



**PROPOSED RNAV ROUTE**

**ORIGIN-** PAR - Parana VOR - Buenos Aires - Argentina  
**DESTINATION-** URSUS - Miami - USA

Route Points	Fix Coordinates			Geo. Heading	Distance	Cumulate Distance	Special Use Area	NOTES
	latitude	longitude						
PAR	S 31	48.50	W 60	29.20				
SACU	S 30	56.26	W 60	49.38	342	55		Entering Cordoba FIR
SLLF	S 22	9.34	W 64	0.03	341	554		Entering La Paz FIR
SBPH	S 10	33.33	W 67	37.81	343	727		Entering Porto Velho FIR
RBR	S 9	59.80	W 67	47.90	343	35		Rio Branco VOR
SKED	S 3	27.24	W 69	47.24	343	410		Entering Bogota FIR
PABON	S 2	42.50	W 70	0.80	343	47		Fix
Equator	N 0	0.00	W 70	52.93	342	171		Crossing Equator
SKEC	N 8	13.36	W 73	32.22	342	518		Entering Barranquilla FIR
MKJK	N 15	0.00	W 75	48.70	342	428		Entering Kingston FIR
MUFH	N 19	27.24	W 77	22.78	342	282		Entering Havana FIR
URSUS	N 24	0.00	W 79	0.56	342	287		Entering Miami Oceanic FIR

Distance conventional route..... 3,555.8 Based in route EZE UA300 GUA UA301 URSUS  
 Distance proposed route..... 3,513.4  
 Distance saved ..... 42.4

**BENEFIT ANALYSIS ON PROPOSED RNAV ROUTE**

Time saved in minutes per flight 5.7 Based on M 0.80, no wind component, FL300 and standard temperature

acft type	block hour cost	flights per week	hours saved per year	cost year saving per acft
B747 200	\$11,940.00	14	68.85	\$822,088
B767-300	\$4,044.00	20	98.36	\$397,766
B777-200	\$4,602.00	42	206.55	\$950,566
MD-11	\$9,613.00	14	68.85	\$661,871
Total saving in this route per year in USA dollars .....				\$2,832,291

- a) Total number of aircraft per week in both directions
- c) The block hour cost consists of possession, crew cost, fuel, oil, maintenace, parts, insurance etc ....
- d) includes flights from CHI and ATL to/from BUE

## PROPOSED RNAV ROUTE

**ORIGIN-** BGC Braganza - Sao Paulo - Brazil  
**DESTINATION-** CHAMP - New York - USA

Route Points	Fix Coordinates						Geo. Heading	Distance	Cumulate Distance	Special Use Area	NOTES
	latitude	longitude									
BGC	S	22	57.10	W	46	34.10					
SBMU	S	10	13.40	W	51	38.62	338	817	817.3	SB(R)601	Entering Manaus FIR
equator	S	0	0.00	W	55	23.53	340	653	1470.2		Crossing equator
SMPM	N	1	50.91	W	56	3.76	340	118	1588.2		Entering Suriname FIR
SYGC	N	5	11.46	W	57	16.79	340	213	1801.6		Entering Georgetown FIR
TTZP	N	8	55.05	W	58	39.46	340	238	2039.7		Entering Piarco FIR
ANU	N	17	7.60	W	61	47.90	340	526	2565.3		V.C. Bird VOR
TJZS	N	17	55.29	W	62	4.41	342	50	2615.5		Entering San Juan Oceanic
KZNY	N	23	30.00	W	64	5.25	342	353	2968.8		Entering New York Oceanic
PRUIT	N	29	48.60	W	66	33.50	341	401	3369.9		Fix
CHAMP	N	37	31.00	W	71	40.90	332	528	3898.1		Fix

Distance conventional route..... 3,954.0 Based in route BGC BRS UA312 TIM UA324 POS UG449 ANADA G449 DDP A300 CHAMP  
 Distance proposed route..... 3,898.1  
 Distance saved ..... 55.9

## BENEFIT ANALYSIS ON PROPOSED RNAV ROUTE

Time saved in minutes per flight 7.5 Based on M 0.80, no wind component, FL300 and standard temperature

acft type	block hour cost	flights per week	hours saved per year	cost year saving per acft
B767-200	\$3,834.00	22	142.08	\$544,718
B767-300	\$4,044.00	28	180.82	\$731,250
B767-400	\$4,100.00	14	90.41	\$370,688
B747-400	\$10,104.00	8	51.66	\$522,012
MD-11	\$10,574.00	21	135.62	\$1,434,021
Total saving in this route per year in USA dollars .....				\$3,602,690

- a) Total number of aircraft per week in both directions  
 c) The block hour cost consists of possession, crew cost, fuel, oil, maintenace, parts, insurance etc ....

## PROPOSED RNAV ROUTE

**ORIGIN-** CPN - Campinas VOR - Sao Paulo - Brazil  
**DESTINATION-** PPE - Peñasco (Punta Peñasco) VOR - to LAX VOR Los Angeles - USA

Route Points	Fix Coordinates						Geo. Heading	Distance	Cumulate Distance	Special Use Area	NOTES
	latitude	longitude									
CPN	S	23	0.50	W	47	7.70					
SBCW	S	20	21.70	W	50	32.20	309	248	247.6		Entering Curitiba FIR
SBBC	S	17	30.10	W	54	1.70	310	262	509.7		Entering Cuiba FIR
SBPH	S	14	4.90	W	57	57.40	312	306	815.6		Entering Porto Velho FIR
SKED	S	3	0.40	W	69	42.50	313	962	1777.9		Entering Bogota FIR
PABON	S	2	42.50	W	70	0.80	314	26	1803.5		Fix
Equator	N	0	0.00	W	72	54.70	313	238	2041.4		Crossing Equator
MPZL	N	5	53.70	W	79	14.90	313	519	2560.2		Entering Panama FIR
MHTG	N	9	15.30	W	82	56.10	313	298	2858.1		Entering Cenamer FIR
MMID	N	16	4.30	W	90	51.30	312	618	3476.1		Entering Merida FIR
MMMXX	N	19	23.70	W	95	1.80	311	311	3787.0		Entering Mexico FIR
MMTY	N	23	28.50	W	100	33.20	309	394	4180.7		Entering Monterrey FIR
MMZT	N	28	33.90	W	108	30.00	307	526	4706.6		Entering Mazatlan FIR
PPE	N	31	21.20	W	113	31.10	304	310	5016.5		Puerto Peñasco

Distance conventional route..... 5,078.1 Based in route CNP to PPE UL5 SAMPA UW10 CIA UB554 RBR UA321 IQT UA565 QIT UG439  
 Distance proposed route..... 5,016.5 ..... ESV UL318 IZT UJ47 PBC UJ33 QET UJ5 HMO  
 Distance saved ..... 61.6

## BENEFIT ANALYSIS ON PROPOSED RNAV ROUTES

Time saved in minutes per flight 8.2 Based on M 0.80, no wind component, FL300 and standard temperature

acft type	block hour cost	flights per week	hours saved per year	cost year saving per acft
B747-400	\$10,104.00	8	56.97	\$575,591
MD-11	\$10,574.00	15	106.81	\$1,129,435
B767-300	\$4,044.00	12	85.45	\$345,560
Total saving in this route per year in USA dollars .....				\$2,050,586

- a) Total number of aircraft per week in both directions  
 c) The block hour cost consists of possession, crew cost, fuel, oil, maintenace, parts, insurance etc ....

## PROPOSED RNAV ROUTE

**ORIGIN-** EZE - Ezeiza VOR - Buenos Aires - Argentina  
**DESTINATION-** CHAMP - New York - USA

Route Points	Fix Coordinates						Geo. Heading	Distance	Cumulate Distance	Special Use Area	NOTES
	latitude	longitude									
EZE	S	34	49.60	W	58	32.00					
SARU	S	30	21.03	W	59	31.15	349	273	273.1		Entering Rosario FIR
SGFA	S	23	52.33	W	60	46.19	350	394	667.5		Entering Asuncion FIR
SLLF	S	19	36.77	W	61	34.79	350	260	927.0		Entering la Paz FIR
SBPH	S	12	58.60	W	62	41.57	351	403	1330.3		Entering Porto Velho FIR
SBMU	S	5	16.70	W	63	57.19	351	468	1798.2		Entering Manaus FIR
equator	S	0	0.00	W	64	47.15	351	321	2118.8		Crossin Equator
SVZM	N	1	10.41	W	64	58.14	351	71	2190.1	SV(R) 2533	Entering Maiquetia FIR
TNCF	N	15	0.91	W	67	12.48	351	841	3031.1		Entering Curacao FIR
TJZS	N	15	46.82	W	67	19.96	351	46	3077.6		Entering San Juan FIR
KZMA	N	20	39.86	W	68	11.74	351	297	3374.7		Entering Miami FIR
KZNY	N	23	54.56	W	68	48.17	350	198	3572.3		Entering New York FIR
CHAMP	N	37	31.00	W	71	40.90	350	830	4402.0		Fix

Distance conventional route..... 4,454.2 Based in route UA300 GUA UA301 SIS UL317 SGC UL309 MIQ UG432 SILVA G432 DDP A300  
 Distance proposed route..... 4,402.0  
 Distance saved ..... 52.2

## BENEFIT ANALYSIS ON PROPOSED RNAV ROUTE

Time saved in minutes per flight 7.0 Based on M 0.80, no wind component, FL300 and standard temperature

acft type	block hour cost	flights per week	hours saved per year	cost year saving per acft
B747 200	\$12,940.00	4	24.11	\$312,035
B777-200	\$4,602.00	14	84.40	\$388,404
B767-300	\$4,044.00	14	84.40	\$341,310
A340-200 *	\$5,000.00	6	36.17	\$180,855
Total saving in this route per year in USA dollars .....				\$1,222,604

- a) Total number of aircraft per week in both directions
- c) The block hour cost consists of possession, crew cost, fuel, oil, maintenace, parts, insurance etc ....
- d) Block hour cost A340 is estimated

## PROPOSED RNAV ROUTE

**ORIGIN-** MIQ - Maiquetia VOR - Caracas - Venezuela  
**DESTINATION-** HOB - Hobby VOR - Houston Texas - USA

Route Points	Fix Coordinates						Geo. Heading	Distance	Cumulate Distance	Special Use Area	NOTES
	latitude	longitude									
MIQ	N	10	36.70	W	66	59.20					
TNCF	N	11	24.75	W	67	58.11	310	75	75.2		Entering Curacao FIR
MKJK	N	16	5.70	W	73	54.25	310	446	520.7	TN(R)3	Entering Kingston FIR
MUFH	N	20	0.00	W	79	14.67	308	384	905.0		Entering Havana FIR
KZMA	N	24	0.00	W	85	16.08	307	412	1317.1		Entering Miami Oceanic FIR
KZHU	N	24	27.37	W	86	0.00	304	49	1365.6		Entering Houston FIR
HUB	N	29	39.00	W	95	16.70	304	585	1950.8	W92 W147B W59A	Crossin Equator

Distance conventional route..... 2,062.3 Based in route MARES1.MARES ATONO UA315 PJG UA574 ABA UG442 MLY UA511 MBJ UG633  
 Distance proposed route..... 1,950.8 GCM UR640 CZM UA626 MIXUN UT11 AMIPI B753 MAEKO A649 KELPP  
 Distance saved ..... 111.5

## BENEFIT ANALYSIS ON PROPOSED RNAV ROUTE

Time saved in minutes per flight 14.9 Based on M 0.80, no wind component, FL300 and standard temperature

acft type	block hour cost	flights per week	hours saved per year	cost year saving per acft
B757-200	\$3,022.00	14	180.35	\$545,010
B737 NG	\$2,123.00	18	231.88	\$492,271
Total saving in this route per year in USA dollars -----				\$1,037,281

- a) Total number of aircraft per week in both directions  
 c) The block hour cost consists of possession, crew cost, fuel, oil, maintenace, parts, insurance etc ....