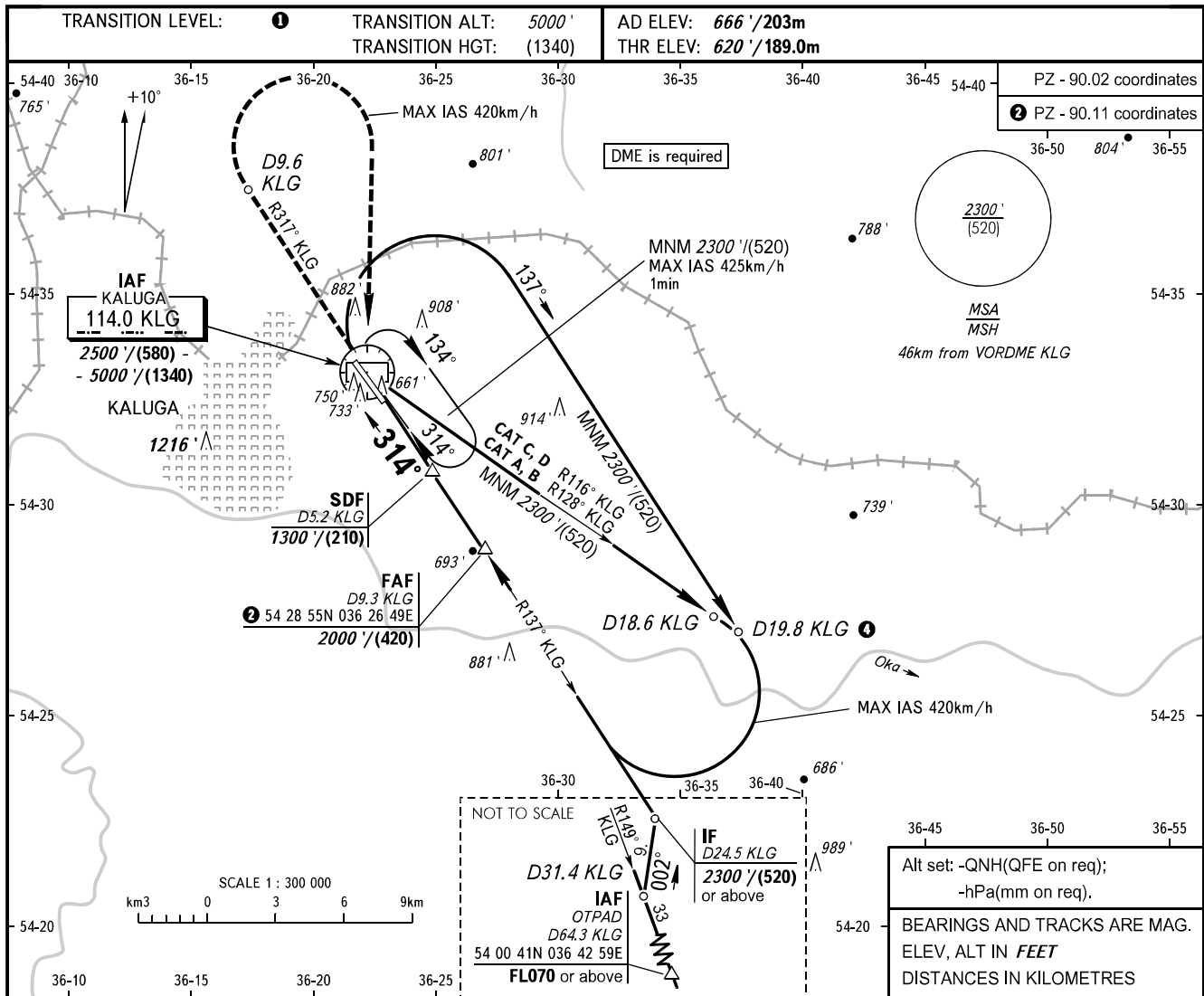


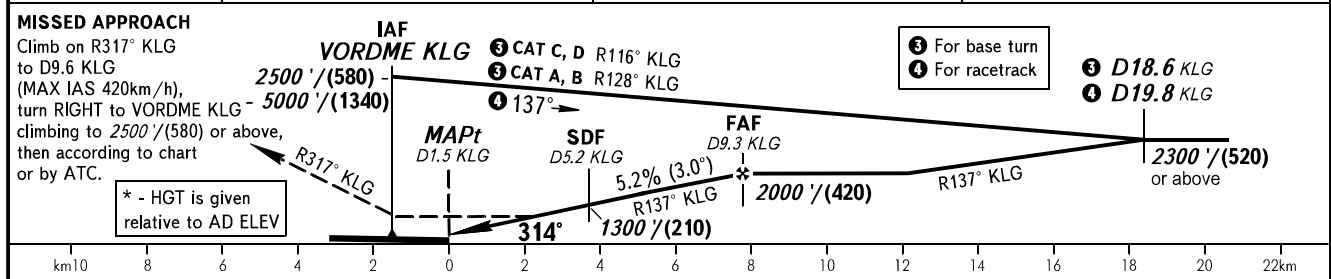
**INSTRUMENT
APPROACH
CHART - ICAO**

KALUGA TOWER 120.300

**KALUGA, RUSSIA
GRABTSEVO
VOR RWY 31**



| | | | |
|----------|---------------|---------------|---------------|
| DME KLG | 5.0 | 7.0 | 9.0 |
| ALTITUDE | 1270' / (200) | 1610' / (305) | 1950' / (405) |



| OCA(H) | | A | B | C | D |
|----------------------|----------|-----------------------|-----------------------|-----------------------|-----------------------|
| Straight-in Approach | With SDF | 980' (360') / (110) | 980' (360') / (110) | 980' (360') / (110) | 980' (360') / (110) |
| | WO SDF | 1080' (460') / (145) | 1080' (460') / (145) | 1080' (460') / (145) | 1080' (460') / (145) |
| Circling | | 1180' (520') / (160)* | 1210' (550') / (170)* | 1310' (650') / (200)* | 1360' (700') / (220)* |

1 TRANSITION LEVEL:
- FL060 when QNH is 1013 hPa (760mm mercury column) or above;
- FL070 when QNH is 977 hPa (733mm mercury column) or above, but less than 1013 hPa (760mm mercury column);
- FL080 when QNH is less than 977 hPa (733mm mercury column).

WARNING:
1. Visual manoeuvring WEST of AD is PROHIBITED.
2. Final approach track is offset by 3° from the RWY centre line.
3. MAPt at D1.5 KLG. Timing not authorized for defining MAPt.

| GROUND SPEED | km/h | 150 | 180 | 210 | 240 | 270 | 300 | 330 | 360 | 390 |
|-----------------|--------|-----|-----|-----|-----|-----|-----|-----|------|------|
| RATE OF DESCENT | m/s | 2.2 | 2.6 | 3.0 | 3.5 | 3.9 | 4.3 | 4.8 | 5.2 | 5.6 |
| RATE OF DESCENT | ft/min | 427 | 512 | 597 | 682 | 768 | 853 | 938 | 1024 | 1109 |