

## ENR-3.2.6 "T" ROUTES

## 1. NAVIGATION SPECIFICATION

RNAV routes in Republic of Kazakhstan require RNAV 5 capability. Supported sensors are VOR/DME, INS/IRS, GNSS or their combination.

Route designator		[Route Usage Notes]					
Significant Point Name		Significant point coordinates Reference VOR/DME ID Bearing and distance DME Elevation				Remarks	
(RNAV / RNP Type)	Track MAG	Dist	Upper limit Lower limit	FL series		Controlling unit {Airspace class} Remarks	
				↓	↑		
T522 (RNAV 5)							
▲ ARKALYK DVOR/ DME (ARK)		501904N 0670118E					
	346° 164°	126.6 NM	FL 510 FL 120	Even	Odd	ASTANA ACC 133.1 MHZ {C}	
△ LATKO		522508N 0664427E KTU 229.0° 118.6 NM (900 FT)					
	354° 173°	53.5 NM	FL 510 FL 120	Even	Odd	ASTANA ACC 132.8 MHZ {C}	
▲ BAVAG		531819N 0665235E KTU 256.0° 98.6 NM (900 FT)					
	347° 166°	88.3 NM	FL 510 FL 120	Even	Odd	ASTANA ACC 132.8 MHZ {C}	
▲ BEBLU (FIR BDRY)		544630N 0665030E PSK 256.0° 82.6 NM (500 FT)					For continuation, see AIP Russia

Route designator	[Route Usage Notes]					
Significant Point Name	Significant point coordinates Reference VOR/DME ID Bearing and distance DME Elevation					Remarks
(RNAV / RNP Type)	Track MAG	Dist	Upper limit Lower limit	FL series		Controlling unit {Airspace class} Remarks
				↓	↑	
<b>T523</b> <b>(RNAV 5)</b>						
▲ KARAGANDA DVOR/DME (KRG)	494114N 0732226E					

Route designator		[Route Usage Notes]				
Significant Point Name		Significant point coordinates Reference VOR/DME ID Bearing and distance DME Elevation				Remarks
(RNAV / RNP Type)	Track MAG	Dist	Upper limit Lower limit	FL series		Controlling unit {Airspace class} Remarks
				↓	↑	
	299° 117°	53.7 NM	FL 510 FL 120	Even	Odd	ASTANA ACC 124.1 MHZ KARAGANDA TOWER 122.0 MHZ {C}
▲ BEDKA	501318N 0721545E KRG <b>297.0° 53.7 NM</b> (1800 FT)					
	298° 117°	53.7 NM	FL 510 FL 120	Even	Odd	ASTANA ACC 132.8 MHZ ASTANA APPROACH 124.6 MHZ {C}
△ LIGMO	504539N 0710837E AST <b>207.0° 18.2 NM</b> (1200 FT)					
	296° 116°	17.7 NM	FL 510 FL 120	Even	Odd	ASTANA ACC 132.8 MHZ ASTANA APPROACH 124.6 MHZ {C}
△ APTUS	505558N 0704601E AST <b>251.0° 25.6 NM</b> (1200 FT)					
	294° 113°	37.3 NM	FL 510 FL 120	Even	Odd	ASTANA ACC 132.8 MHZ ASTANA APPROACH 124.6 MHZ {C}
△ KODOL	511638N 0695651E AST <b>276.0° 58.5 NM</b> (1200 FT)					
	296° 114°	72.5 NM	FL 510 FL 120	Even	Odd	ASTANA ACC 132.8 MHZ {C}
▲ ATBAN	515824N 0682152E KTU <b>197.0° 94.6 NM</b> (900 FT)					

Route designator	[Route Usage Notes]					
Significant Point Name	Significant point coordinates Reference VOR/DME ID Bearing and distance DME Elevation				Remarks	
(RNAV / RNP Type)	Track MAG	Dist	Upper limit Lower limit	FL series		Controlling unit {Airspace class} Remarks
				↓	↑	
T524 (RNAV 5)						

Route designator		[Route Usage Notes]					
Significant Point Name		Significant point coordinates Reference VOR/DME ID Bearing and distance DME Elevation				Remarks	
(RNAV / RNP Type)	Track MAG	Dist	Upper limit Lower limit	FL series		Controlling unit {Airspace class} Remarks	
				↓	↑		
▲ USUGA		433600N 0761934E ATA <b>287.3° 35.8 NM (2200 FT)</b>					
	289° 108°	31.5 NM	FL 510 FL 120	Even	Odd	ALMATY ACC 131.4 MHZ ALMATY APPROACH 124.8 MHZ {C}	
△ BEKRO		434850N 0753952E ATA <b>288.4° 67.3 NM (2200 FT)</b>					
	288° 107°	45.2 NM	FL 510 FL 120	Even	Odd	ALMATY ACC 131.4 MHZ {C}	
▲ BOBRO (FIR BDRY)		440648N 0744228E ATA <b>288.9° 112.5 NM (2200 FT)</b>					
	287° 107°	33.9 NM	FL 510 FL 120	Even	Odd	SHYMKENT ACC 132.7 MHZ In case of possible VHF radio communication failure at FL120– FL190, the aircraft crew is recommended to: - establish communication via other aircraft; - use HF radio to relay messages through “Approach” on frequencies 4744 kHz. - if HF radio equipment is not available on board, plan the flight using alternative routes. {C}	
▲ ALAKO		441958N 0735903E ATA <b>289.1° 146.4 NM (2200 FT)</b>					
	287° 103°	150.3 NM	FL 510 FL 120	Even	Odd	SHYMKENT ACC 132.7 MHZ {C}	
▲ PABRI (FIR BDRY)		451455N 0704239E TAR <b>344.0° 144.8 NM (2200 FT)</b>					

Route designator	[Route Usage Notes]					
Significant Point Name	Significant point coordinates Reference VOR/DME ID Bearing and distance DME Elevation					Remarks
(RNAV / RNP Type)	Track MAG	Dist	Upper limit Lower limit	FL series		Controlling unit {Airspace class} Remarks
				↓	↑	
T586 (RNAV 5)						
▲ ALABA	481845N 0553938E <b>AKB</b> <b>196.0° 131.5 NM</b> <b>(700 FT)</b>					
	049° 229°	25.4 NM	FL 510 FL 120	Odd	Even	AKTOBE ACC 129.6 MHZ In case of possible VHF radio communication failure at FL 120–FL 190, the aircraft crew is recommended to: - establish communication via other aircraft; - use HF radio to relay messages through “Aktobe Tower” on frequencies 4656 kHz in accordance with ATC unit operational procedures; - if HF radio equipment is not available on board, plan the flight using alternative routes. {C}
△ LOGTO	483204N 0561202E <b>AKB</b> <b>189.0° 110.7 NM</b> <b>(700 FT)</b>					
	048° 229°	96.1 NM	FL 510 FL 120	Odd	Even	AKTOBE ACC 129.6 MHZ {C}
△ KEKUN	492143N 0581653E <b>AKB</b> <b>131.0° 69.0 NM</b> <b>(700 FT)</b>					
	050° 230°	41.4 NM	FL 510 FL 120	Odd	Even	AKTOBE ACC 129.6 MHZ {C}
△ ENETO	494223N 0591154E <b>AKB</b> <b>103.0° 84.9 NM</b> <b>(700 FT)</b>					
	050° 231°	38.5 NM	FL 510 FL 120	Odd	Even	AKTOBE ACC 129.6 MHZ {C}
△ KESOT	500111N 0600343E <b>AKB</b> <b>088.0° 112.1 NM</b> <b>(700 FT)</b>					
	051° 231°	45.4 NM	FL 510 FL 120	Odd	Even	AKTOBE ACC 129.6 MHZ {C}
△ BESOL	502254N 0610548E <b>AKB</b> <b>078.0° 150.7 NM</b> <b>(700 FT)</b>					
	051° 232°	37.8 NM	FL 510 FL 120	Odd	Even	AKTOBE ACC 129.6 MHZ {C}

Route designator		[Route Usage Notes]						
Significant Point Name		Significant point coordinates Reference VOR/DME ID Bearing and distance DME Elevation					Remarks	
(RNAV / RNP Type)	Track MAG	Dist	Upper limit Lower limit	FL series		Controlling unit {Airspace class} Remarks		
				↓	↑			
▲ RAVNI (FIR BDRY)	504030N 0615807E <b>KST</b> <b>188.0° 162.1 NM</b> <b>(600 FT)</b>							
	047° 228°	52.1 NM	FL 510 FL 120	Odd	Even	ASTANA ACC 133.1 MHZ {C}		
△ GUMGA	510752N 0630806E <b>KST</b> <b>175.0° 124.7 NM</b> <b>(600 FT)</b>							
	047° 228°	46.5 NM	FL 510 FL 120	Odd	Even	ASTANA ACC 133.1 MHZ {C}		
△ NARUR	513200N 0641130E <b>KST</b> <b>155.0° 102.0 NM</b> <b>(600 FT)</b>							
	049° 230°	25.1 NM	FL 510 FL 120	Odd	Even	ASTANA ACC 133.1 MHZ {C}		
△ KUSUM	514420N 0644639E <b>KST</b> <b>141.0° 97.8 NM</b> <b>(600 FT)</b>							
	049° 230°	83.4 NM	FL 510 FL 120	Odd	Even	ASTANA ACC 133.1 MHZ {C}		
△ LATKO	522508N 0664427E <b>KTU</b> <b>229.0° 118.6 NM</b> <b>(900 FT)</b>							
	050° 230°	23.9 NM	FL 510 FL 120	Odd	Even	ASTANA ACC 133.1 MHZ {C}		
▲ MONEG	523627N 0671849E <b>KTU</b> <b>229.0° 94.7 NM</b> <b>(900 FT)</b>							
	050° 231°	50.2 NM	FL 510 FL 120	Odd	Even	ASTANA ACC 132.8 MHZ {C}		
△ LALKA	530017N 0683140E <b>KTU</b> <b>230.0° 44.5 NM</b> <b>(900 FT)</b>							
	050° 231°	44.5 NM	FL 510 FL 120	Odd	Even	ASTANA ACC 132.8 MHZ KOKSHETAU TOWER 127.9 MHZ {C}		
▲ KOKSHETAU VOR/DME (KTU)	532103N 0693701E							
	052° 233°	41.9 NM	FL 510 FL 120	Odd	Even	ASTANA ACC 132.8 MHZ KOKSHETAU TOWER 127.9 MHZ {C}		

Route designator	[Route Usage Notes]				
Significant Point Name	Significant point coordinates Reference VOR/DME ID Bearing and distance DME Elevation				Remarks
(RNAV / RNP Type)	Track MAG	Dist	Upper limit Lower limit	FL series ↓   ↑	Controlling unit {Airspace class} Remarks
△ ADEBA	533925N 0704004E <b>KTU</b> <b>053.0° 41.9 NM</b> <b>(900 FT)</b>				
	052° 233°	34.0 NM	FL 510 FL 120	Odd   Even	ASTANA ACC 132.8 MHZ {C}
△ PETOR	535420N 0713136E <b>KTU</b> <b>053.0° 75.9 NM</b> <b>(900 FT)</b>				
	052° 233°	34.6 NM	FL 510 FL 120	Odd   Even	ASTANA ACC 132.8 MHZ {C}
▲ DAKIN (FIR BDRY)	540930N 0722418E <b>KTU</b> <b>053.0° 110.5 NM</b> <b>(900 FT)</b>				<b>For continuation, see AIP Russia</b>

Route designator	[Route Usage Notes]				
Significant Point Name	Significant point coordinates Reference VOR/DME ID Bearing and distance DME Elevation				Remarks
(RNAV / RNP Type)	Track MAG	Dist	Upper limit Lower limit	FL series ↓   ↑	Controlling unit {Airspace class} Remarks
<b>T649</b> <b>(RNAV 5)</b>					
▲ KARAGANDA DVOR/DME (KRG)	494114N 0732226E				
	049° 230°	43.3 NM	FL 510 FL 120	Odd   Even	ASTANA ACC 124.1 MHZ KARAGANDA TOWER 122.0 MHZ {C}
△ GOLTU	500404N 0741911E KRG <b>050.0° 43.2 NM</b> <b>(1800 FT)</b>				
	049° 230°	37.7 NM	FL 510 FL 120	Odd   Even	ASTANA ACC 124.1 MHZ {C}
△ BODNU	502346N 0750918E KRG <b>050.0° 81.0 NM</b> <b>(1800 FT)</b>				
	051° 231°	19.2 NM	FL 510 FL 120	Odd   Even	ASTANA ACC 124.1 MHZ {C}

Route designator		[Route Usage Notes]					
Significant Point Name		Significant point coordinates Reference VOR/DME ID Bearing and distance DME Elevation				Remarks	
(RNAV / RNP Type)	Track MAG	Dist	Upper limit Lower limit	FL series		Controlling unit {Airspace class} Remarks	
				↓	↑		
▲ ODAMA		503331N 0753513E KRG <b>051.0° 100.2 NM</b> (1800 FT)					
	051° 232°	44.0 NM	FL 510 FL 120	Odd	Even	ASTANA ACC 132.8 MHZ {C}	
△ GOBSO		505523N 0763521E PVL <b>184.0° 79.6 NM</b> (500 FT)					
	052° 232°	31.1 NM	FL 510 FL 120	Odd	Even	ASTANA ACC 132.8 MHZ {C}	
△ GALKI		511035N 0771814E PVL <b>164.0° 62.6 NM</b> (500 FT)					
	052° 233°	42.1 NM	FL 510 FL 120	Odd	Even	ASTANA ACC 132.8 MHZ {C}	
△ ABDAM		513051N 0781707E PVL <b>125.0° 60.9 NM</b> (500 FT)					
	053° 234°	40.8 NM	FL 510 FL 120	Odd	Even	ASTANA ACC 132.8 MHZ {C}	
▲ LAGMO (FIR BDRY)		514954N 0791500E PVL <b>098.0° 83.0 NM</b> (500 FT)				For continuation, see AIP Russia	

Route designator		[Route Usage Notes]				
Significant Point Name	Significant point coordinates Reference VOR/DME ID Bearing and distance DME Elevation				Remarks	
(RNAV / RNP Type)	Track MAG	Dist	Upper limit	FL series		Controlling unit {Airspace class} Remarks
			Lower limit	↓	↑	
T916 (RNAV 5)						
▲ BALUN (FIR BDRY)		420100N 0512742E <b>AKT</b> <b>163.0° 112.7 NM</b> <b>(100 FT)</b>				
	050°	111.6 NM	<div>FL 510 FL 250</div>	Odd		AKTOBE ACC 119.8 MHZ {C}

Route designator	[Route Usage Notes]				
Significant Point Name	Significant point coordinates Reference VOR/DME ID Bearing and distance DME Elevation				Remarks
(RNAV / RNP Type)	Track MAG	Dist	Upper limit Lower limit	FL series ↓   ↑	Controlling unit {Airspace class} Remarks
△ ARNUS	430052N 0533509E <b>AKT</b> <b>107.0° 121.6 NM</b> <b>(100 FT)</b>				
	077°	106.5 NM	FL 510 FL 250	Odd	AKTOBE ACC 119.8 MHZ {C}
▲ KUNAS (FIR BDRY)	430923N 0560000E <b>BNU</b> <b>156.0° 136.4 NM</b> <b>(0 FT)</b>				

Route designator	[Route Usage Notes]				
Significant Point Name	Significant point coordinates Reference VOR/DME ID Bearing and distance DME Elevation				Remarks
(RNAV / RNP Type)	Track MAG	Dist	Upper limit Lower limit	FL series ↓   ↑	Controlling unit {Airspace class} Remarks
<b>T916</b> (RNAV 5)					
▲ AKALI (FIR BDRY)	440829N 0611937E <b>ARL</b> <b>175.0° 161.5 NM</b> <b>(300 FT)</b>				
	078°	12.9 NM	FL 510 FL 250	Odd	SHYMKENT ACC 127.3 MHZ {C}
△ FAZUL	440916N 0613731E <b>ARL</b> <b>171.0° 160.3 NM</b> <b>(300 FT)</b>				
	079°	29.4 NM	FL 510 FL 250	Odd	SHYMKENT ACC 127.3 MHZ {C}
△ TOZLI	441054N 0621817E <b>KZO</b> <b>251.0° 143.4 NM</b> <b>(500 FT)</b>				
	080°	37.4 NM	FL 510 FL 250	Odd	SHYMKENT ACC 127.3 MHZ {C}
△ ZURGO	441233N 0631012E <b>KZO</b> <b>248.0° 106.9 NM</b> <b>(500 FT)</b>				
	081°	43.2 NM	FL 510 FL 250	Odd	SHYMKENT ACC 127.3 MHZ {C}
△ ERTUZ	441307N 0641019E <b>KZO</b> <b>238.0° 66.3 NM</b> <b>(500 FT)</b>				



Route designator	[Route Usage Notes]				
Significant Point Name	Significant point coordinates Reference VOR/DME ID Bearing and distance DME Elevation				Remarks
(RNAV / RNP Type)	Track MAG	Dist	Upper limit Lower limit	FL series ↓      ↑	Controlling unit {Airspace class} Remarks
	079°	28.0 NM	FL 510 FL 120	Odd	SHYMKENT ACC 127.3 MHZ {C}
△ DILNA	441450N 0644911E <b>KZO</b> <b>222.0° 41.8 NM</b> <b>(500 FT)</b>				
	080°	69.4 NM	FL 510 FL 150	Odd	SHYMKENT ACC 127.3 MHZ {C}
△ GITIM	441752N 0662540E <b>KZO</b> <b>116.0° 44.1 NM</b> <b>(500 FT)</b>				
	082°	47.3 NM	FL 510 FL 120	Odd	SHYMKENT ACC 127.3 MHZ {C}
△ BIMDO	441809N 0673135E <b>TRK</b> <b>315.0° 74.3 NM</b> <b>(1000 FT)</b>				
	078°	59.9 NM	FL 510 FL 120	Odd	SHYMKENT ACC 127.3 MHZ {C}
▲ TUROK	442214N 0685447E <b>TRK</b> <b>007.0° 64.3 NM</b> <b>(1000 FT)</b>				
	087°	60.8 NM	FL 510 FL 120	Odd	SHYMKENT ACC 132.7 MHZ {C}
△ INLIG	441743N 0701919E <b>TAR</b> <b>328.0° 94.9 NM</b> <b>(2200 FT)</b>				
	088°	46.4 NM	FL 510 FL 120	Odd	SHYMKENT ACC 132.7 MHZ {C}
△ MIHOS	441332N 0712336E <b>TAR</b> <b>358.0° 81.4 NM</b> <b>(2200 FT)</b>				
	089°	68.4 NM	FL 510 FL 120	Odd	SHYMKENT ACC 132.7 MHZ {C}
△ INDAG	440635N 0725812E <b>TAR</b> <b>038.0° 104.8 NM</b> <b>(2200 FT)</b>				

Route designator	[Route Usage Notes]				
Significant Point Name	Significant point coordinates Reference VOR/DME ID Bearing and distance DME Elevation				Remarks
(RNAV / RNP Type)	Track MAG	Dist	Upper limit Lower limit	FL series ↓      ↑	Controlling unit {Airspace class} Remarks
	090°	67.0 NM	FL 510 FL 120	Odd	SHYMKENT ACC 132.7 MHZ In case of possible VHF radio communication failure at FL 120–FL 190, the aircraft crew is recommended to: - establish communication via other aircraft; - use HF radio to relay messages through “Approach” on frequencies 4744 kHz. - if HF radio equipment is not available on board, plan the flight using alternative routes. {C}
▲ LONSI (FIR BDRY)	435826N 0743022E <b>ATA</b> <b>284.0° 117.9 NM</b> <b>(2200 FT)</b>				
	091°	65.5 NM	FL 510 FL 250	Odd	ALMATY ACC 131.4 MHZ {C}
△ REGMU	435005N 0760012E <b>ATA</b> <b>295.6° 54.6 NM</b> <b>(2200 FT)</b>				
	094°	52.3 NM	FL 510 FL 250	Odd	ALMATY ACC 131.4 MHZ {C}
△ NIGET	434124N 0771126E <b>ATA</b> <b>008.5° 19.5 NM</b> <b>(2200 FT)</b>				
	095°	38.8 NM	FL 510 FL 250	Odd	ALMATY ACC 131.4 MHZ {C}
△ PIGAL	433428N 0780356E <b>ATA</b> <b>068.9° 44.5 NM</b> <b>(2200 FT)</b>				