

Keflavik Airport with and without runway 0725
Some utility considerations
(summary)

We compare the utility of Keflavik airport, according to wind restrictions, when on one hand only runways **0220** and **1129** are accessible, and on the other hand all three runways **0220**, **1129** and runway **0725** are accessible.

Synoptic-observations from Keflavik airport, made at every three hours during the period 1. January 1971 to 31. December 1992, form the basis of the present considerations, a total of 64968 observations.

Crosswind

Figure 1 shows how often (in percent) the main runways (**0220,1129**) and all runways (**0220,1129,0725**) are closed when maximum crosswind limits are increased stepwise.

Figure 2 shows how runway **0725** improves the potential usability of the airport with increasing crosswind limits. It is clear that the actual gain decreases as limits are increased.

Figure 3 shows how the usability of each of the two directions **07** and **25** varies with increasing crosswind limits. It also shows the total potential use of runway **0725** when the main runways are closed.

It is evident that the main contribution of an overall increase in usability of the airport by the **0725** runway in strong winds derives from the **25** flank of the runway.

Seasonal variability

The seasonal variation of the usability of the runways is highlighted in fig. 4,5 and 6.

Figures 4,5,6 shows how often (in percent) the main runways (**0220,1129**) and all runways (**0220,1129,0725**) are closed when maximum crosswind limits are set at 10 knots (fig.4) 13 knots (fig.5) and 20 knots (fig.6) respectively.

Figure 7,8,9 show the potential usability of the flanks **07** and **25** when maximum crosswind limits are 10 knots (fig.7) 13 knots(fig.8) and 20 knots (fig.9). They also show the total potential usage of runway **0725** when the main runways are closed, because these crosswind limits are exceeded.

Conclusions

The importance of runway **0725** depends on the service function of the airport.

1. If it is to serve small planes that have max crosswind limits set at 10 knots, there is an obvious gain of having access to runway **0725**, especially during the winter.
2. If on the other hand the main function of the airport is to serve planes that have crosswind limits set at 20 knots, the gain of runway **0725** is minimal.

Reykjavík 3 januar 1994
Sigurður Jónsson at Veðurstofa Íslands

Maximum crosswind on runway

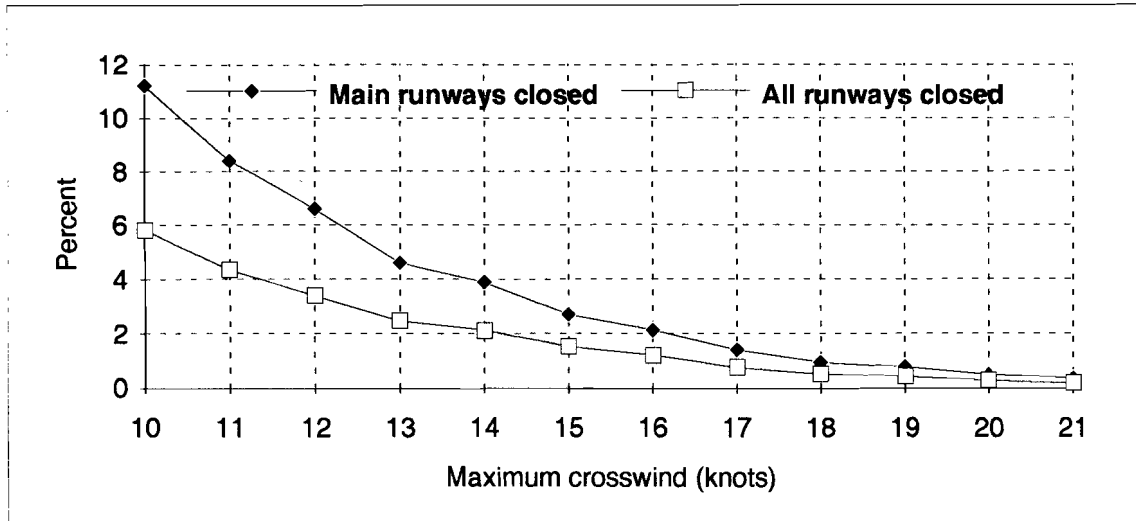


Figure 1

Increased usability because of runway 0725

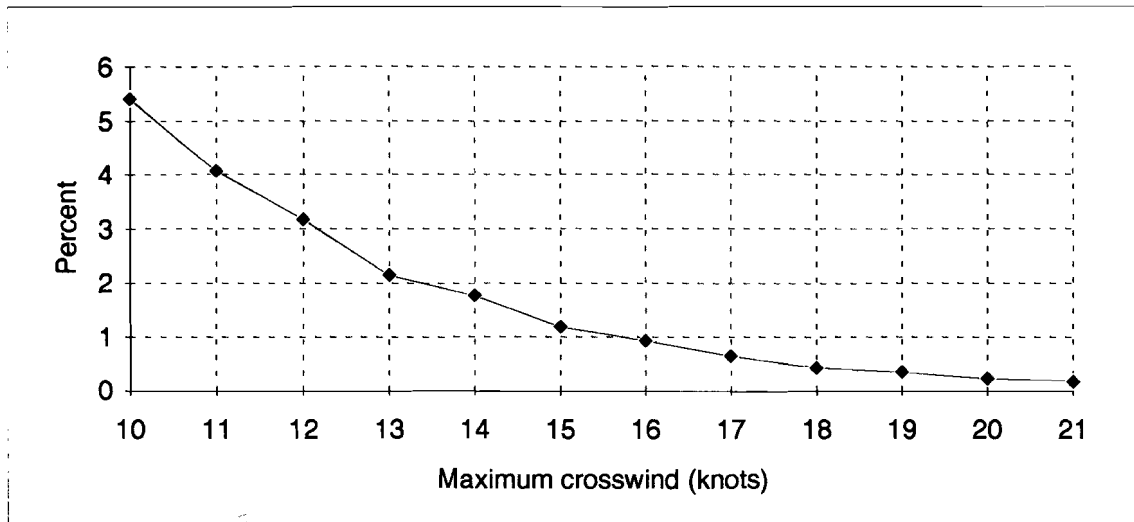


Figure 2

Usability of runway 0725

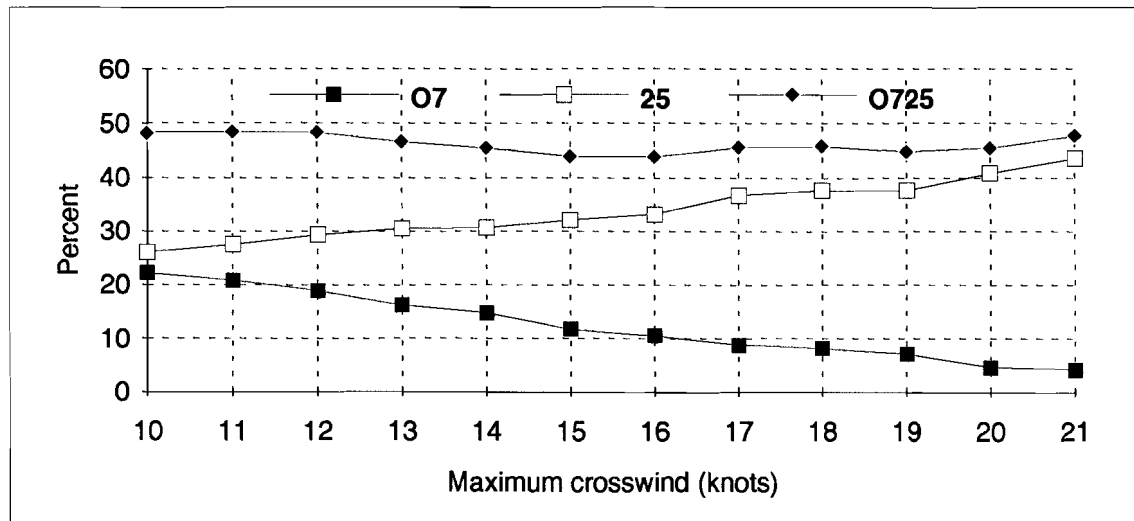


Figure 3

Maximum crosswind on runway 10 knots

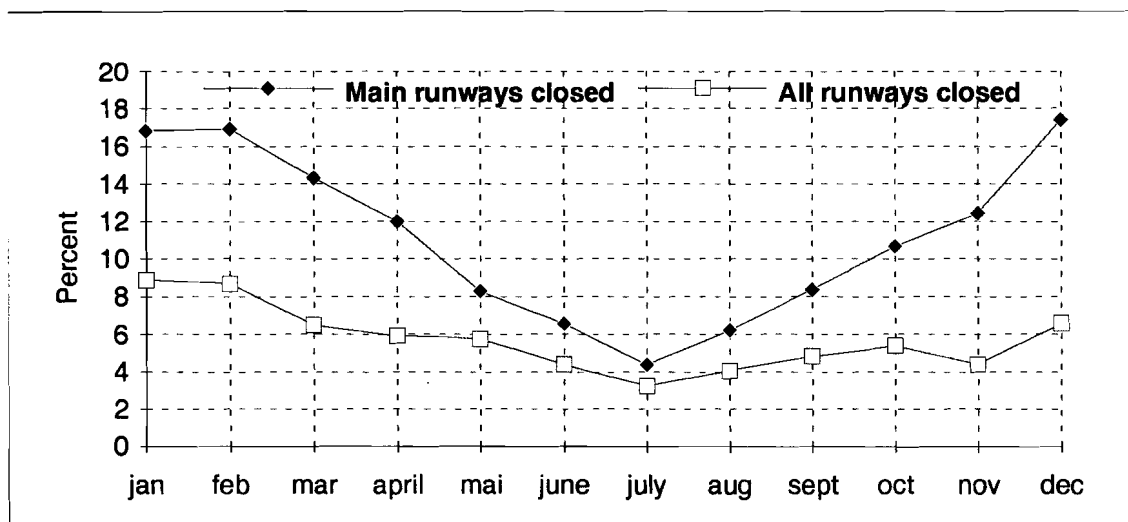


Figure 4

Maximum crosswind on runway 13 knots

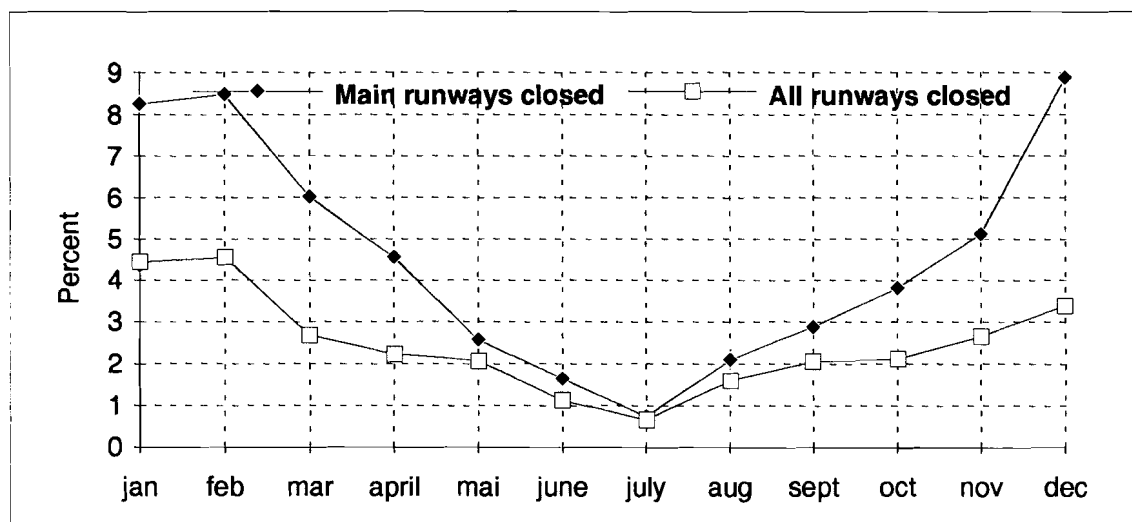


Figure 5

Maximum crosswind on runway 20 knots

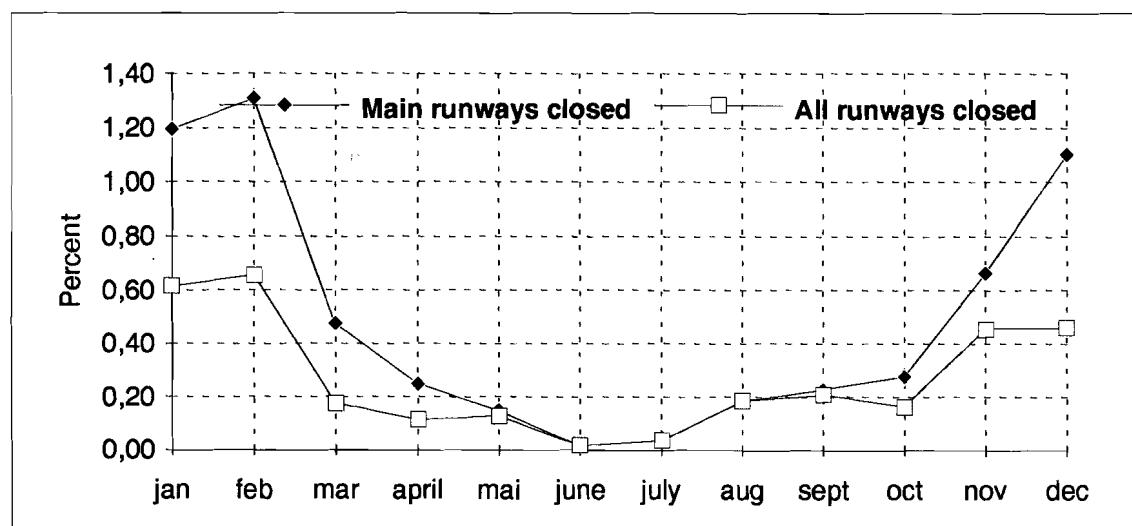


Figure 6

**Usability of runway 0725
Maximum crosswind on runway 10 knots**

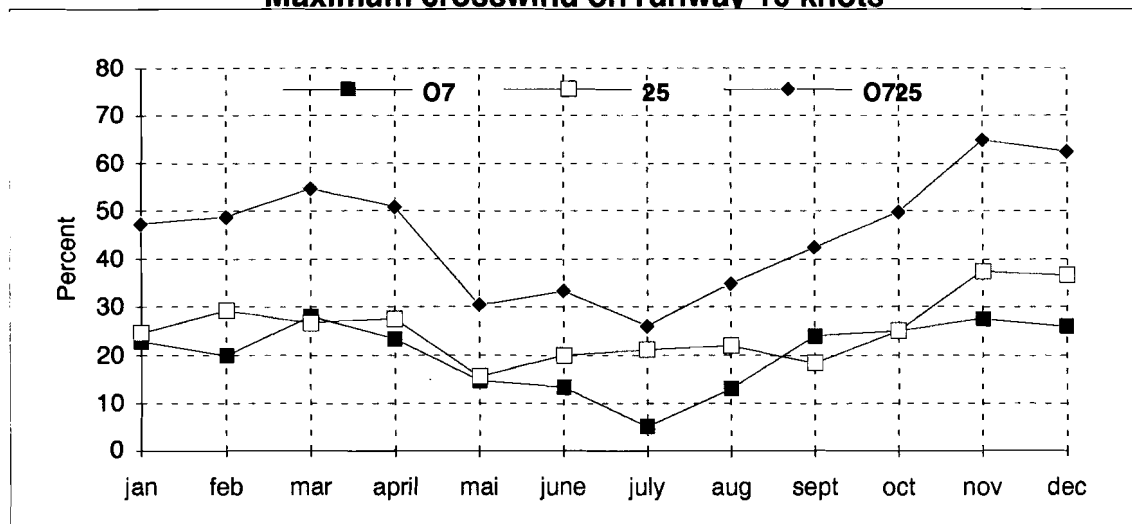


Figure 7

**Usability of runway 0725
Maximum crosswind on runway 13 knots**

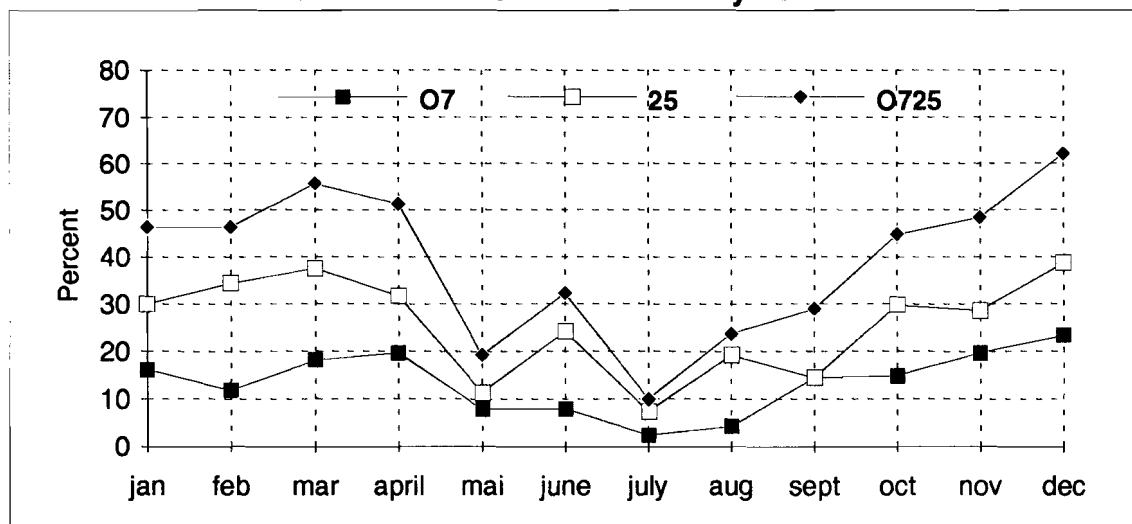


Figure 8

**Usability of runway 0725
Maximum crosswind on runway 20 knots**

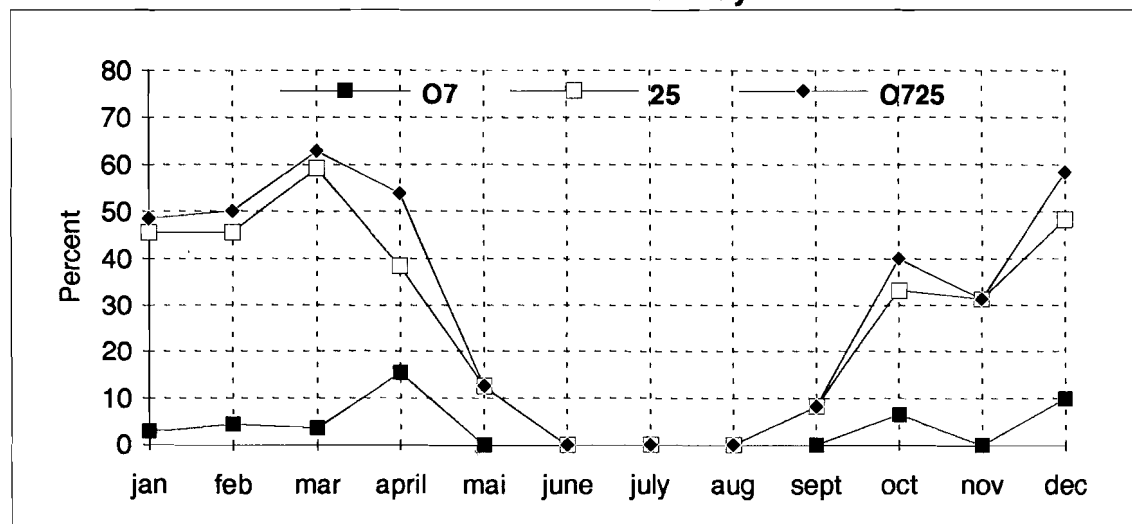


Figure 9