

THE METEOROLOGICAL ENSURING OF THE MOTOR TRANSPORT IN UKRAINE

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The weather forecasters of the Ukrainian meteorological centre supply motor transport with the information like the other branches of economics.

They work out specialized forecasts and storm-cones for Ukraine, Kiev region and for the city of Kiev. The motor transport organizations and the motor road organizations receive this information by telephone and teletype.

In the weather forecasts for 1-3 days they show the following meteorological elements and weather phenomenon: precipitation (snow, rain, wet snow), weather phenomenon (snow-storm, fog, ice-covered ground), horizontal visibility, wind direction, wind speed, air temperature.

Working out the information about storm-cones they point the exact time of the beginning of the dangerous phenomenon and its intensity.

One of the most dangerous weather phenomenon for the motor transport is ice-covering that makes it more difficult to exploit the motor roads. Because of this phenomenon the quantity of the road accidents is increasing, the efficiency of the motor vehicle is decreasing, the cost price of the road haulage is raising.

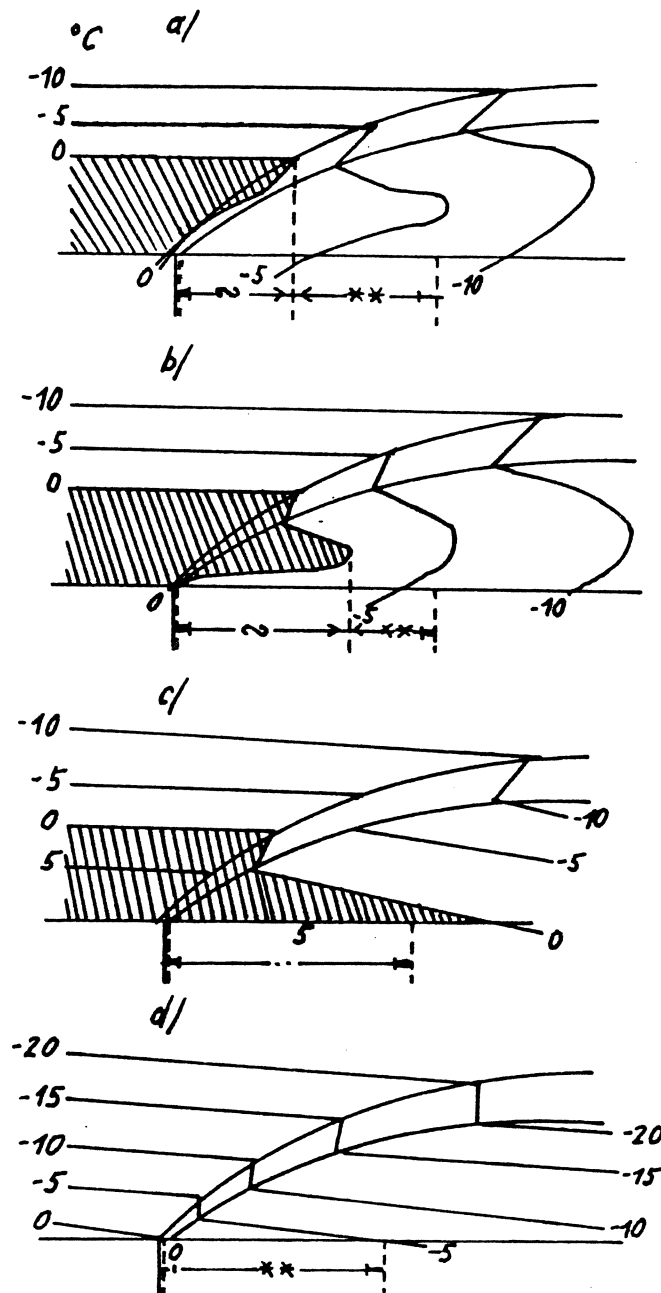
According to the genetic signs and the nature of the ice-covering formation they distinguish some kinds of this phenomenon. The most dangerous and prevalent in Ukraine is the ice-covered ground. This is the phenomenon when the air and the ground temperature is below zero and on the road covering there appear freezing of the super-cooling rain drops or drizzling drops and it makes solid ice that has glass structure and smooth surface. The forecasts of this general process of ice-covering with due regard for the air and ground temperature and also takes into account precipitation and their phase. Ice-covering can appear within the air temperature from +0,5 C (with the temperature of the road covering below zero) till -12 C. But the biggest quantity of the cases of ice-covering growth takes place by the air temperature from 0 C to 5 C below zero (90% for the frontal and 94% of the innermass ice-covering).

Innermass ice-covering in the Ukraine are formed in the bar formations both of the cyclonic (44%) and of the anticyclonic (56%) kind.

In accordance with the regional peculiarities of the forecast process and physical and geographical characteristics of the Ukrainian territory we can distinguish two zones of inner mass ice-covering

formation. In the northern and eastern regions ice-coverings are formed mainly with the influence of the southwest and west periphery of the western anticyclon or its crest. On the rest of the territory (that is western districts and southwest of Ukraine) the ice-covering is formed mainly on the northern periphery of the hollows spreading from south.west to south.

Frontal ice-covering is formed in many cases in front of the warm front (80%). And the frequency of ice-covering formation by South process (when South cyclons go out) is bigger (88-94%) then by the north-west (71%) and by the west (75%) processes. On the cold front and on the front of occlusion the ice-covering is formed very seldom (13% and 7% accordingly).



Scheme of thermal structure of the lower troposphere in the zone of a warm front with ice-covering (a,b) and without (c,d)

The characteristic thermal structure of the lower troposphere by the frontal ice-covering makes possible to differentiate the aerological diaramby the ice-covering are moved to the right side (to the side of the higher temperature) and concentrated in the comperatively narrow temperature interval at all the levels of the lower trposphere. The main differences can be noticed at the lower 1,5 km level. In the majority of cases (86%) by ice-covering the typical feature for the lower level of the troposphere its inversive changes of the air temperature with its height and its rising to the positive points.

In the middle latitudes the majority of cases of the long precipitations comes from the clouds of the mixed phaze condition. In this type of clouds there proceeds the process of the ice elements growth on account of recondensation of the water steam from drops to cristals. As a rule this type of clouds gives solid precipitations. To form ice-covering ground the precipitations have to melt while falling.

It's happening in the air layer with the positive temperature where snow is melting and turns into rain. The position of this layer, that is not on the ground but at some height, makes the necessary phaze of precipitations for ice-covering formation. It can be described in the following way: snow rain overcold rain ice.covering.

The characteristic features of the thermal structure of the lower troposphere in the zone of the Ukrainian weather forecasters haven't the possibility to use the information about the real condition of the roads because of the lack of technical means. They can only guess what the quality condition of this or that part of the road is. And they are to make the forecast for this part of the road using the information about the weather phenomenon that were noticed on the eve.

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