Proposals for additional restrictions yield a smaller amount of affected people. Decentralising the process of setting restrictions in itself hardly has any effect on the living environment and main port development, but does affect the government's option of managing on the basis of nuisance control. Also, the question is how more freedom for the region or local residents to make their own choices shall affect the lack of space.

Advices

The local residents' panel observes the importance of spatial planning when absorbing the growth of the aviation sector and therefore issues a positive advice in respect of the proposals pleading for a change to the infrastructure (public transport, road network, parking spaces, etc.) in the region around Schiphol.

Main port strategy

More than 40 proposals deal with a different strategy for the use of Schiphol.

Transferring various types of traffic (low-cost, charters and cargo) and an increased and more targeted use of regional airports such as Rotterdam and Lelystad are discussed in approx. 15 proposals. The basic principle of these proposals often is that said types of flights do not or hardly contribute to Schiphol as a main port.

Approximately 10 petitioners propose for Schiphol to concentrate more on quality instead of quantity, i.e. more added value for less or quieter air traffic.

Furthermore, approximately 10 proposals and contacts with petitioners demonstrate the need for a transparent main port opinion of the Government. Those involved would like to know what the added value is of Schiphol as a main port and what the future plans are. The requested opinion as to the main port is included in the government position about Schiphol of April 2006.

Feasibility

Transferring certain types of flight requires partial amendment of (EU) legislation, which shall take some time. A number of proposals argue that an 'airport system' is required and that part of air traffic can be transferred to Lelystad airport. Such proposals also

have financial consequences. Increased use of regional airports requires new investments for instance. Such an airport system also requires consultation between the authorities involved.

Effects on the living environment and main port development

Transferring cargo planes leads to a reduction of nuisance around Schiphol. Transferring various types of traffic shall in the first instance lead to a reduction of the number of aircraft at Schiphol. However, under the current policy, the space freed up as a result of this shall be used for (more) other aircraft. The overall noise levels are not expected to fall as a result of this, while the number of aircraft shall increase. Transferring certain types of traffic (including hub traffic, charters, low-cost) negatively affects the number of destinations from Schiphol.

Advices

The local residents' panel too recognises the importance of transparency in respect of the future developments of the main port. Just like any other parties involved, local residents want to know the score. In the opinion of the panel, the management role of the Government starts with a main port opinion. The local residents' panel furthermore demands more attention for the quality of the flight movements when Schiphol grows. The panel is also of the opinion that in that case, part of the environmental benefits must accrue to the local residents.

Communication

Many local residents have indicated that the information they receive about local air traffic is insufficient or incorrect. Nearly 40 proposals for improvement were submitted in this respect. These proposals mainly deal with the provision of information. There is a need for transparency and honesty. People want to receive information in order to be able to make decisions about their personal living conditions. They think this could be the responsibility of the authorities, but also of Schiphol and air traffic control.

Feasibility

Most proposals can be implemented in the short term. Depending on the extent of the desired improvement of communication and the provision of information, the costs for this shall run into hundreds of thousands to millions of euros.

Effects on the living environment and main port development

Such improvement proposals have no effect on noise levels in the surrounding area of the main port. Transparency about the policy and the use of the airport has improved however. Clearer information can influence the potential residents' choice of where to settle. In addition, clearer information and an improved information structure may lead to an increase of trust in Schiphol and

the government. The effects on the nuisance perception are difficult to estimate.

In general, there is hardly anything to stop us from getting on with the proposals. An important factor in that respect is that the different parties come to a concrete set of arrangements together. The main factor is trust in the information provided.

Advices

Information provision and communication also feature prominently in the advice issued by the local residents' panel. It pleads for the biggest possible openness and transparency about the state of affairs in respect of the improvement proposals themselves. The panel welcomes proposals to improve communication and the provision of information.

Compensation

In general, those involved feel that nuisance should be compensated. Compensating the negative effects of Schiphol may aid the acceptance of air traffic. Nearly 40 proposals deal with multiple or other forms of compensation. Some pertain to financial compensation for damage suffered (approx. 20), some to (additional)



insulation (approx. 15) and some to investments in the living environment. The proposals demonstrate that existing forms of compensation (insulation of homes, payments from the Damages Board and purchasing homes in demolition zones) are insufficiently well-known and/or found to be inaccessible and too rigid and inadequate. One point for improvement which is repeatedly mentioned is offering local residents more compensation options. Changes to the manner and extent of compensation and the investment in the living environment require consultation and cooperation with various parties involved, such as the government, the sector, the municipal and regional authorities and local residents.

Feasibility

The implementation period and the costs depend on the extent of the compensation. Some proposals demand a change of establishment of common standards and existing legislation.

Effects on the living environment and main port development

Insulation only leads to a drop in noise levels indoors. Nuisance perception is indirectly expected to be positively

affected. If the costs are passed on to the aviation sector, it may negatively affect the competitive position of Schiphol. Based on the information currently available, no comments can be made in this respect.

Advises

The CROS is of the opinion that area-specific compensation may contribute to the local reduction of nuisance perception. The CROS thinks an option for local residents and a house move or sales arrangement are feasible and possible. Conditions are proper design and execution of the arrangements, transparency about objectives (particularly in the event of any quality of life fund) and about the positive effects on nuisance (perception).

The local residents' panel supports execution of compensatory and supportive measures and pleads for the generous (not formal and rigid) application of the regulations, by means of sound insulation and moving house for instance. The panel opposes the creation of a fund for the benefit of investments in general provisions.

Political-administrative and legal frameworks

Approximately 40 proposals were made to improve the institutional and legal frameworks. Some examples



of such proposals include the formation of an airspace board and that of a knowledge centre. Improvements to the CROS and LVNL were also mentioned in this respect. Finally, a number of proposals were submitted in the field of legislation, such as making it possible to test regulatory changes in practice first before they are permanently contained in the laws and regulations. A theme meeting about this subject, attended by a number of petitioners of proposals for improvement, led to, among other things, the identification of problems that should be solved by these types of proposals. This could include fragmentation of responsibilities, unclear powers, implicit decision-making and inadequate consideration for the human factor.

Feasibility

The formation of an airspace board, a new organisation, leads to a shift of powers, responsibilities and control of the various parties. This requires the approval of all parties.

Effects on the living environment and main port development

In general there are no direct effects on the living environment and main port development. Indirectly,

improvements can be expected in terms of trust and perception, depending on the details of the proposals.

Advises

As to the organisational proposals, the local residents' panel is apprehensive of new institutions and the delegation of powers. The panel does however support improvements to the CROS and LVNL. According to the panel, the environmental aspects in particular deserve more attention.

4.3 Proposals from the Aircraft Noise Expert Committee

At the request of the government, the Aircraft Noise Expert Committee (CDV):

- a. made proposals for an additional enforcement system for residential areas further away from Schiphol;
- b. made proposals for the manner in which noise measurements can be used in the enforcement of noise level criteria and the provision of information;
- c. evaluated the switch to European noise standards.

The advice from the CDV is included in the appendices. Summarising, the advice is as follows.

Re a. Additional enforcement system for residential areas further away from Schiphol

CDV was instructed to submit proposals for a supplementary enforcement system for residential areas located further away from Schiphol and to describe the advantages and disadvantages thereof.

To this end, CDV has made a number of proposals:

- a proposal extending the number of noise points in residential areas further away from Schiphol;
- a proposal with a zone-oriented approach;
- and proposals using noise standards which are better aligned to the perception of local residents compared to the current annual standards for aircraft noise.

However, the additional noise points are at the expense of the room for growth of aviation. Hence CDV advises to upwardly adjust the limit values of the additional noise points.

Re b. Measuring noise

The CDV carried out a number of measuring sessions around Schiphol. These measuring sessions demonstrated major deviations in the measuring data. For instance, two similar aircraft with the same features showed large differences in the measuring results under the same conditions. Since enforcement involves strict tests to confirm whether or not a concrete limit value has been observed, it is necessary that the data on the basis of which tests are conducted are undisputed. After all, an excess of one-tenth of dB(A) constitutes a breach. This cannot be reconciled with an uncertainty margin of only a number of decibels. CDV therefore believes that, unfortunately, enforcement on the basis of noise measurements alone is not possible.

However, CDV can see a role for noise measurements in terms of improving current calculations of aircraft noise. CDV therefore proposes to regularly validate the calculation method on the basis of noise measurements. Since the establishment of common standards and enforcement must be effected on the basis of the same principles, the CDV is of the opinion that the limit values for noise levels must be reviewed following each validation.

The CDV also sees possibilities in using noise measurements for the provision of information. CDV advises to examine whether the existing measurement networks offer sufficient coverage and to see whether the data of the different measurement networks can be compared with each other.

Re c. Switch to European noise standards

In 2003, the Schiphol Policy resulted in a switch from the Dutch standards for aircraft noise (K_e for the entire 24-hour period, L_{Aeq} for the night) to the new European standards (L_{den} for the entire 24-hour period, L_{night} for the night). The switch was chosen in such a way that the room for growth for aviation would neither increase nor decrease. In actual fact, the aircraft noise limits were initially determined in accordance with the old Dutch standards and then, using exactly the same aircraft noise, it was determined how high the aircraft noise limits had to be in accordance with the new European standards. This guaranteed that the room for growth for aviation would neither increase nor decrease as a result of the switch. This outwardly complicated switch was required, because there is no simple formula that says how many K_e is equal to how many L_{den} . This relation between the two standards is slightly different in each location. In those days the (then) CDV issued a positive advice on the switch applied. The CDV was then asked to evaluate the switch on the basis of aircraft noise from the 2000-2005 period. To that end, the CDV outlined the aircraft noise of Schiphol in the old and new noise standards. For the period up to 2003 this was done in respect of the then prevailing noise zones, for the 2003-2005 period in the enforcement points in the Airport Traffic Decree. The CDV concludes that the switch chosen earlier had already secured the equal space for the aviation sector and that the data in respect of noise standards for the 2000-2005 period did not yield any new insights about this. The data did not yield any unexpected issues. In general, the trends are the same, i.e. an increase in K_e is also reflected in L_{den} . In some cases, K_e decreases and L_{den} increases, or vice versa. In those cases too, the developments can be easily explained by the differences in noise standards. The CDV indicates not to see any reason to re-discuss the previous decision to switch to the new European standards.

In its government position, the government shall indicate how it wants to handle the CDV proposals.

4.4 The follow-up to the proposals for improvement

4.4.1 Proposals for improvement from the parties involved

In general, the possibility in this evaluation to submit proposals for improvement was rated positively by the parties involved. Other than during a 'normal' involvement process, this evaluation offered anyone who wanted to the opportunity of not only raising objections, but actually making proposals as to the policy. During the evaluation process, those proposals were examined, tested and assessed. The proposals for improvement, the conversations with the petitioners, theme meetings and the advices demonstrate that those who submitted an improvement proposal are often not opposed to Schiphol or the Schiphol Policy. Some plead for (much) less use of the main port and/or to handle growth selectively and carefully. In any case, the petitioners expect clear choices, generous compensation and attention for issues such as health, the people and their children and careful use of the room available, in short: give wellbeing a discernible place in the policy, in addition to prosperity. Various petitioners worked out comprehensive proposals, already showing a consideration between the benefits



and burdens of aviation. Most effects of the assessment framework were outlined in the study into the effects. However, the effects proposals have on health are not yet known in many cases, while there are no effects in a small number of cases and the effects for a very small number of cases are (indirectly) positive.

Without judging all proposals for improvement now, we can conclude that the proposals make a valuable contribution to the evaluation of the Schiphol Policy. The proposals offer a good insight into how those involved experience the policy and which issues they feel could be improved. This offers useful starting points for the future decision-making process about improvements to the Schiphol Policy.

When formulating its position, the government shall make proposals to carry out practical tests first to find out if measures have the desired effect of lower noise levels or a reduction of nuisance. This can prevent unwanted negative effects as a result of stipulating improvements to the regulations in advance. Current legislation offers no opportunity to experiment.

Technically speaking, the implementation period of this type of improvement proposals is 1 to 2 years. This does

not take into account organisational and staffing changes or the time required for studies, reaching consensus and amending laws and regulations. Add to that the time required for any practical test.

4.4.2 Follow-up

Based on the survey report, the interviews with the petitioners, the theme meetings and the advices from the CROS and the local residents' panel, the government shall give a substantiated indication in April 2006 as to which proposals are to be executed in the short term, which proposals shall be rejected and which proposals shall be taken up in principle, whether or not following a study, elaboration or an experiment. There are also some contradictory proposals, such as moving a flight path both to the left and right. It is obvious that in this case a consideration must be made as to what action to take. This also applies to proposals that influence each other. According to the current insights, approx. 15 to 20 per cent of the proposals can be taken up immediately. This mainly concerns proposals in the fields of communication, compensation and the institutional framework. It is anticipated that a similar percentage shall be immedi-



ately rejected, either because the proposal did not meet the assessment criteria (see paragraph 4.2.1), or because important objections have been raised in the fields of implementation, living environment and main port development. No verdict can be given in respect of about 60 to 70 per cent of the improvement proposals; they shall be examined more closely. This involves nearly all proposals in the field of departing and arriving traffic and the use of runways and flight paths, but further studies are also required in the fields of establishment of common standards and amending the legal framework. An important issue when changing flight procedures and flight paths is that changing flight paths in its turn leads to new nuisance and it can be disadvantageous for the predictability of local air traffic. The issue of concentrating or spreading air traffic also plays a role in this: concentrating air traffic means fewer people are subjected to an increased level of nuisance. Especially in the case of approaching air traffic, concentrating may lead to a reduction of nuisance and to improved predictability of the location of air traffic. Concentration in areas where the effects are biggest, and compensating the nuisance by sound insulation or perhaps a house move arrangement could be feasible.

Implementation

Safety issues, capacity issues and the coherence of proposals must be mapped out and answered before a final choice about the implementation of the proposals can be made. If it is decided that a large number of improvement proposals must be implemented simultaneously, the implementation period shall be extended.

5 Advices

What do the enforcers think of the new Schiphol Policy? They are the ones who carry out practical tests to see if aviation observes the laws and regulations. This chapter therefore lets two Inspectorates have their say: the Transport, Public Works and Water Management Inspectorate who supervise compliance with environmental regulations, and the Housing, Spatial Planning and Environment Inspectorate who have experience in the limitations attached to lack of space. Apart from the advices issued by these two Inspectorates, the advices issued by the Environmental Impact Assessment Commission, (EIA Commission), the Council for Transport, Public Works and Water Management and the Council for Housing, Spatial Planning and the Environment are also included.

The different advices complement each other, but are sometimes also at odds with each other. According to the advisers, more but sometimes fewer regulations are required. Local residents should be bought out more frequently, the compulsory exemption for small modifications to the home must be discontinued, part of aviation must move to regional airports, the competitive position of Schiphol should not be undermined, the consequences for municipal spatial planning must be clearer, etc. The cabinet shall consider the recommendations in its position of April 2006.

5.1 Introduction on advices

The previous chapters discussed the equivalence test, the additional questions, the effectiveness of the Schiphol Policy and the proposals for improvement. This chapter discusses the advices issued by four authorities, each of whom is involved in Schiphol and the Schiphol Policy in its own practical capacity. First we discuss the advice issued by the Transport, Public Works and Water Management Inspectorate (IVW). The IVW supervises compliance with laws and regulations. The experience gained with the (operation of the) Schiphol Act is of major importance to the evaluation. The IVW formulated its advice on the basis of the experiences gained.

The second advice was issued by the Housing, Spatial Planning and Environment Inspectorate. This Inspectorate enforces the Airport Layout Decree Schiphol (LIB) together with the IVW. The data pertaining to the development of the lack of space in the area surrounding the airport and the deviations from the regulations about the lack of space in the LIB required for the evaluation has been supplied by the Housing, Spatial Planning and Environment Inspectorate. Based on its experiences with the policy, the Housing, Spatial Planning and Environment Inspectorate issued advice on points for improvement.

The Environmental Impact Assessment Commission (EIA Commission) also issued advice about the Schiphol Policy. The advice contains recommendations in respect of the test into equal protection, the policy effectiveness survey and the proposals for improvement.

Finally, this chapter discusses the advice issued by the Council for Transport, Public Works and Water Management. The Council gave its opinion about the future of aviation in the Netherlands. In its advice, the Council discusses the tension between public interests and the economy.

5.2 Transport, Public Works and Water Management Inspectorate

The Transport, Public Works and Water Management Inspectorate (IVW) have evaluated the Schiphol Policy from the point of view as enforcer of the environmental standards. The IVW assessed the relevance for the supervision of safety and the environment of each article of the Schiphol Act and Airport Decrees. The criterion was the question whether the IVW is involved or has an effect on the scope of the article.

From that point of view, the IVW assessed the effectiveness of the policy instruments. Furthermore, the IVW outlined a large number of practical experiences with those policy instruments. On the basis thereof, the IVW drew up recommendations for improvement. Also, a number of additional subjects were highlighted which are currently not contained in the act or decrees, but with regard to which the IVW advises to have them provided

by law. This has resulted in a large number of recommendations about various subjects. The IVW also made a separate list of high priority advices. These include:

- erecting temporary obstacles (such as cranes): additional establishment of common standards;
- duty of due care; cooperation by sector parties in making provisions in order to prevent the limit values from being exceeded: clarify LVNL position and start survey into effectiveness of duty of due care;
- regulations for the use of air traffic routes, including night time approaches: change the manner in which the standard percentage for daytime deviations is applied;
- regulations for altitudes: tighten standard percentage for daytime deviations;
- height restrictions on buildings/objects: adjust and expand, including height restrictions to prevent turbulence caused by buildings;
- introduction of laser control areas; lasers can cause (temporary) sight restrictions among pilots: attach regulations to the use of lasers (e.g. lasers shows);
- measures by the Inspector General: transparency of wording in order to avoid different interpretations;
- availability of runway system and restrictions: if required, delete within the framework of reducing administrative burden;
- Regional Consultation Committee Schiphol (CROS): periodic meetings between CROS and IVW;
- the procedure 'certificate of no objection' in respect of erecting obstacles and bird-enticing objects: evaluation of the procedure in cooperation with the Ministry for Housing, Spatial Planning and the Environment;
- amending regulations and limit values in exceptional cases: protocol and expansion of article for exceptional situations outside the field of aviation which affect the use of runways and/or airspace and with regard to which the sector cannot be held responsible;
- regulations to restrict the emission of substances causing odour nuisance: reconsider;
- limit values for the emission of substances that cause local air pollution: expand measures and improve calculation method;
- no new bird-enticing activities within a 6 km radius: clarify, improve and expand.

These advices shall be included in the formulation of the government position. The advice from the IVW is included in the appendices.

5.3 Housing, Spatial Planning and Environment Inspectorate

The spatial planning policy for Schiphol has been contained in, among other things, the Airport Layout Decree Schiphol (LIB). The objective of the LIB is to reduce nuisance and risks caused by air traffic. This is done by attaching restrictions to the use of space around the airport. For instance, houses are purchased and demolished close to the airport, and in a large area

around the airport no new residences may be built. This policy is closely connected to the flight paths and use of the runways. In certain cases, the regulations may be deviated from within the areas that are subject to restrictions on the use of space. The legislator wants to facilitate small-scale developments in this field. The explanatory notes to the LIB mention a policy that should not be 'too restrictive'.

Applications for certificates of no objection can be made to the Housing, Spatial Planning and Environment Inspectorate (art. 8.9 Aviation Act). On the basis of its own responsibility, the Inspectorate responded to the evaluation of the Schiphol Policy. The Housing, Spatial Planning and Environment Inspectorate have the following to say about the effectiveness of the LIB:

- The desire of municipalities to build residences in the restricted area is great. This is directly related to the lack of residences in the area.
- The Housing, Spatial Planning and Environment Inspectorate lend their cooperation whenever residential building is safe. With a view to the size of the area subject to building restrictions, the number of objects sensitive to noise has increased slightly.
- In relation to the policy objective, the certificate of no objection is a surplus instrument when it comes to small-scale home extensions. This includes the usual home improvements (bay windows, small superstructures) which do not add to the number of residences. In anticipation of a possible amendment to the LIB, the Housing, Spatial Planning and Environment Inspectorate propose a general arrangement, as a result of which in most cases certificates of no objection no longer need to be applied for in respect of these extensions. Issuing a certificate of no objection for small home extensions (up to e.g. 50m²) is not effective in relation to the policy objective. The exemption duty should no longer apply to these situations.
- Practice has shown that not all municipalities are sufficiently familiar with the consequences of the LIB in respect of spatial planning on their land. Many municipalities for instance are not familiar with the fact that non-realised functions that are no longer permitted must be de-planned. A further study into the compliance with the LIB by municipalities and informing municipalities about the application of the LIB are desirable.
- The Housing, Spatial Planning and Environment Inspectorate plead to seek alignment to the (new) Spatial Planning Act (WRO), to reduce the administrative burden for citizens, municipalities and businesses, and to provide for a clearer consideration framework with which the Housing, Spatial Planning and Environment Inspectorate must make a decision as to (residential) building near Schiphol airport. Better alignment to the WRO prevents proceedings to be conducted in situations where the LIB does not object to the intended (residence) development.

This way, developments can be effected quicker and unnecessary costs can be avoided. Particularly for large spatial developments (such as an industrial estate) it is desirable to be able to link a certificate of no objection to a spatial planning procedure. With a view to the reviews of the WRO and the changed management philosophy of spatial planning, with government making fewer assessments, the Housing, Spatial Planning and Environment Inspectorate issue the advice to keep a close eye on these developments when formulating the policy.

The proposals made by the Housing, Spatial Planning and Environment Inspectorate are in line with the policy improvement proposals made by the surrounding municipalities and local residents. In this respect, the compulsory application of a certificate of no objection for small changes to the home for which a building permit is needed, is focal point. Proposals have been made to settle this with a general certificate. It must be examined whether this issue can also be handled differently, for instance by the alignment to the (new) WRO and the possibilities already offered by the zoning plan. With a view to air traffic expected to arrive at and depart from Schiphol, the basic principle of reservation and careful use of the space still available near the airport is focal point.

5.4 Environmental Impact Assessment Commission

The Environmental Impact Assessment Commission (EIA Commission) has issued an advice on the Schiphol policy. The advice contains recommendations in respect of the test into equal protection, the policy effectiveness survey and the proposals for improvement.

This advice comes separate from the statutory duty of the EIA Commission in respect of environmental effect reports, such as the assessment of the report on equivalence (Baarda Motion et al) and subsequent EIA procedures regarding the desired policy amendments. Due to the importance of transparency of roles, the EIA Commission is not involved in the assessment of the proposals for improvement or the substantive assessment of the evaluation results.

The objective of the recommendations made by the Commission is to come to a solid system which can anticipate changing circumstances for a longer period of time. In addition, improved provision of information to the surroundings must contribute to the improvement of trust in the policy. Most of the recommendations for the equivalence test were adopted or were part of the current survey into the effectiveness of the proposals for improvement. Also, on the basis of the advice issued by the EIA Commission, a study is carried out into the maximum effects of air traffic on noise and external safety. The results of that study shall be included in the government position.

5.5 Council for Transport, Public Works and Water Management

On 1 July 2005, the Council for Transport, Public Works and Water Management issued the advice “It's no use hiding ...” about the future of aviation in the Netherlands. In its advice, the Council discusses the tension between public interests and the economy.

According to the Council, Schiphol as gateway to and from the rest of the world is an essential trump card in a world that is globalising fast. Especially for an open, trade-oriented economy as that of the Netherlands. In that light, restricting the growth of aviation is unacceptable. The Council also observes that a nuisance-free main port is impossible, but that the Schiphol dossier now consists of an accumulation of (sub) consciously created expectations that have not been fulfilled, pragmatic behaviour by authorities and unfathomable systems of standards. The Council expects the main port to come under pressure in the short term from current environmental preconditions set by the government. The Council advises that, with a view to the importance of the main port for the economic developments of the Netherlands, Schiphol should be given the opportunity to continue to grow, under (new) preconditions and acknowledging the interests of the surrounding area. Significant elements for new preconditions include:

- alignment to nuisance perception, predictable and transparent;
- measuring noise levels instead of calculating them;
- enforceable and flexible;
- should not undermine the current competitive position;
- source policy over policy on reduction of state dependence;
- creates a legal framework for arrangements with the region.

For the short to medium term the Council makes a large number of recommendations, such as transferring part of aviation to regional airports. This provides a solution to the capacity issue which is expected to occur soon. Also, a study must be held into how airport capacity can be dealt with more selectively. The quieter the aircraft are, the more can aircraft can be used within the limits of aircraft noise. Local residents must be bought out and compensated more generously and on a larger scale. The sector must find out how it can reduce traffic peaks during peak hours without increasing transfer times too much.

For the long term (after 2020), the Council reintroduces the plan for a sea-based airport, with the added note that such a plan should be feasible in terms of technology, economy and the environment. Furthermore, technological modernisation and international policies with regard to aircraft emissions are mentioned.

5.6 Conclusions of the government in respect of the advices

The government received a multitude of advices in respect of the evaluation. These advices were issued by a large number of authorities, covered a wide range of subjects and differed as to depth and level of detail. Some advices could be fitted within the current studies within the framework of the evaluation, e.g. the one into the supplementary questions, the effectiveness survey or the study carried out by the Aircraft Noise Expert Committee. Additional studies were started for other advices, for instance the question posed by the EIA Commission about the maximum environmental effects within the limit values.

The government observes that some advices are similar or follow on from each other. Others are incompatible. This means that choices must be made, no matter what. All advices shall have to be considered during the final decision-making process in respect of the evaluation. To this end we refer to the government position which is expected to be presented in April 2006.



Related subjects

The evaluation of the Schiphol Policy is not isolated. For years, many authorities have been studying residential building around Schiphol and the effects on health for instance. The results thereof are relevant for the considerations to be made by the government in respect of the Schiphol Policy.

6.1 Introduction

The previous chapters extensively discussed the results of the separate sections of the evaluation of the Schiphol Policy. Based on all this data, the government shall have to formulate its position.

However, during the decision-making process, the results of a number of parallel projects also play a role. This chapter shall discuss the developments in the fields of group risk, the Spatial and Building Restrictions around Schiphol Policy Document, sound insulation of residences, regulations for use of Schiphol during the night, health, air quality, "facts and figures about Schiphol" issued by the Environment and Nature Conservation Planning Office (MNP) and finally the Safety Advice Commission Schiphol (VACS).

6.2 Group risk

Group risk is the risk of a group of people on the ground dying as a result of an (airplane) accident. Thus, this risk is determined by the presence of groups of people on the ground and the changes of an aircraft crashing in that location.

Until recently, the Schiphol Act contained a requirement for establishing a standard in 2005 in respect of the group risk around Schiphol. As a result, the group risk was not to exceed that of 1990. This is unrealistic, since many more businesses were built around Schiphol and the amount of air traffic has increased. Therefore, the act was amended in that respect following consultation with the House (the legislative amendment came into effect on 7 December 2005) and it was arranged that the government was to elaborate on alternatives for a group risk policy. These shall be presented to the House in February 2006, and in April the government shall formulate its position on this.

Group risk is already reduced

The group risk policy to be worked out in detail is a supplementary one. After all, group risk is already reduced by virtue of the existing Schiphol Policy. It lays down the restrictions on the use of space around the airport. The government also made arrangements with the region to prevent the construction of new businesses in the vicinity of the area where no businesses can be built. These arrangements were made by Minister Pronk and were not laid down in legislation.

Study into alternatives group risk policy

First it was examined how the group risk is distributed in the area around Schiphol: where are risks high, where are risks low. Then it was examined to what extent any certainty can be given in relation to the distance from Schiphol. Practice has shown that predictions as to risks close to the airport are fairly accurate whereas the further you go the harder it is to predict the location of an accident. The chances of an air crash further away

from the airport are much smaller than those of a crash nearby. Furthermore, the flight paths near the airport (up to approx. 12 kilometres) are fixed and predictable. The flight paths further away from the airport are not fixed and it is therefore difficult to predict where crashes could take place.

It was then examined how the group risk can be controlled with more than just the current policy, by studying a number of alternatives. Those alternatives focus on additional restrictions on the use of space, mainly by increasing the area where no new businesses can be built. The area subject to a building ban on residences is already large; making it even bigger would not affect the development of group risk. A study was carried out into a number of 'expansions' of the area with a ban on new businesses: from a small additional ring (area with a risk exceeding 10^{-7}) to the '20 Ke area' of the Spatial Policy Document. The different alternatives were studied as to their effects on the group risk. A study has shown that a restricted additional area, with a ban on businesses and other functions with many people present, has a big effect on controlling the group risk. Relatively speaking, a larger area such as the Spatial Policy Document area has a much more restrictive effect.

In consultation with regional administrators, the role of the regional administration in controlling the group risk was examined: what is their role in making choices for new developments in the use of space and can they consider the group risk and other interests in their municipalities when doing so?

Because group risk is determined by the combination of aircraft and concentrations of people on the ground, it is also necessary to examine whether the group risk can be reduced by, for instance, moving flight paths so that there are fewer flights over densely-populated areas. That study shall start in the first half of 2006. What is clear is that it is not possible to make choices about where exactly aircraft fly when close to the airport. This has been laid down in full by virtue of international guidelines. Choices as to the regulation of air traffic can possible be made further away from the airport, making it possible to control the group risk.

Finally: because a house or business is not built to last only a short period of time, restrictions on the use of space must apply long-term. For that reason a study is held into how areas with a ban on new residences, businesses or other destinations can be defined in such a manner that they still fit within the policy in five or ten years' time. After all: a small change to the distribution of air traffic across the runways can lead to a change to the restricted areas. That issue too is included in the elaboration of the group risk policy.

The results of the examined alternatives for group risk

can be found in the study report 'Ex ante policy evaluation Group Risk Schiphol'. In its position of April 2006, the government shall indicate what is to be done with the results of this ex ante evaluation.

6.3 Spatial and building restrictions Policy Document

In 2004 the government presented the Spatial Policy Document. In this document the government indicated the wish to absorb the growth of Schiphol airport at the current location until 2030. Due to the anticipated increase of traffic at Schiphol until that time and the corresponding increased use of the current flight paths, the government has decided not to allow any new housing locations in areas subjected to noise levels exceeding 20 Ke or higher. The objective of this space reservation is, like the Schiphol Policy, to prevent new residences from being built in areas subjected to high levels of aircraft noise, thus avoiding the creation of a new group of affected people.

The evaluation of the Schiphol Policy demonstrates that the ban on the construction of new residences is effective: the areas subject to a construction ban saw very few new residences, while the surrounding areas saw a lot of new residences being built. This effect shall also apply to the additional area of the Spatial Policy Document.

When discussing the Spatial Policy Document, the government indicated to decide whether or not to discontinue the construction ban on the basis of the results of the Schiphol Policy evaluation no later than 1 December 2006 and in respect of the following three locations: Hoofddorp-West, Legmeerpolder and Noordwijkerhout. It also indicated that instead of the selected areas, based on a 'Ke radii', restriction can also be based on the new European noise standard, L_{den} . The idea not to develop new extension locations underneath busy flight paths that affect many people on the ground is not a controversial one. It creates a clear relation between the environmental effects linked to flying and the restrictions on the use of space.

A further study into the restriction on the area to be subject to the restrictions is desirable. It shall study up to what level of aircraft noise the people on the ground are affected. It shall also study the possibility of defining the restricted areas in such a way that they can remain unaltered for longer periods of time, even if the use of the airport was to be changed. The question as to who is responsible for the restrictions on the use of space shall also be discussed.

The evaluation has shown that many local residents and municipalities regard the construction ban around Schiphol as unnecessarily restrictive. These parties pose the question whether a proper provision of information would not be better than a construction ban.

There is a definite need for proper information about the existing and future effects. The proposals for

improvement indicate the wish for the municipality or project developer to provide information when new residences are built.

6.4 Sound insulation of residences

The policy for sound insulation of residences around Schiphol is not part of the evaluation of the Schiphol Policy. Since a number of proposals for improvement relate to sound insulation, we shall now discuss the state of affairs in respect of sound insulation and the role of the proposals for improvement in the sound insulation policy.

Since the early nineties, approximately 12,000 homes have been insulated in two stages (GIS-1 and GIS-2). The insulation is fitted in accordance with the Sound-Proofing Provisions Regulation. During the final phase of GIS-2, which is currently underway, a number of improvements were made on the basis of the findings from the activities during the previous years. These relate to, among other things, the invitation to tender (fewer houses per invitation to tender) and abandoning practical rules that are too stringent. This has led to a reduction of costs, accelerated execution and increased satisfaction among the residents of the houses to be insulated.

A third stage (GIS-3) shall start soon, because the insulation area has changed as a result of the change in traffic distribution, and with that the distribution of noise levels across the area. For this next sound insulation stage it is examined whether flexibility for local residents can be improved. Experiences and proposals presented in the Schiphol Policy evaluation shall be included in this.

The improvement proposals for sound insulation can be subdivided into three categories. The first one concerns the scope of the insulation policy, the second concerns compensating any damage suffered and charging on the burden, while the third category concerns organisational improvements in respect of the execution of the insulation programme.

Scope of the insulation policy

The scope of the insulation policy refers to offering the residents more options and the possibility of additional insulation. Additional insulation was already available during GIS-2. It is also included in GIS-3, as is the increasing number of options for the resident (e.g. returning leaded windows).

Compensation

This relates to compensation for damage suffered, a fund for investments in general provisions, a house move facility and finally an enforcement system: the polluter pays. If it concerns loss resulting from government (planning) decisions, the possibilities offered by the Schiphol Airport Damages Board can be relied upon. However, this arrangement offers no consolation for

municipalities who feel restricted by Schiphol in their possibilities as to development. In respect of the long-term sound insulation policy (following GIS-3) it shall be examined which forms of compensation are desirable and feasible.

Organisational improvements

The proposal for clear points of contact for local residents during an insulation project is given an organisational solution during GIS-3. The proposal to what extent the responsibilities of various authorities can be arranged better in the event of relocation: this subject shall also be dealt with during the future stage of the sound insulation programme (following GIS-3).

6.5 Regulations for the Schiphol night time regimen

In 1998 a study was started as to what the consequences of a potential extension of the 'night time regimen' (from 23 - 6 o'clock to 23 - 7 o'clock) would be for health and the main port function. The night time regimen is taken to mean the regulations and measures which allow for restricted use of the airport during the night. One example of a regulation is closing off part of the runways. The study into health-related effects was carried out as part of the Schiphol Health Evaluation (GES), a comprehensive multi-year survey programme. In 2002 the final report "Sleep disturbance caused by aircraft noise" was published, and in 2004 the Health Council of the Netherlands issued its advice on the effects of noise on sleep and health. The government position on the night time regimen was presented to the Lower House in 2005. The position demonstrated that extending the night time regimen from 23 - 6 o'clock to 23 - 7 o'clock could result in an 18 per cent drop of the number of those suffering from sleep disturbance. According to the TNO study, the losses for aviation would amount to approximately ten million euros per year. The aviation sector expects these losses to be much higher. The government has taken the position of not wanting to extend the night time regimen, but may supplement the current policy:

- extension of the night time regimen by the aviation sector on a voluntary basis, as long as it does not jeopardise the airport's capacity;
- promoting the use of low-noise approach methods;
- improving the provision of information to local residents;
- barring noisy aircraft during the night.

The perception survey carried out within the framework of the effectiveness survey indicated that the time at which noise is heard is an important factor for the level of nuisance that is experienced. For example, nuisance caused by aircraft noise is often reported to take place between 6 and 7 o'clock in the morning. If during this period air traffic would fly according to the night time regimen, it could further reduce the total number of people affected. The downside is that residents who are already exposed to relatively high levels of night time

aircraft noise shall be subject to even higher levels due to this measure. Extending the night time regimen mainly also means moving traffic from one runway to another, not a reduction in the amount of traffic.

The study carried out into the effects of the submitted improvement proposals also demonstrates that noise pollution would perceptibly decrease if the night time regimen were to be extended until 7 o'clock. However, the consequences for the main port, possibly in combination with bringing the night time regimen forward, could be negative. In addition, efficient and safe procedures are required in order to make extension of the night time regimen practically feasible for air traffic control.

In its position of April 2006, the government shall discuss these study results in the light of its earlier position on the night time regimen.

6.6 Health

Exposure to aircraft noise affects the health of those living near an airport. Within the framework of the Schiphol Health Evaluation (GES) an extensive study was carried out into the negative consequences of the presence of Schiphol airport. In 2004, the Health Council of the Netherlands studied the influence of noise on sleep and health. Not everyone reacts to noise in the same manner. Potentially dangerous noise levels may be tolerable for one person, while they affect the health and wellbeing of other people. The attitude that people have towards the source of the noise can enhance the negative consequences. There is sufficient proof that nightly noise can lead to biological reactions. It has also been satisfactorily proven that nightly noise can adversely influence the quality of sleep and general wellbeing. Adverse effects on social contacts, on carrying out daytime tasks that require concentration, on certain disorders and on the loss of years of life have only been partially proven, but they are possible according to the Health Council of the Netherlands. It is also clear that the more noisy occurrences per night, the greater the chances of increased sleep disturbance.

For the evaluation, RIVM and RIGO bundled their knowledge about the aspects that play a role in the creation of nuisance caused by aircraft noise and the perception of risks. Furthermore, a new questionnaire and panel survey were carried out, which are discussed in chapter 3 of this final report. RIVM shall publish the final report of the GES programme soon. The government position of April 2006 shall discuss how the government wants to continue the study into the health effects of aircraft noise.

6.7 Air quality

The European standards for air quality have been implemented in the air quality Decree 2005. This decree lays down the limit values for the open air concentrations

of sulphur dioxide (SO₂), air particles (PM10), nitrogen dioxide (NO₂), carbon monoxide (CO), lead and benzene. Particularly in the case of air particles, there is the added note that the concentrations can be corrected in respect of the contribution from natural sources such as sea salt.

If a limit value is exceeded or is in danger of being exceeded locally, it is important for the authorities to know that air quality does not further deteriorate as a result of the enforcement of authorities (e.g. making a decision). If this is the case, air quality shall have to at least remain the same on balance by means of measures taken elsewhere. Emission ceilings (prescribed on a European basis), subdivided in the Netherlands into emission objectives per sector, apply in addition to the air quality Decree. There is no separate objective for aviation. On an ICAO basis, standards are attached to aircraft engines, but they are not tight enough to have a stimulating effect on innovations.

The Airport Traffic Decree (LVB) lays down limit values for Schiphol in respect of the emission of five of the air polluting substances mentioned in the air quality Decree: CO, NO₂, VOS, PM10 and SO₂. Less emission of one of these substances often leads to increased emissions of the other and vice versa. Noise reduction or fuel-economic flying also has an effect on emissions. This is different for each substance. This means that, with the current state of the art, it is not realistic to demand that aircraft become quieter and that there are fewer emissions of each substance. Furthermore, the emission of aircraft is primarily determined by international agreements. The Schiphol Policy has no effect on the quantity of aircraft emissions on Schiphol.

The LVB takes into account the effects among air polluting substances by building margins into the limit values. At the request of the Lower House, this margin was included in the LVB, after the Meijer motion et al was adopted on 4 July 2002 when the two drafts of the Airport Decrees part of the Schiphol Act were discussed by the Lower House. This motion requests an exchange between the different air polluting substances, a form of balancing.

The Meijer motion et al has not been carried out to the letter, because balancing could create a precedent for other situations in the Netherlands. In connection with that and on the basis of the new draft of the air quality Decree 2005, the Council of State indicated in June 2005 that it regards balancing between substances (making it possible to balance deterioration in the concentration of one substance against an improvement of the concentration of another substance) principally wrong.

In order to satisfy the Meijer motion et al and in order to attach realistic requirements on aviation, various scenarios have been worked out for the anticipated variation of the aviation fleet. Flexibility, deemed necessary on the basis of this variation of the aircraft fleet, has been built into the limit values for air polluting substances. This gives the

aviation sector an incentive to use quieter aircraft and to use cleaner aircraft for at least some of the substances.

The question now is whether the margin offered by the LVB in respect of various substances is not too big or too small and whether the limit values must be adjusted. The IVW Enforcement report 2005 shows that the limit values in the LVB are different for each substance. There are small excesses in respect of CO and VOS, but there still is some room for NO_x and air particles (PM10). The table below illustrates this.

Reported emissions realised in the operating year 2005 (Limit value LVB = 100)

CO	NO _x	VOS	SO ₂	PM10
102	90	102	95	88

In April 2006, the government shall take up its position with regard to any adjustment of the limit values on the basis of this practical experience.

6.8 MNP facts and figures on Schiphol

In August 2005, the Environment and Nature Conservation Planning Office issued a report titled 'The Environment around Schiphol, 1990-2010, fact & figures'. The report forms a valuable addition to the study carried out as part of the evaluation of the Schiphol Policy and shall be used for the government position of April 2006. The MNP report draws the following picture.

- Since 1990, the total number of people disturbed by noise pollution as a result of air traffic at Schiphol has fallen by approximately 40 per cent. The reduction is not equal and local throughout, e.g., following the commissioning of the Polderbaan runway an increase may be seen near new air traffic routes. In 1990, an estimated 550,000 people experienced serious noise pollution and approximately 240,000 people serious sleep disturbance. The noise standards currently limit the scope of noise pollution to approximately 330,000 people experiencing serious noise pollution and 140,000 people experiencing serious sleep disturbance. These figures are a fair reflection of the findings in the evaluation.
- The vast majority of the noise pollution (97 per cent) and sleep disturbance (99-98 per cent) take place outside the area where noise level criteria are actively enforced. The MNP emphasises that further away too there should be a better coordination between air traffic and ground operations. This could lead to an important improvement in the environmental situation. The MNP identifies important differences in the manner in which the Noise Pollution Act and Aviation Act regulate noise levels. The MNP prepared a mutual comparison of the different standards which apply to road traffic, rail traffic and aviation. Air traffic (at equal levels of exposure to noise) is experienced as a greater nuisance compared to noise caused by road traffic and a considerably greater nuisance compared

to noise caused by rail traffic. Taking this into account, the establishment of common standards for noise pollution caused by aviation appears in every respect to be more flexible compared to the establishment of common standards for noise caused by road traffic. Living and working around Schiphol is growing considerably which contributes to the scope of the noise pollution and the increase in group risk. The reduction in noise pollution achieved so far, can mainly be attributed to the environmental gain booked as a result of the introduction of new flight technologies and changes in air traffic routes (operational measures), whereas the construction of the Polderbaan runway only accounts for 5 per cent in that respect. In terms of risks the situation is different. Here the Polderbaan runway has led to an important improvement as the risks caused by the airport are kept much closer within the vicinity of the airport. Further distribution of air traffic causes an increase in noise pollution. Further distribution of air traffic leads to less situations with relatively high noise levels, but on balance it leads to an increase in noise pollution in the entire region. Therefore, a policy aimed at distribution does not contribute to a reduction in noise pollution and sleep disturbance. In addition, the distribution of air traffic offers fewer possibilities for a proper future spatial planning policy.

- Further expansion of Schiphol does not lead to an improved living environment. The MNP study demonstrates that the historically great importance of the international policy (barring noisy aircraft) has practically disappeared. Global aviation treaties have a potentially negative effect on fleet improvements.

6.9 Safety Advice Commission Schiphol

In the recent past (2002, 2004 and 2005) the safety Advice Committee Schiphol (VACS) advised on the manner in which the safety policy surrounding Schiphol can be further improved.

The main theme in the recommendations made by VACS is a process-based improvement of the many issues which play a role in the safety policy. Important themes within the advices of the VACS include stimulating the cooperation between the various parties (sector and government) so that lessons can be drawn from each other's experiences, enhancing the Schiphol safety platform, carrying out more proactive risk analyses, promoting risk-based inspections, chain safety analyses, care for emergency relief and guaranteeing the quality thereof.

Ideas have been exchanged with VACS as to how running initiatives in this field can be further enhanced and how new ideas can be implemented. Within this context reference is made to the letter of 8 November 2005 from the State Secretary of Transport, Public Work and Water Management to the Lower House (Lower House, session year 2005-2006, 24 804, no. 36) detailing a response following the report 'Safety Study Schiphol' by the VACS.

Proposals for improvement which relate to improving the safety situation shall be assessed against the background of these VACS advices.

7 Process Committee for the Evaluation of the Schiphol Policy

The Ministries of Transport, Public Works and Water Management / Housing, Spatial Planning and the Environment carry out the evaluation, whereas the new Schiphol Policy was prepared in the same departments. Therefore, are the results objective and independent? This was the question the Process Committee for the Evaluation of the Schiphol Policy had to answer. The committee's final assessment shall be published at the end of February 2006.

7.1 Introduction

A Process Committee has been formed in order to monitor the independence and objectivity of the evaluation of the Schiphol Policy. This Process Committee for the evaluation of the Schiphol Policy served as a contact point for the parties involved. In addition, the Committee was asked for its advice on the assessment framework for assessing the improvement proposals.

7.2 Advices

During the evaluation, the Process Committee issued seven recommendations. The committee's final assessment of the evaluation is anticipated to take place at the end of February 2006. During the assessment of the evaluation process, the Process Committee considered the following questions:

- did the evaluation follow a careful process?
- have the various interests been taken into account sufficiently?
- are the expectations on the evaluations not exaggerated?
- have the improvement proposals been examined and considered objectively?
- is the evaluation sufficiently future-oriented?
- have potential pitfalls been taken into account sufficiently?

The appendices detail an overview of the recommendations made by the Committee which were received in the period up to January 2006.

8 Conclusions

In this chapter, based on the evaluation, the government draws the following conclusions.



This chapter lists the conclusions of the government regarding the evaluations on the basis of the study, the advices, the improvement proposals and the experiences the government gained with the Schiphol Policy.

- Based on the results of the equivalence test, the government concludes that the Schiphol Act and the corresponding Airport Decrees meet the equivalence requirements as stipulated in the intermediary articles of the legislation. The intended improvement of the environmental situation has, on the whole, been achieved. That test, therefore, does not give rise to an adjustment of the policy.
- During communications the emphasis has often been on the overall improvement of the environmental situation, whereas little attention has been paid to local deterioration. Relatively little attention has also been paid to the effects further away from the airport, whilst the vast majority of those affected live in that region. The government sees reason to improve these matters.
- The government concludes that during the past years the Schiphol Policy has not affected aviation development. However, within a number of years the effects may be felt, as aviation shall then be restricted in its growth due to the environmental limits set out in the policy. As a result, prosperity is set to rise less (a so called 'loss in prosperity'). The question is whether Schiphol Airport can develop further with the selected instruments in the future.
- Part of the room for growth cannot be exploited by aviation as the market is developing differently than previously anticipated. The developments in aviation are hard to predict.
The question is whether aviation within the current regulations and limit values can create additional room for growth, for example by pursuing a policy aimed at quieter, safer and cleaner air traffic, quiet flight procedures or less or quieter flights at night.
- With regard to nuisance: nuisance is reduced as a result of the Schiphol Policy, but not much. Certain sections leave room for improvement, e.g. by creating a better alignment to the perception and change in flight paths and procedures. Here the predictability of air traffic (when, where and why) plays a significant role. Also, some of the rules are not effective.
- Furthermore, the question is whether current regulations and limit values do minimize nuisance where possible. This certainly does not seem the case further away from the airport.
- There are a lot of proposals to improve the positioning of the flight paths and flight procedures. A large part thereof does lead to a reduction in nuisance, however, in many cases also to a shift in nuisance and/or a reduction in air traffic capacity. That means that any changes must be considered carefully and that in certain cases it can be useful to first test the changes prior to permanently amending the regulations. Furthermore, the issue of concentrating or correctly distributing nuisance comes to the fore.
- Clarity and a long-term perspective by the government regarding the future and restrictions on the use of space surrounding the airport is of high importance to local residents, the municipalities and businesses as well as to Schiphol, the airline companies and air traffic control.
- The question is what types of air traffic (freight, leisure etc.) and destinations are of importance to the quality of the main port and whether regional airports can play a bigger role.
- Clarity regarding the roles and responsibilities of those involved is of high importance. These have been recorded in the legislation, however, practice shows that it is not always clear as to who is responsible for what. This is also in line with the issue whether the government has a role in directing further development of aviation, and if so, which one.

- In the region there is a need to exert a greater degree of influence on the distribution of air traffic across the surroundings. Schiphol too indicates that it would like to have more room in order to enter into agreements with the surroundings. However, the surroundings of the airport are partly subjected to a conflict of interest. The municipalities indicate that they want more freedom in spatial planning.

In April 2006, in its position on Schiphol, the government shall discuss the conclusions of the evaluation. Within its position, the government shall consider these conclusions in conjunction with the results of the evaluation of the group risk policy and the results of the main port project.

Colophon

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