Keeflavik Airport with and without runway 0725

Some utility considerations

(summary)

We compare the utility of Keeflavik 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.

Synopoc-observations from Keeflavik 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.

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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

![Graph showing maximum crosswind on runway 10 knots with data points for Main runways closed and All runways closed.](image)

**Figure 4**

Maximum crosswind on runway 13 knots

![Graph showing maximum crosswind on runway 13 knots with data points for Main runways closed and All runways closed.](image)

**Figure 5**

Maximum crosswind on runway 20 knots

![Graph showing maximum crosswind on runway 20 knots with data points for Main runways closed and All runways closed.](image)

**Figure 6**
Figure 7
Usability of runway 0725
Maximum crosswind on runway 10 knots

Figure 8
Usability of runway 0725
Maximum crosswind on runway 13 knots

Figure 9
Usability of runway 0725
Maximum crosswind on runway 20 knots