Breeding Plan for the Fjord Horse

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1 Introduction

In Norway the organized breeding of horses is based on tradition. The quality of the horse in Norway today, is largely due to an interest in breeding and the methods of selection.

The horse being recognized as an agricultural animal, with the ensuing interest and Government support, has been of great importance. The system of mountain grazing in which an approved stallion runs with mares has also been popular (hesteavlsseter). This system is now subsidized by the Norwegian Horse Society (NHS).

In recent years more emphasis has been placed on breeding performance horses so this means that the focus has slightly changed.

The Norwegian Horse Society is responsible for preparing breeding plans for all breeds and types of horses where organized breeding is practiced. The breeding plans are meant as a guide to future breeding, for breeders and for judges in their selection of potential animals for breeding.

The Norwegian Horse Society with Prof Odd Vangen, breeding advisor Tore Kvam, and their team of advisors ,have in co-operation with the different Breed Societies prepared a breeding plan for each breed society.

The Norwegian Trotting Association (DNT) with Prof Nils Ivar Dolvik and Gunnar Klemmetsdal, have been responsible for their original plan.

All plans are approved by the Norwegian Horse Society Board.

2 Horse breeding in Norway

The aim of breeding is to reach for a genetic improvement of the various characteristics within a breed and the overall objective of the breed.

An important element is to consider the diversity within a breed and its limitations which can be internal or external.

International as well as national factors play their part. The aims within the industry itself will also be influenced by market economy, rules and regulations.

The species itself will also have its own biological limitations such as fertility which limits the ultimate effectiveness of a breeding plan. It will be necessary therefore to consider the results of planned breeding and what side effects can be expected.

2.1 The equine population of Norway

The equine population of Norway has increased greatly and is now about 120000.Today the use of the horse in agriculture is reduced to a minimum. The horse is used in a very small way in forestry.

The Tote (Totalisator) betting is confined to 10 tracks for trotting and one for racing (flat ,hurdle and steeplechase).The totalisator has been in existence since 1928 and has been a great incentive to breeders. The trotting population is comprised of the native Cold- blooded trotter (derived from the native Dølahest) and the Standard bred .

Interest in riding – dressage, show jumping, eventing, long distance riding and driving is wide spread.

The pony breeds and the Norwegian native breeds cover the need for smaller horses for children and adults alike.

2.2 Breeding Stock

The number of animals used for breeding, within a breed, can limit a possible development.

In using newer methods of selection in small populations one must be aware of inbreeding. In small populations breeding policies must often be confined to attempts to counteract inbreeding. The animals used in breeding are spread out all over the country so serious breeding policies can be difficult to carry out. The breeding structure is such that it is not possible to invest in the industry. To be well supported ventures and breeding must be economically and practically viable.

The breeding of the three native breeds *is special as they are limited by a rather small genetic pool. The possibility to import is minimal. The NHS has a special responsibility towards these breeds as they represent a living inheritance. Norway is responsible for the breeding, development and maintenance of these breeds. This means that breeding policies must be carried out in a reasonable way. Breeds that have international origins follow international standards and on the whole do not have the same problems of inbreeding. All breed societies in Norway must be officially recognized by the Ministry of Agriculture, through (mattilsynet) Ministry for Food.

* Dølahest- literally valley horse, small draught horse from Gudbrandsdalen, east Norway.

  Fjordhest- Fjord Horse, originally from the west of Norway.

  Nordlandshest / Lyngshest –versatile little horse (pony) from the far north of Norway.

2.3 Economy

The NHS is responsible for the development and implementation of breeding policies in Norway. The Norwegian Horse Society is a foundation which is owned and worked in collaboration with the different breed and sports societies.

NHS has a breeding advisor who is part of an administration which works for the improvement and development of the horse in Norway .The advisory group advises the board on professional matters.

The NHS is responsible for all the official Horse Shows (assessments).Traditionally the Ministry of Agriculture has been closely involved in horse breeding. As early as 1696 there was an attempt to license stallions. From 1869 rules for shows and breed descriptions were introduced. An act of Parliament in 1939 decreed that stallions must be licensed. Through various periods of change this rule has been maintained. All stallions regardless of breed or trend must be licensed for breeding.

NHS is also responsible and helps arrange, shows for mares and young stock .These shows are very much a tradition in many parts of the country.

Another important tradition in Norwegian horse breeding is the mountain farm system *where by an approved stallion runs with mares on areas, in the mountains, administered by NHS. This system is heavily subsidized.* hesteavlsseter

The NHS receives annually a substantial grant from the Government which covers all matters pertaining to breeding, the office staff, the mountain farm system, financial support to the breed societies as well as publishing studbooks for the Norwegian Native Breeds.

2.4 Progress and co-operation.

The NHS is the control authority on breeding matters and also plays an important part in the handling and co-ordination of information on these matters. Close contact with the seats of learning for Animal Husbandry and Veterinary Medicine is important and of mutual benefit. Current evaluation of the breeding plans in relation to research and practical experience is also part of their work. Good working relations with the different breed societies as well as with the sport itself (trotting, riding and, driving) is of utmost importance.

Professional standards of all involved in the industry (Judges & breeders etc) will be raised. To this end NHS helps with information and courses.

3 General breeding goals.

The NHS `s responsibility and aim is to breed horses which are suitable for future horse owners and which serve their purpose in the best possible way.

Breeding plans for the native breeds are of very special interest. Breeding otherwise is stimulated with the aim of reducing import.

The horse of today is used in many different fields (and for some breeds new fields) and must be a very versatile animal with a wide range of activity, suitable for sport, recreation as well as riding for the disabled.

An important aspect of the breeding plans will be an attempt to analyze the characteristics of a breed in relation to the area in which it is used. For many breeds too much emphasis on the horses' ability to perform can lead to loss of breed type. For these breeds it is of utmost importance to retain breed type.

The establishing of breed plans makes it more possible to guide breeding so that short term results will not dominate.

Health, temperament, soundness and fertility are important values within a breed. Problems arising from inbreeding must be avoided. The result should be to serve future horse-owners, with a sound horse and with reduced veterinary expenses. The ethical part of breeding must not be forgotten .An important aspect is a common responsibility and long-term planning , divided between the NHS and the breed societies,.

The native breeds have little or no possibility of bringing in new blood. Breeders of international breeds can always import good animals for breeding or use AI, and their aim must be to improve the breeding and use of these animals (sports horse, Icelandic horses and the different pony breeds.) The aims of the native breeds contra the international breeds will not be exactly the same. The long term responsibility towards our native breeds is significant. Even so these breeds must be able to compete with other breeds in many fields.

The international breeds must aim at producing a horse which can compete internationally. This will make export possible .Progress will be dependant on the import of good animals for breeding also by the use of AI.

We must all work together to achieve our goals! This will benefit the whole industry.

It is here that the breeding plans can lead to a structured breeding of horses.

The breeding plans are all written and laid out in a similar fashion. This simplifies study of the breeding plans. The plans are open for amendment.

4 Fjord Horse Breeding

4.1 The Fjord Horse – a Historical Background

4.1.1 The beginning of Fjord Horse Breeding

There have been fjords in Norway since times immemorial but it was between 1840 - 1850 that organized breeding was first implemented. In 1843 it was decided that a stud should be established at Hjerkinn in the Dovre Mountains, at an altitude of some 1000 meters. The aim was to improve the quality of the horse in Norway and breed animals that were suitable for the times. At that time the Fjord was an all purpose animal used on the farm ,in the winter for logging ,harvesting in the summer as a pack horse on the mountain farm as well as driving to church .The fjord was also used extensively for the conveyance of passengers ,as a post horse and as a tradesmen's horse.

One stallion and 6 mares "of the original Norwegian breed ", the fjord horse, were bought for the stud at Hjerkinn. At that time one had no knowledge of how colours were inherited and ulsdun was the most popular colour at that time. Between 1857 and 1879 48% of the registered stallions and 46 % of the registered mares were ulsdun. All the stallions purchased for this project were of this colour and of the 32 foals born during the 9 years the stud existed, 15 were white and walleyed. The stud was disbanded because of this as well as the stud being poorly run and the horses not well looked after. Instead it was decided that the Government would purchase stallions that breeders could use. The government agronomist Lindeqvist could not find any fjords that he saw "suitable for improving the breed "so the powers that be opened the door for cross breeding.

The first show in the West of Norway (Vestlandet) was held at Førde I 1864. Up to 1875 there were annual shows alternating between the counties of Møre and Romsdal, Sogn and Fjordane and Hordaland , after which two annual shows were held including the county of Rogaland . From 1895 there were annual shows in each of the four counties of the West. In 1875 the Government began buying purebred Fjords which were placed in various districts for breeding.The counties in the West began buying stallions in the 1870- 1880s. Similar to the Government stallions these were placed in various districts and stationed at different places. The last state owned stallion in the west was in 1937. In 1937 in Rogaland the same thing happened. The other counties in the west had discontinued this practice some years previously.

Njål 166 is the foundation sire of all the most important stallion lines throughout the world. He was the county stallion in Sogn and Fjordane between 1896 and 1910.

Breeders saw the unfortunate results of cross breeding which led to a veritable war which culminated in a meeting in 1907 at Innvik in Nordfjord. There were diverging points of view but in the end it was agreed that only pure breeding of the Fjord should be permitted. This conflict has since been known as the Rimfaksstriden (Rimfaks conflict) after the crossbred stallion of this name Rimfakse146.

4.1.2 The Stud Book

The first stud book for the Fjord Horse (at that time known as the Vestlandshest – the West country horse) was instigated by det Kongelige Selskap for Norges Vel . (The Royal Society for the Good of Norway) and published in 1910. The Stud Book includes 308 stallions foaled between 1857 and 1904. The Government Stud Book Office, under the Ministry of Agriculture, was founded in 1918 and was responsible for the Stud Book. Up to 1989 the stud book was an "elite" stud book where only animals that were licensed for breeding or had been given a premium, were entered. The Stud Book is now a register of all eligible fjords, those which are licensed, those with premiums and all the forebears of registered fjords.

4.1.3 Official Advisors

At the end of the 19th century Government advisors responsible for animal husbandry, were appointed in the different districts. Vestlandet was divided into two districts, the advisor being responsible for all livestock breeding. In 1922 the vet Jens Nordang was appointed as Government Advisor for the Fjord Horse. Breeding then became more organized and new measures were introduced. In due time the system of State owned stallions was fazed out and financial aid was instead given to local breed societies. Up to 1967 there was a special advisor for the Fjords. After this one Statskunsulent /, Government Advisor, was appointed for all breeds. From 1993 the leader of breeding (avlsleder) at the Norwegian Horse Society, has taken over many of the breeding advisor's (Statskonsulenten) duties.

4.1.4 The Norwegian Horse Society (Norsk Hestesenter)

In 1987 the Norwegian Horse Society (NHS) was established as a foundation comprised of the Norwegian equine organizations. The Society is authorized by the Ministry of Agriculture to be responsible for matters pertaining to horse breeding as well as registration, stud book keeping and shows.

4.1.5 Public breeding regulations

Before 1941 all stallions could be used in breeding. In 1941 a public ruling "law on licensing of breeding stallions" (*kåringsloven*)was introduced. After this date it was forbidden to use other stallions than those which were formally approved, though it was still permissible to use an unlicensed stallion on the owners own mare. Though there were minor adjustments over the years this law was in action until 1995 when it was substituted by a regulation - "Regulation about approved (purebred) equines", which is an agreement within the EU. From 2002 it is not permitted to use unlicensed stallions in Fjord Horse Breeding.

4.1.6 Breed Plans

In 1995 breeding plans for the Fjord Horse and several other breeds were presented. A breeding plan forms a foundation as to how breeding of a specific breed is to be carried out. The main goal of fjord horse breeding is as such - “the aim of the Fjord Horse Society is through pure breeding to maintain its breed type and versatility and further to breed a healthy and functional horse. For the Fjord Horse this means a long term breeding process based on the characteristics of the breed. The Breeding plan shall serve as a useful document, to assist all those involved in the breed and which will lead to a long term administration of the population“

According to the European Domestic Animal Convention and resolution in the EU commission, Norway is recognized as the country of origin and mother country of the breed and is thereby responsible for the breed and its character.

4.1.7 Breeders groups and organizations

The first local breeders’ organizations were founded in the late 1890s. Before that there were private “interest groups“ which stood stallions. Local organizations could be made up of local farmers clubs or wider districts many of which later amalgamated to strengthen the economy. The aim was to stand quality stallions. I 1943 there were 130 local groups encompassing 165 stallions. Many of the groups had more than one stallion. The largest group, Jæren had as many as 11 stallions. During breeding advisor Nordangs time, grants were given to the organizations, for the purchase and keep of approved stallions. The need arose to strengthen the local organizations giving them more validity and strength in relation to the authorities. Smaller groups amalgamated and formed district and or county organizations. The first was Nordfjord Fjordhestlag, founded in 1919. The others were founded in the 1930s and 40s. Later on Norges Fjordhestlag (NFL)was founded in 1949.

(*At the time of writing there are about 50 local groups under Norgesfjordhestlag S.H*). Some of these do not stand stallions and concentrate more on activities for their members. Anyone can now become a member of NFL but it is only county or district groups that may send representatives to the annual general meeting. NFL decided to form an international Fjord Horse group so Fjord Horse International was founded in 1997.

4.1.8 The show system

(The showing system in Norway has always been a means of selecting breeding animals and not a show in the usual sense SH)

In the beginning shows were open for mares and stallions and the horses were judged in order of merit 1st 2nd etc. Later another form for awarding premiums was used. The individual was awarded 1st, 2^{nd,} 3 rd prize, commended or licensed. Young stock, 1-2 year old colts and 1-3 year old fillies could usually be shown in the spring. Yearlings were shown in “unofficial“ classes. This system was used up to 2007. Mares were divided into classes as to age, whether they were barren, were in foal or had a foal at foot.

The stallion shows had separate classes for 3 year olds , for 4 and 5 year olds and for 6 year olds and over.3 year olds were licensed for I year .To keep their license they had to complete a station test and be shown again as 4 year olds . Previously they had taken the station test at the age of 5. From 2009 the test was altered. Young stocks were assessed in relation to the breeding plans. From 2008 the showing system was altered so there is now a system which gives premiums to the individual and in another class for breeding results /progeny. See appendix showing system and tests (*the station tests as from 2014 are now changed in their present form SH)*

4.1.9 Organizations and their mandate

NFL has been the main organization in Norway for the Fjord Horse since 1949. NFL is today recognized through the Rio Convention for Bio diversity, as the country of origin and is thus responsible for the Fjord Horse and its development in Norway, in the Common Market and in adjacent countries with economical agreements.

Through the years the Fjord horse has been exported to many countries where they have been bred extensively. As a result NFL took the initiative to establish an international breeders organization for all countries interested in Fjord Horse Breeding. Fjord Horse International was founded in 1997 as company but in 2001 this was changed to an organization with membership. This is FHI.

4.2 Origin of the Breed

The Fjord Horse is one of the oldest and purest breeds in the world. The West of Norway (Vestlandet) has been the centre of breeding and that is the reason why the breed has also been known as the Vestlandshest. It is a matter of conjecture as to the origin of the breed. He is quite similar to the only surviving wild horse the Przewalski from central Asia. He shares the dun colour, the primitive markings such as zebra stripes, markings on the limbs, the neck, withers as well as the dorsal stripe (list), through the mane and along the back as the name implies. The Fjord Horse is also similar to the European Wild Horse –the Tarpan of which there are few remaining. It is clear that the Fjord is not descended from the Przewalski with 66 chromosomes. The Fjord shares the same number of chromosomes, 64 with the Tarpan and other equine breeds.

There have been many archeological finds from the early Bronze Age. It appears that the horse was domesticated in Bronze Age Norway about 1200 BC.

Through the excavation of Viking burial sites, finds indicate that the horse has been bred in Norway for over 2000 years and that the Fjord is descended from the original horses in Norway. As a seafaring nation there has been a great deal of traffic through time, to the British Isles and to Iceland which means that horses from these areas have been part of the development of the Fjord.

In the northern and southern areas of the West, it appears that the Fjord has varied somewhat in breed type and size. I Sunnhordaland the horse was smaller, lighter in build and type, whilst the Fjord in Nordfjord and Sunnmøre was recognised as being larger of frame and with more prolific hair growth. The origin of the different types has been discussed and it is felt that the different types are due to a slight variation in the breeding stock found in the said districts.

Rosendalsborken 18, foaled in Kvinnherad in 1863, appears have been of the lighter type. He was shown in Germany, as a 20 year old and commanded a great deal of attention.

The most prominent stallion in the breed`s history is Njål 166, foaled in Stryn in 1891. Njål was an approved county stallion in Sogn og Fjordane and was stationed at Sunde in Stryn from 1896 to his death in 1910. Njål is to be found in all present Fjordhorse pedigrees, throughout the world.

Due to the fact that the Fjord was and is hardy, surefooted, easy to feed and full of stamina, he was very suitable for work on the small ,hilly farms before mechanization. He was also used extensively to convey passengers around the country.

It is thanks to the farmers in the west and their special interest in the breed that the Fjord horse has maintained breed type right up to the present day. The Fjord with his great charm, good temperament and versatility means that he is highly appreciated even today. Many people see the Fjord horse as a Norwegian National symbol.

4.3 Fjordhorse breeding today and in the future

4.3.1 National and International responsibility. Our inheritance, tradition and a new era

As the country of origin Norway has a special responsibility towards the breed. It has been decided through the Rio Convention on Bio diversity and through the EU commission, that the Fjordhorse is a part of our Norwegian Heritage. It is especially important that traditions be maintained but that the Fjord should also be a horse of his time. In the late 1800 s the expression " head like a brisling, neck like a spinning wheel, body like a turnip and limbs as steel springs " used to describe a typical Fjord horse. The conformation of the Fjord of today has evolved in step with the times though breed type and presence is maintained. This is largely due to the selection, training and feeding deemed necessary to produce a more athletic horse. The demands we place on the Fjord have changed with the times and the changes of society at large. The breed is adaptable and is now to be found all over the world.

The last years have shown a considerable reduction in Fjord Horse breeding. During the last decade the number of mares covered has almost halved. The number of breeding stallions is also reduced. This has led to a reduction of animals evaluated and shown. To maintain the standard and numbers of animals bred and shown special action must be taken.

4.3.2 The chief responsibility – maintain breed type, character and variety

In breeding the Fjord, breed type and character must be more important than other qualities. The Fjord can vary in height and structure which may be looked on as an advantage knowing the different uses he is put to. The studbook register demands 5 known generations in the pedigree, of pure-bred registered Fjords. These rules were introduced in 2008.

4.3.3 Different demands over the years

What is looked for in the Fjord Horse has changed over the years and with that a need to find out which characteristics in breeding should be given priority. The drive and packhorse type of the 19th century was considered too small and light to fill the demands of what was needed in farming at that time. A heavier draught horse type was required. This was one of the views forwarded when cross-breeding was introduced. When pure-breeding was reinstated the aim was still to breed a draught horse type. The aim was followed through when a breeding consultant for the Fjord was appointed in 1922.This policy was followed until the 1960s when the machine gradually replaced the horse. There was a desire to develop a lighter and more athletic horse .These demands are strengthened as the use of the Fjord has gradually changed to an animal suitable for riding and driving. Through time the aim has always been to breed an animal with a functional conformation. At the present time there is a need for a supple horse with a good temperament easy to ride and drive, which is sure footed and equally at home in the ménage as on the mountain. The fjord is a good riding school animal and is also used in competitions.

4.3.4 Breeding, rearing and economy

There have been many capable breeders and stockmen in Fjord Horse breeding. In these difficult times with breeding at a low, it is so important that breeders are enthusiastic, knowledgeable and aware of what is needed. With so few horses bred it is more important than ever to maintain a high standard of breeding stock. To this end it is all important to select the right combinations which may produce the type of horse desired. The standing of stallions in various districts has been an all important aspect of Fjord breeding but there is an increasing number of privately owned stallions. Many districts have had economical problems combined with the difficulty of finding suitable people and places to stand a stallion. It is all important that local Fjord Horse groups encourage breeding and use of the Fjord. A.I has been organized by Norges Fjordhestlag. The use of A.I must be well planned and must not be a threat to the use of stallions owned by the interest groups. (*It is these groups that have been the backbone of Fjord Horse breeding - it is their enthusiasm that has kept breeding going in difficult times) translators note.*

4.3.5 Problems of inbreeding

In 1967 a limited investigation on the rate of inbreeding in the Fjord Horse population was carried out. (See the Norwegian Breeds Studbook of 1967) In 1910 the average inbreeding coefficient in the breed was calculated to be 0.010, in 1930 to 0.047 and in 1957 to 0.0077.

A more extensive investigation was carried out in2009 in a master paper at the University for Environment and Bioscience at Ås. Here is a summary of the thesis : in the 1960s – and in the 70s the rate of inbreeding was very high and not sustainable. In 1980 the curve had evened out. This was in the same period that stallions from abroad were introduced into Norwegian Fjord Horse breeding. By 2009 the inbreeding coefficient was 0.070. As a comparison the mating of half siblings is 0.125. The administrators must focus on this and the changes within inbreeding during the last generation. Changes in inbreeding in the last generation (Δ- F) were 0.46 % in 2009 (Johnsen & Seilen 2009). This is acceptable as international guidelines recommend a Δ -F of maximum0.5 – 1% per generation.

(Wooliams et.al 2005) The acceptable results from 2009 should be seen in the light of the factors that have influenced Fjord breeding in this period. The two main factors that contribute to maintaining the level of inbreeding during the last 25 years at an acceptable level are a) the introduction of foreign stock since 1980 and b) the wide use of young stallions. An effective size of population (N_e is equivalent to 2009 a N_e value of 107. This means that the (ΔF) of today contributes 107 unrelated breeding stock. The number should not be below 100 animals.

The position of the Fjord Horse is thus genetically on the borderline of what is acceptable. Examining the rate of inbreeding in a population is important but can never in reality give a complete picture of the situation. At the moment the low number of mares covered is the most direct sign that the breed is threatened. The number of foals registered in the last few years is about 150-200 per annum. At UMB it has been concluded that in small populations increased inbreeding will be a challenge if the number of foals sinks to under 200, with a large proportion of the foals being by young stallions .With the number of coverings and foals born in the Norwegian population which we experience at the moment, it is imperative that in the future the level of inbreeding is carefully monitored. Norges Fjordhestlag, as a breed society, will be focused on this and will consider putting into practice measures that are recommended by the professionals, to deal with the increase of in breeding.

4.3.6 Breeding, use and the market

Breeding and use must at all times be looked at together. An interest in using the fjord for more than breeding and showing is important when related to selling at a reasonable price, economy and further breeding. To increase the number of horses for sale it is important to produce animals that are attractive to the buyer. The largest market will always be the home market but there should be an increased market for export of breeding stock and the occasional good utility animal as well .It appears that showing the Fjord in use whether in tests or in competitions at different levels, is an extremely good way of promoting the breed. The Fjord has shown himself to be a versatile, all round horse and is especially good to drive. Up to now in many Norwegian driving Championships, Fjords have won their class. In NM dressage for ponies, the Fjord has also performed well and shown good results in this and in other disciplines. The best ambassadors of the breed are the many who use and enjoy the breed. The Breeding plan should lead to practical and structured breeding of the Fjord Horse which will ensure a long-term administration of the population.

5 Breeding goals

Through pure breeding maintain breed type and character, the variety and versatility of the breed and to breed a healthy and functional horse. The breeds original colours and markings must be preserved, regardless of the different shades of body colour.
The Fjord Horse should be a strongly built, hardy, well –proportioned and athletic horse with great charm and presence. Different types may be accepted. The Fjord Horse should be reliable and willing, should work well as well as being sensible and quiet. In addition the aim is natural and well balanced movement with good forward movement.
The Fjord should be versatile. It should be easy to handle and suitable for the whole family.
Breeding should focus on producing a Fjord that is attractive for future users with emphasis on good conformation, movement and function.

5.1 The following characteristics are emphasized

Characteristic	Weighting in %
Conformation	50%
Function	30%
Temperament	10%
Soundness	10 %

5.1.1 Conformation

Conformation counts for 50% of the main breeding goal for the Fjord (see 5.2.1)

Conformation should be judged as follows.

1 Breed type and character – performance and function

When judging breed type, character and function the following criteria shall be considered:

Height: There is no maximum or minimum height but the desired height is between 135cm and 150cm at the wither.

Colour and markings: The five accepted colours are brown dun, uls dun, grey dun, red dun (chestnut dun) and yellow dun. There are different shades of colour within each main accepted colour. It is important to keep the so-called primitive markings. A star is acceptable on a mare. Other visable markings are not accepted with the exception of light coloured hooves in red dun and yellow dun horses.Light stripes are accepted as long as they symmetrical on all four hooves. That a lighter area can be defined as a marking the stripe must be clearly defined with a distinct transition from light to dark .The stripes must be almost milky white. Light hooves /limbs should gradually merge into the characteristic colour of red or yellow dun and are not reckoned to be markings but a distinctive feature of these colours.

The mane: on adult horses the forelock should usually cover from one to two thirds of the head. The Fjord should be hogged. The upright mane should be convex and be cut so as to suit the top line.

The head: When judging breed type and character of the Fjord the head is the main feature. It should be small and well defined with a broad and flat forehead. The bridge of the nose should be short and may be straight but preferably concave. The eyes should be large, dark and with a friendly expression. The nostrils should be large and open and the muzzle should be square. The lower jaw and cheek bone should be well defined especially in stallions, but not so strong that the head seems heavy. There should be a good space between the branches of the jaws. The ears should be small, wide apart, parallel and be well pointed.

Gender: There must be a clear distinction between stallions and mares. A mares head should be finer than the stallions. A broad forehead and a well defined lower jaw as well as well defined and large eyes can give the impression that a stallions has a more triangular head than a mare. The neck and crest muscles of the stallion should be stronger than in a mare.

1.1 Conformation and muscular development

When looking at these points the following elements should be considered.

The neck: The neck should be well sett on and have a convex topline. Stallions especially should be well muscled. The Fjord Horse was primarily a working horse and a short heavy neck and straight shoulder was preferred .Today a longer and suppler neck more suitable for riding and driving and as a pack horse, is desired. It is important that the transition between head and neck is more flexible and that the nape of the neck is longer. A long thin neck is not wanted.

The shoulder and wither: The shoulder very much influences movement. It is important that the shoulder is well defined, sloping and long. The withers should not be flat but long and sufficiently well defined so that the line from the top of the neck to the back is even.

Body and topline: The back and loins should be even and well muscled. The back should not be too long and the loins should be short and strong .The transition between back and quarters must not be stiff and at the same time the transition between the loin, back and quarters must be even and strong.

The quarters: The quarters should be long, broad and well muscled. The quarters should not be flat and not too sloping. The sett-on of the tail should not be too high or too low. The thighs (and gaskin) should be well muscled both from the side and from behind.

1.1.1 Limbs and limb position

When looking at the limbs the following should be taken into account:

Forelegs: Joints and tendons should be dry and the leg position from the front, the side and from behind should be correct. The forearm should be long and well muscled and the gaskin should be well let down and well muscled. The knees should be well defined and straight seen from the front. The cannon bones should be dry *(and of sufficient and even width from under the knee joint to the fetlock joint) translators note.* An imagined line from the over arm through the cannon bone and through the hoof should be straight. Back at the knee is not desired as this puts a great deal of strain on the knee (*during fast work*) and can lead to inflammation of the knee joint. The length and angle of the pasterns should be such that movement is soft and elastic.

Hindlegs: Joints and tendons should be dry and limb position correct seen from the front the back and from the side *(see especially during movement) translators note.* The thigh and second thigh (gaskin) should be sufficiently long with strong and well developed muscle. The hock should be well-proportioned, well -positioned, wide and deep. The point of the hock should be well defined. The hocks should not be too straight or too bent as this type of conformation can lead to problems with the stifle joint or the development of spavins respectively. The length and angle of the pasterns should be such that movement is soft and elastic.

Hooves: Hooves should be of good horn quality, well shaped with a strong, deep, wide heel and with the hoof walls at a good angle. The sole should be open and not flat and with a well developed frog.

1.V Movement

Movement and the different paces should be free and natural. Movement should engage the whole body, top line and joints. They must be show good forward movement, balance and rhythm.

The Fjord should be free at the shoulder and use his hocks. High action is not desired.

5.1.2 Performance and function and natural usefulness. What do we look for ?

Versatility-the all round horse

Driving

Riding

Movement

Temperament

5.1.3 Hardiness, soundness

Soundness is weighted at 10% and has been judged during the veterinary inspection in agreement with the stallion judges' panel (kåringsnemd). In classes without a veterinary examination, the conformation judges look at the general health of the horse and the conformation that can lead to unsoundness (this is often related to age).

5.1.4 Temperament

Temperament is weighted at 10% and is looked at in the ring. Temperament has been assessed during the station testing. It should also be described and evaluated by the vet and the performance judges.

5.2 Judging

Judging the individual includes conformation, performance, temperament and health / soundness. These qualities are judged and weighted in accordance to paragraph 5.1 and the result will decide whether the horse will be awarded a premium or license. Each quality must in its self be acceptable. If the conformation is not good enough no matter how good the performance results are, the horse will not be accepted .If the performance is very poor though the conformation is good the horse will not be accepted either. The same principles apply for temperament and soundness. The horse will be awarded the appropriate marks for each individual property, regardless of the quality of the others. An individual cannot be accepted if any mark is 4 or under. The sum of the different properties in judging the individual, is not relevant regarding the final decision (see Judging sheet)

5.2.1 Indexing

A mathematical study has been done weighting each property and each separate part to fit the judging sheet that was introduced in 2011. Mathematical weighting was introduced as a trial project in 2012 so will not influence the results of the assessments and shows of 2012. (See under for current weighting) All separate marks will be weighted in to the main mark for the property, with help of the appropriate weighting. This is to insure that the separate marks will be weighted alike each time. Indexing will lead to a more just and consistent system.

When judging conformation the different properties shall be judged as such:

Breed Type and Character	40%
Conformation (the body) and muscular development	20%
Bone quality and leg position	20%
Movement	20%
Total	100%

6 Stallion Selection (Kåring)*

This means quite literally "chosen or selected "we can use the term licensing.

In breeding the selection of stallions is the most important as they have the greatest influence. The selection of stallions has been built on judging of the individual (kåring). This leads to choosing the best possible breeding stock based on the properties desired in the breeding goal and at the same time discovering defects which will disqualify as a breeding animal. Additional information will be gained by reviewing the progeny of older stallions.

6.1 Rules on Stallion selection (Kåringsvedtekter)

6.1.1 The right to show

A stallion has the right to be shown and may be licensed if he is registered by the NHS (Norwegian Horse Society). Foreign stallions may be shown but must follow the same criteria for registration as a Norwegian bred horse. To be accepted for breeding they must carry out the same tests as the Norwegian bred .They are to be judged on conformation and performance.

6.1.2 Selection and the awarding of premiums

Selection and the awarding of premiums are carried out by an official judge's panel at an officially recognized show. Selection is made in relation to the current breeding plan and in relation to the guidelines for licensing and for the judges panel (.see chapter 11) the guidelines are further specified in the "Regulations for approved (pure bred/ registered) equines"

6.1.3 First time evaluation

The first time a young stallion can be evaluated is in the spring as a three year old. The stallion `s conformation and performance test is judged according to the aims defined in the breeding plans.

The horse is shown loose whenever possible, in an indoor school. Seeing the horse loose gives the judges a further way of judging movement. A stallion can be licensed the first time he is shown and placed in order of merit. The license gives him the right to be used for breeding for a certain length of time (usually one year) after which he must complete a station test. A stallion which is first shown as an older stallion must go through the same program as a three year old (see 6.3)

6.1.4 Second evaluation

A licensed stallion must be shown for a new evaluation in class 2 (4 and 5 year old stallions see current showing rules.) after doing the station test .If the stallion for veterinary reasons or any other valid reason (see chapter 6.2)cannot come as a 4 year old, he may meet as a 5 year old. The horse will be judged on the results of the station test as well as the other criteria as defined in the breeding plan. He may be awarded a 1st, 2nd, or 3rd premium and can also be placed in order of merit. Stallions who are not up to standard in one way or another, lose their license.

6.1.5 The importance of pedigree

On advice from the Breeders group in Norges Fjordhestlag, the pedigree of a stallion can, in special cases, be taken into account .Prior to the show the entire Breeders Group should examine the list of horses that are registered in the show catalogue and inform the judge's panel if there be any stallion with a pedigree that should be especially taken into account. An important part of the breeding group's work is to be familiar with and follow different blood lines to see which should be preserved to insure variety in the Fjord Horse population .Looking at the extent of inbreeding in the population as a whole is a means to insure that the emphasis on certain blood lines is correct. Provided that the system of optimal contribution in Fjord Horse breeding is realized will this cover the need for a systematic survey of the average relationship in comparison with the rest of the population.

6.1.6 Progeny research

Progeny research and use optimal contribution.

Progeny research with a selected progeny group is no longer used in Fjord breeding. A trial system of calculating breeding values by help of the BLUP system will be used. The properties (characteristics) already registered through the present showing system will form the base of the system. If it is deemed necessary to counter-act inbreeding, a mare quota will be introduced. The mare quota or optimal contributions will be calculated annually. The Norwegian Horse Society in cooperation with the relevant qualified persons at the University for Environment and Bio –science, will be responsible for the calculating of BLUP and the optimal contributions. The first BLUP values and mare quotas are to be calculated in 2013, and an extensive trial period, with representatives from Norges Fjordhest lag, will be supported before an eventual system will be used in practice.

6.1.7 The removal of a stallion license

Stallions which do not come forward for a new appraisal in accordance with the licensing rules automatically lose their license to breed.

6.2 Veterinary examinations

The stallion must be examined by the veterinary surgeon in the course of the show or performance testing. The vet shall also look at his temperament. The following procedure should be carried out when examining Fjord stallions.

- A general examination of the digestive system with emphasis on mouth and breathing system where the heart is ausculted.
- Movement at walk and trot, flexing of the foreleg (knee, carpus) and hocks. Palpation of joints and examination of hooves.
- Special examination of the patella joint for locking of the joint. The horse must be led in a small circle on both hands, be backed and be led at least 4 times ,slowly down a slope, (so the vet may see the horse twice from each side)

6.2.1 Defects which can exclude a horse from being licensed or given a premium

A stallion shall not be accepted if a veterinary examination proves that the following defects are present.

- Cryptorchidism unilateral (one testes in the scrotum) or bilateral cryptorchism (no testis in the scrotum.] Different sizes and consistency of the testes are not accepted.
- Scrotal hernia is not accepted in stallions 10 years or under. Owners of licensed stallions are expected to notify NHS if the stallion developes a scrotal hernia. Stallion owners should be informed of this on receiving the license.
- Serious conditions of the mouth (bite correctness) are disqualifying ie parrot mouth or undershot jaw. Any condition where the upper and lower teeth do not meet unless this is caused by injury.

6.2.2 Splints

Splints can have different causes. The classical splint is located on the inside of the cannon bone (fore cannon) just under the knee joint, this may be the result of uneven pressure as a result of the shape of the knee joint. Splints of this type can appear on both fore limbs and are symmetrical. Splints may then be caused by poor conformation of the forelimbs, bench knees or calf kneed. The horse will then be judged on poor limb position as well as for the splints. If the splints are not large they should not be judged severely.

6.2.3 Examination of the male genital organs

Clinical examination of the testicles is carried out at the stallion licensing. The first time shown a stallion shall have two normal sized testicles. The position in the scrotum should be normal, they should be symmetrical and of normal consistency. Rotation of one or both testicles is not unusual in some breeds. The condition is not automatically disqualifying. Rotated testicles shall be described and can be stressed.

6.2.4 Foal percentage / fertility

The judge's panel can decide whether to call in a stallion with a low fertility rate, to a closer examination. The panel in consultation with the Breeding advisor decide whether the stallion should be called in for a fertility test. Poor fertility can lead to the stallion being withdrawn.

6.3 Performance test

The performance tests for Fjord Horses are being evaluated and there will be changes. The tests described below are still in operation and will be used until the new tests are available.

6.3.1 Seeing the horse loose in the indoor school

Showing the horse loose, in an indoor school, is carried out the first time a stallion is forward for licensing. (Where ever this is practically possible) To see the horse loose gives added information to the judges when judging movement .

6.3.2 Driving test

A performance test (driving) is compulsory the first time stallion is judged at the stallion show or if an unlicensed stallion is to be reassessed.

Otherwise see NHS `s current performance rules for mares and stallions. Results from the judging of conformation, performance, temperament and soundness shall be rated in relation to the different properties (see paragraph 5.2) and be a basis for licensing.

6.3.3 Station testing

All stallions that were first licensed as 3 or 4 year olds must, to be granted a new breeding license, complete the station test. This test gives a clearer picture of the stallions' capacity, (performance) and temperament. Stallions which are imported or leased and are licensed for breeding in Norway are called in to the station test in the same way as Norwegian registered stallions. Tests carried out abroad may be accepted if they are of the same quality and can be compared directly with the Norwegian tests. One –day tests will not be accepted in any case.

The owner of the imported / leased stallion ,is responsible for all the test expenses involved .Stallions that have been licensed for the first time as 5 year olds or older, must, in order to 6be granted a new license, complete the station test, the following year. Stallions that are unable to come to the station test at the appropriate time may apply for a year's postponement. The stallion cannot be used for breeding that year. The owner himself must enter the stallion for the station test. Stallions which do not pass the station test cannot apply again.

Training and testing under the current system, has been carried out during a 4 week period, in the spring when the stallion is 4

Stallions which are first licensed as 4 year olds are called in to training and testing as 5 year olds (in the spring).

The elements that are part of the training and testing system are as follows:

- Loose jumping
- Shown loose.
- Driving with a light vehicle
- Driving (heavy work)
- Riding
- Behaviour in traffic
- Gaits and forward movement
- Behaviour in the stable
- Overall impression

The stallions shall be examined by the vet at the beginning and at the end of the test period.

Those who are responsible for the test give marks for each element .On the final day, a judge`s panel assesses each stallion and gives marks for certain parts of the test. See judging sheet app. 8.* the marks are added together and weighted as specified. At the show which follows, the results from the test play a significant part in the result, combined with conformation, temperament and health /soundness.

* *this is being amended*

6.4 Progeny groups for stallions

Judging of progeny groups are to be judged by the relevant "Rules for official horse shows "

6.5 Use of unlicensed stallion on own mares

An unlicensed stallion may not be used in Fjord Horse breeding.

6.6 Use of embryo transplant

A Fjord conceived through embryo transplant cannot be registered in Norway.

6.7 Use of sperm from a dead stallion.

Sperm from a dead /licensed stallion may be used during the covering season in the year of his death. On application the stallion judges' panel may give a dispensation from this rule. The application must be sent to Norges Fjordhestlag for comment.

6.8 Artificial insemination AI

Stallions licensed for breeding in Norway may also be used in AI on Norwegian mares. Imported sperm from a stallion bred in another country may not be used on Norwegian mares unless the stallion is accepted by the Judges panel for Fjords.

7 Selecting mares

7.1 Mare shows

Selecting mares for breeding ought to be based on the individual and through her progeny.

Mare shows with performance tests are an important step in the selection of breeding stock. For judging see "the relevant rules for official Horse Shows" and the judging sheet. (These *are being amended*)

The performance tests are carried out according to the current rules from NHS. The show results of the mares must be according to with the breeding plans for the breed. The good tradition of breeding from young mares ought to be kept. It is very important to encourage the showing of mares with the right incentives (prize money and other grants.)

8 Breed regulations and measures

A stallion may be restricted to covering only a certain number of mares or a stallion could be restricted in the number of sons licensed for breeding. No measures can be introduced without their being discussed with NFL. The University of Environment and Bio-science is in the course of research project on the optimal contribution /mare quotas for the 3 Norwegian Native Breeds.

9 Incentives for breeding

9.1 Incentives directed by Norges Fjordhestlag

9.1.1 Unghestsjå - Shows for young stock

An "extra rosette" may be awarded to exceptional animals in the classes for 2 & 3 year old fillies at a show for young stock. These fillies must have an 8 in overall impression and no mark under 7. NFL presents the special rosettes for these fillies.

9.1.2 Incentives directed by the Norwegian Horse Society.

9.2.1 Stallion shows.

The NHS is responsible for arranging the stallion shows . The breed societies shall contribute with technical personnel.

9.2.2 Mare shows

NHS is responsible for arranging mare shows , assisted by the local show committees and breed societies .The breed societies shall contribute technical personnel.

9.2.3 Young Stock shows.

NHS is responsible for arranging shows for young stock, assisted by the local show committees and breed societies. The breed societies shall contribute technical personnel.

9.2.4 Registration of the individual and publishing of the studbook.

Stallion owners are responsible for sending covering slips to the NHS by the 1st of October of the year of covering. If the covering slips are not received ,after being reminded ,by the latest 1st January the next year, the stallion may lose his license for the following year .NHS is responsible for sending foal lists to mare owners who have had a mare covered the previous year. Mare owners must fill in the form and return it to NHS before the 1st of November. The foal will then be registered. (see rules on registration).NHS is responsible for registration and studbook entries for Fjord Horses, according to the rules and regulations agreed upon by the NHS and NFL. NHS is obliged to publish a studbook for the Fjord Horse. The aim is to publish a studbook every third year See stud book on the net pages www.nhest.no

9.2.5 Further economical support to breeding

Economical support to breeding will be given in accordance to the contents of the Breeding Plan. The grant is decided upon by the Breeder`s Advisory group of the NHS after application by NFL. The NHS in cooperation with the breed societies are responsible for the development of breeding plans. The current plan includes the following points-

- To increase the judges knowledge of the horse so that they may better differentiate between good and poor animals and good and poor qualities
- To improve registration. More foals born must be registered. Inherited defects, colours, markings, whorls etc must be registered. A more complete registry of the individual will form a better base for statistics and fertility rates for mares and stallions.
- In cooperation with the breed societies, make sure that enough conformation and performance judges be educated.

10 Realizing the Breeding Plan

10.1 Revision of the breeding plan

10.1 cont

The breeding plan for the Fjord and appendixes may only be revised every four years. In very special cases exceptions can be made.

10.1.2 Suggested changes in the breeding plan

NFL can send suggested changes to NHS before the 1st of October, the year before the changes are to be materialized. The NHS board will draft and accept eventual adjustments.

10.1.3 The Breeding Advisors group (NHS)

The Breeding Advisors Group will be composed in such a way that the different breeds' interests shall be met. *(This means that there shall be a representative for each breed or breed group) see Instructions for the Breeding Advisory Group.*

10.4 Studbook

To have a registered Fjord entered into the main studbook, five generations of documented fjord horse breeding must be registered. (See further the rules for registering the Døla Horse, the Fjord and the Nordlandshest /Lyngshest NHS)

11 Instructions for Stallion Judges and Judges

11.1 Regulations

Stallions are judged at all times, by the current breeding plan and rules for shows and performance tests. Judges who are to be part of the Judges Panel for Stallions are appointed by the Breeding Advisors Group at NHS after being proposed by NFL.(See "Regulation about the breeding of (pure bred)equines. "

11.2 Education of Judges

The education and authorization of Judges of conformation and performance is under NHS and follows an approved system.

11.3 Following up

NFL shall have refresher courses for Fjord Horse Judges. These courses should be held each year so Judges may refresh their knowledge and be advised on eventual changes in regulations or in the breeding plan .To continue judging a judge must attend a minimum of these refresher courses.

12 Stallion Selection: complaints and how they are dealt with

12.1 Right to submit a complaint

Decisions that are made according to the resolution on the Public Administration Act of 10th February 1967 chapter V1,give the right to submit a complaint. The complaint must be submitted within 3 weeks of the decision being made. The complaint must be sent to the body that has made the resolution.

12.2 Treatment of the complaint.

The complaint about the selection /assessment result must be submitted in writing, to the Norwegian Horse Society. The Judges on the stallion selection panel must review the decision and look at eventual new factors. If the decision is not overturned, the case will be sent to the Complaints Board for the final decision on the selection /assessment result. The final decision cannot be reversed unless the King makes another decision. (See mandate for Complaints Board)

With many thanks to the translator, Susan Hellum