VOLVO

DEVELOPMENT OF A NEW PRODUCT

THE VOLVO FL SERIES

Today we stand at the point where we will introduce a brand new unique product programme in the weight class 11-38 tonnes, which also can be used in certain applications for a gross combination weight up to 44 tonnes.

This new generation of trucks has been developed to meet the demands of the nineties for rational transports particularly in the distribution and medium heavy contruction segments. In the long haulage segment we will still offer you our very competitive F10 and F12 range.

The new trucks, named FL6, 7 and 10, which replace our present F6 and F7 will, through its increased specification range not only carry out the transport work, which the outgoing trucks did, it will also expand into new market and transport segments. We can therefore confidently say that Volvo Truck Corporation widens its horizons with the new range of trucks and creates new opportunities.

SEGMENT

The transport which today and tomorrow will be done by trucks covers a very large area.

In order to illustrate this and to study different types of transport we use a segment-model where the horizontal axis represents the transport distance. This axis is divided by a vertical line, and on the left of this line driving is normally done during the day and on the right the transport distance is so long that staying overnight becomes necessary. The vertical axis represents road quality and the horizontal line that divides this axis separates transport on paved roads or transport on poor roads or partly off-road driving.

In this manner we can divide the transport work into construction, which is indicated in yellow, distribution in red and long haulage which is shown in blue.

If todays trucks, F6 and F7, represent the red surface in the graph to the right, we clearly see the expansion which the new FL truck family makes possible. The boundaries are moved outwards and we will present optimum trucks in the segments city distribution, regional transport, municipal service and medium heavy construction.

MUNICIPAL SERVICE

Municipal service includes transport tasks in cities varying from simple gravel transports to special types of transports such as refuse handling.

A low floor level, excellent side visibility and walk-through cab are essential requirements. A seat for a second passenger is desirable. High payload in terms of weights and a low chassis are important requirements for special bodies such as refuse equipment.

MEDIUM HEAVY CONSTRUCTION

Transport of gravel, excavated material and broken rock, are typical applications in the medium heavy construction segment, where off-road driving also occurs.

A low overall height of the vehicle is necessary for driving into gravel filling stations and tunnels.

The driveline must be optimised for high traction in order to achieve good accessability and a fast average speed for the transport distance. The chassis allows a high payload, which is necessary for weight critical goods. Good ground clearance is essential for good off-road driving.

The chassis must be adapted for various bodies such as tippers, dumpers, cranes, etc. This type of driving puts a lot of strain on the vehicle and components and for this reason durability is an important parameter.

CHARACTERISTICS - TECHNICAL SOLUTIONS

The new FL-programme clearly meets the requirements that I have just presented. In order to show this, the various segment requirements have been grouped in a number of truck characteristics. We will now take a look at how we have met the various demands.

LOW CAB

In the new FL-programme two new cabs are included, one 2.2 meters wide and another 2.4 meters wide. Both cabs offer up to approximately 150 millimeters lower floor level than todays distribution trucks. At the same time we have a low overall height less than 3 meters on the construction trucks.

ENTRY STEP

The entry step in the new FL trucks is lower and wider than todays programme. The trucks have also been fitted with well positioned steps and well placed grab handles.

VISIBILITY

By approximately 20 percent increased glazed areas the new FL cabs give an improved close-up, upwards and side visibility compared to todays programme. In the narrow cab, extra side view windows are positioned low in the doors. Larger and lower placed mirrors and rectangular headlights with improved dipped beam have also been introduced.

MANOEUVRABILITY

The wheel angle has been increased in order to decrease the turning circle. The power steering has been changed so that a better road feeling has been achieved. Controls and switches have been given an improved ergonomic positioning.

SAFETY

The new FL cabs meet Volvo`s demands on safety. That is energy-absorbing steering wheel and instrument panel as well as energy absorbing reinforcements in the front and doors.

The cabs have been impact and crash tested in accordance with Swedish Standards, the strictest in the World.

Safety belts can be fitted. New and safer brake systems have been introduced or the entire FL programme, that is disc brakes and Z-Cam brakes and the last one includes an antilock system as variant, called ABZ-Brake.

DRIVER COMFORT

The cab suspension has been improved and the wide cab is completely suspended from the chassis and offers the best comfort with a fixed seat. An improved ergonomic driving position, based on our own analyses, have been introduced. The steering wheel is individually adjustable in the wide cab and the noise level has been decreased by 2 to 3 dB(A) partly by the introduction of a telescopic gear shift linkage, airconditioning is now available for the whole programme.

SPACIOUS CAB

In the new generation of cabs, the space for both the driver and the passenger has been considerably improved and is now of the same standard as the entire Volvo programme.

The front part of the engine over is lower in the narrow cab which makes it easier to walk through the cab. The cab is also available with a second passenger seat for amongst others municipal service transport.

A resting bunk is available for both of the cabs, and the wide cab is offered in a sleeper version for regional transports for example.

DRIVELINE PERFORMANCE

The drivelines have been renewed to a large extent by the introduction of two new engines namely; A new 6 and 7 litre engine. The 10 litre engine is also included in the programme and the engines are intercooled.

The broad engine programme supplies power ranging from 150 to 300 hp and all engines meet the noise and emission standards of the 1980`s.

Included in the gearbox family are range and split gearboxes of up to 16 gears in the heavier part of the FL programme, and in the lighter there are 5 and 6 speed gearboxes, automatic gearboxes are available in 4 and 5 speed.

Flywheel power take off is available as a variant for concrete mixers and refuse trucks amongst others.

And of course all the driveline combinations give optimum performance in each respective application.

PAYLOAD

The payload has been increased considerably in terms of weight and volume. The chassis have been optimised for each segment. They are approximately up to 400 kilos lighter and up to 100 millimeters lower. The front axle capacity has increased up to 700 kilos.

ADAPTATION FOR DIFFERENT TRANSPORT SYSTEMS

Increased rationalisation and structural changes within the distribution segment implies that the vehicle becomes more integrated in the transport system, and that is why easy adaption for different transport systems is very important.

The new FL generation has been equipped with air suspension and levelling and we can now offer complete adaptability to different carrier systems.

We also offer a factory built fully equipped tractor with the Volvo fifth wheel as well as pre-drilled frames for body reinforcements on platform trucks.

The heavier trucks FL7 and 10 are equipped with a high front axle for construction work.

RELIABILITY

The availability has been increased by introducing new more reliable engines, new more efficient brake systems and more reliable electrical systems. Simplified service procedures and time based extended service intervals further improve the availability of the trucks and it also decreases the maintenance cost.

FUEL CONSUMPTION

The fuel consumption is calculated to decrease with 3 to 5 percent compared to today`s programme. Contributing factors are new more efficient engines, more intercooler versions, aerodynamic cab design and air deflectors for high bodies.

DURABILITY

Improved durability has been achieved through the design of new engines, brake and electrical systems. Hot dip galvanised plate gives us a practically maintenance free cab which won`t limit the technical durability of the truck.

TRANSPORT ECONOMY

As appears from my presentation the new FL programme has been developed to achieve maximum influence on total transport economy. That means maximum influence on transport, handling and warehousing. The truck family offers optimum transport performance as well as adaptability and flexibility for rational body systems.

The change in generated revenues and costs resulting from improved transport performance has been estimated in order to compare customer economy performance between the new FL programme and the present programme.

It is with pride we can say that the targets we aimed for have been met. The analyses show that the difference between revenues and costs increased by 5 to 15 percent of the total yearly cost compared with the present programme.

Volvo Truck Corporation offers you, for the nineties, a highly competitive product programme as regards driver environment, transport performance, reliability and customer economy.

So, let us now take a look at what the results are when these various technical solutions are brought together to a brand new highly competitive truck family.

VOLVO

DEVELOPMENT OF A NEW PRODUCT

L. KARLSSON - PRODUCT PLANNING MANAGER

VOLVO TRUCK CORPORATION

The Volvo FL Series is a new generation of trucks that has been developed to meet the demands of the nineties for rational transports, particularly in the distribution and medium heavy construction segments.

To begin with the Transport Industry was divided into segments with such factors as road quality, distance driven and task (such as construction, distribution and long distance haulage) taken into consideration.

This was followed by an assessment of world geography, population, and gross national product of each country to determine the location of the world`s strongest markets.

The FL segment requirements include a low positioned cab, good cab access and visibility, good manoeuverability, high safety, low noise and exhaust emission levels. The cab must be a spacious comfortable place in which to work with the option of a sleeping facility. The driveline must be optimised for both city distribution and highway driving. An adaptable chassis which can take a high payload with low chassis height is essential.

Finally, low fuel consumption and long durability are vital for good economy for the customer.