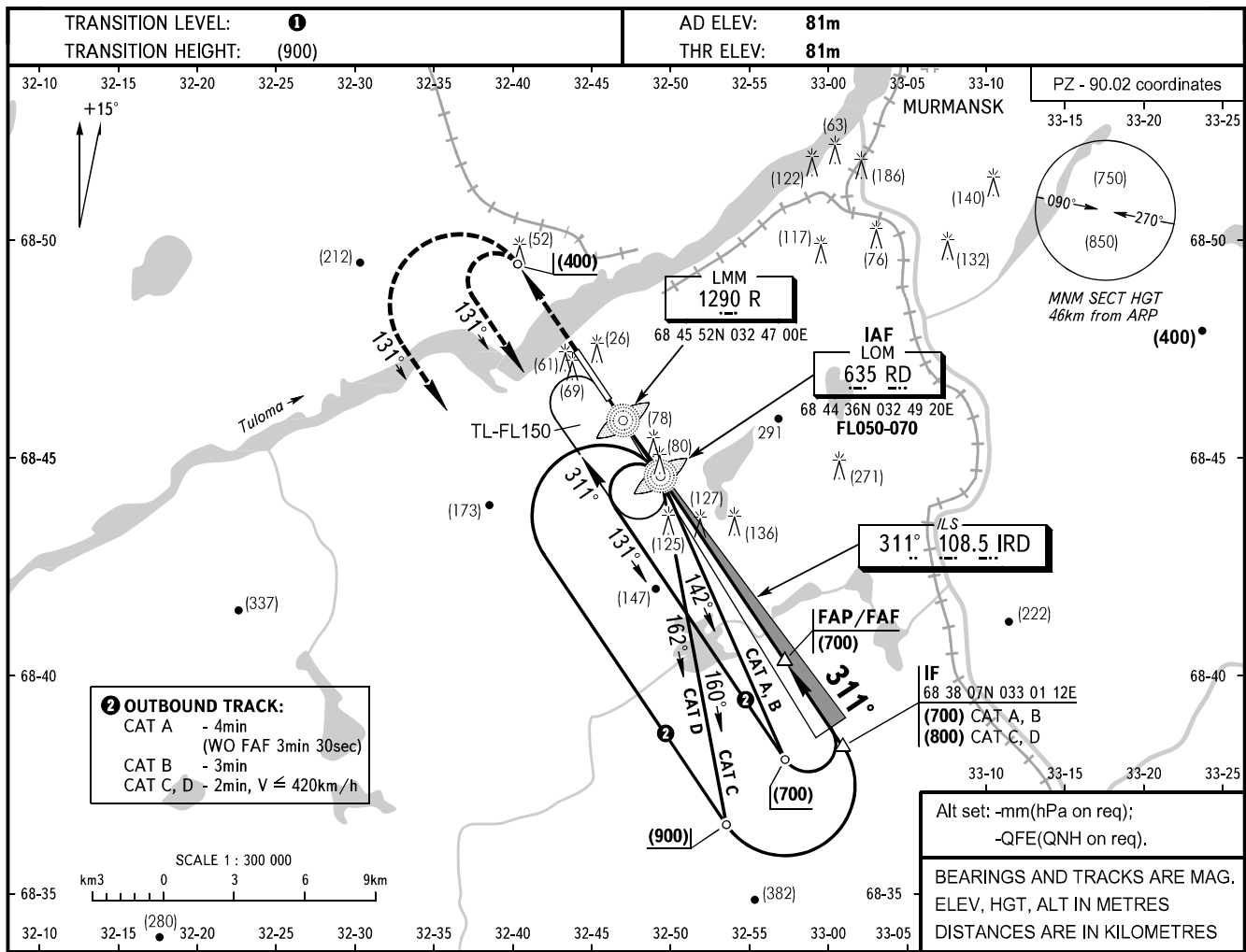


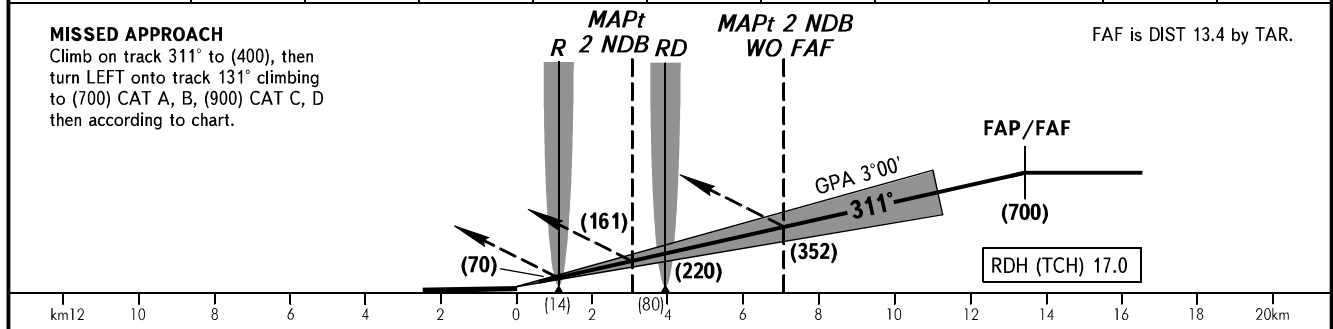
**INSTRUMENT  
APPROACH  
CHART - ICAO**

TOWER **120.300**

**MURMANSK, RUSSIA**  
MURMANSK  
ILS, 2 NDB RWY 31



THR DISTANCE	1	2	3	4	5	6	7	8	9	10
ALTITUDE	150	200	255	305	360	410	460	515	565	620
HEIGHT	(70)	(120)	(175)	(225)	(275)	(330)	(380)	(430)	(485)	(535)



OCA/H		A	B	C	D							
Straight-in	ILS	137(56)	140(59)	143(62)	146(65)							
	2 NDB	242(161)	242(161)	242(161)	242(161)							
Approach	2 NDB WO FAF	433(352)	433(352)	433(352)	433(352)							
GROUND SPEED	km/h	150	180	210	240	270	300	330	360	390	420	450
LOM-THR 3940m	min:sec	1.35	1.19	1.08	1.00	0.53	0.47	0.44	0.39	0.36	0.34	0.32
RATE OF DESCENT (Grad 5.2%)	m/s	2.2	2.6	3.1	3.5	4.0	4.4	4.8	5.3	5.6	6.1	6.6

**1** TRANSITION LEVEL:  
 - FL050 when atmospheric pressure is 753mm mercury column or above;  
 - FL060 when atmospheric pressure is 753-726mm mercury column;  
 - FL070 when atmospheric pressure is 726mm mercury column or less.