ENR 4. RADIO NAVIGATION AIDS / SYSTEMS

ENR 4.1 RADIO NAVIGATION AIDS -EN-ROUTE

Name of Station (VOR/VAR)	*ID*	*FREQ (CH)*	*Hours of Operation*	*Coordinates*	*ELEV DME antenna*	*Remarks*
1	2	3	4	5	6	7
NDB ADAMI ()	ASI	395 KHZ	H24	344722.3S 0561546.9W		
VOR/DME CARRASCO (7º59'W)	CRR	116.9 MHZ	H24	344957.8S 0560130.5W	30 M	
VOR/DME DURAZNO (9º06W)	DUR	117.5 MHZ (CH 122X)	H24	332122.5S 0562945.8W	90 M	
VOR/DME CURBELO (9º24'W)	LDS	117.6 MHZ (CH 123X)	H24	345129.9S 0550530.2W	30 M	
VOR MELO (11º06'W)	MLO	114.3 MHZ	H24	322032.8S 0541319.1W		
VOR SALTO (8º48'W)	STO	117.9 MHZ	H24	312605.0S 0575903.3W		
VOR TACUAREMBÓ (10º18'W)	TMB	112.6 MHZ	H24	314501.0S 0555525.9W		

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ENR 4.2 SPECIAL NAVIGATION SYSTEMS

Name Of Station (ID) or chain	*Type of SVC*	*Frequency*	*Hours of operation*	*Coordinates TRANS STN*	*Remarks*
1	2	3	4	5	6
Global Positioning System (GPS)	Satellital	L1 - 1575.42 MHZ L2 - 1227.60 MHZ	H24	-	Use authorized as ☛not unique en- ☛route navigation ☛aid and as primary navigation aid within oceanic airspace

☛ENR 4.2.1 GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS)

Global navigation satellite system (GNSS) is the generic name used by ICAO to define any overall range system to determine position and hour, which comprises one or more satellite constellation, onboard receivers and several integrity monitoring systems, including those appropriate augmentation devices to comply with the operational performance requirements.

(GPS) Global Positioning System description

a) Space segment
24 NAVSTAR satellites arranged in 6 orbital planes (four by plane) at 20,200 KM above the earth. Completing an orbit every 12 hours and are located so that a minimum of 4 satellites will be seen from a user anywhere in the world. Each satellite has high precision atomic clocks to synchronize messages, which are used by the onboard receivers to compute the distance to the user
b) Control segment
One Master Station, 5 monitoring stations and 3 antennas which monitor and control the satellite system
c) User segment
GPS onboard receiver. Knowing satellite positions, GPS could determine the exact location by measuring the delay that the signal takes to reach the receiver, converting that measure into distance. Four satellites measures will be required to obtain a 3 dimension (3D) navigation fix.

ONBOARD RECEIVER

a) For VFR use

Use limitations:
1.- If Receiver autonomous integrity monitoring (RAIM) is not available, it could not warn the pilot in case of a faulty satellite was sending erroneous signals;

2.- Inadequate antenna installation and absence of database unable to update itself could also disturb the proper signal reception; and

3.- Incorrect waypoints insertion also could cause navigation error.

These receptors have in their Operations Manual a Note:

FOR VFR USE ONLY

and should not be used, under any circumstances, for IFR flights

b) For IFR use

Approved IFR receivers must comply with requirements detailed in Federal Aviation Administration (FAA) Technical Standard Order TSO C-129a (TECHNICAL STANDARD ORDER TSO C-129a AIRBORNE SUPPLEMENTAL NAVIGATION EQUIPMENT USING THE GLOBAL POSITIONING SYSTEM) of 20 FEB 96 and must be installed according to FAA AC-20-138 (AIRWORTHINESS APPROVAL OF GPS NAVIGATION EQUIPMENT FOR USE AS A VFR AND IFR SUPPLEMENTAL NAVIGATION SYSTEM) of 25 MAY 94.

These receivers has the (Receiver Autonomous Integrity Monitoring - RAIM) function. This function detect the failure of a GPS signal by comparing position information and time obtained from varied 4 satellite combinations, from a joint of at least 5 satellites in sight.

If a faulty satellite is detected, the receiver warns pilot that the system is not appropriate for navigational use, must switch to traditional navigation methods.

A minimum of 6 satellites must be in sight if RAIM function is desirable, after detection and faulty satellite deactivation from navigation solution.

USE OF GPS WITHIN MONTEVIDEO FIR

1. ☛Within República Oriental del Uruguay jurisdictional airspace, GPS could be used as navigation **aid primary** ☛**not only** and as navigation **primary aid** within oceanic airspace.

OPERATIONAL REQUIREMENTS FOR GPS USE WITHIN URUGUAYAN OCEANIC AIRSPACE

1.1 For GPS use as primary navigation device within the República Oriental del Uruguay oceanic airspace, pilots must comply with the procedures and operation techniques described in the aircraft GPS IFR Receiver Manufacturer Operator Manual and with those described in N8110.60 / FAA.

1.2 Pilot in command should have the appropriate knowledge about:

a) Fundamentals of GPS navigation
   i. Software use
   ii. Hardware operations and GPS interfaces with other navigation systems
   iii. Data base update procedures
   iv. Equipment limitation
b) GPS operation
c) Before departure procedures
d) Enroute procedures
e) Emergency/contingency procedures

1.3 Uruguayan registered aircraft could use GPS as primary navigation device and, must have the airworthiness certificate issued by the competent authority.

☛ONBOARD EQUIPMENT

1.4 **☛GPS Double navigation system for oceanic flights.**

In accordance with ICAO Annex 6 to the Convention on International Civil Aviation, Chapter 7 Communication Equipment and Onboard Navigation, paragraph 7.2.4 and to the Notice N8110.60 of F.A.A., point 4 paragraph f, Performance Requirements, the aircraft must be equipped with double GPS navigation system which must comply with technical specifications detailed in paragraph 5.2 of that AIC.

1.5 **☛Technical specifications.**

GPS navigation systems used over oceanic airspace flights must comply with technical requirements specified in FAA Technical Standard Order C-129a (Airborne Supplemental Navigation Equipment Using the GPS) of 20 FEB 96, with those contained in Notice N8110.6 of FAA (GPS as a Primary Means of Navigation for Oceanic/Remote Operations) of 4 DEC 96 and must have been installed in accordance with FAA Circular AC-20-130a (Airworthiness Approval of Navigation or Flight Management System Integrating Multiple Navigation Sensors) and/or to Circular AC 20-138 of FAA (Airworthiness Approval of GPS Navigation Equipment for Use as a VFR and IFR Supplemental Navigation System) of 25 MAY 94, as appropriate.
In addition, the aircraft must have the GPS navigation systems connected with FMS, or Auto Pilot, or Flight Director.

☛ REQUIRED GPS SATELLITE GEOMETRY

1.6 **☛Overview**

GPS navigation accuracy depends mostly of satellite geometry related with the receiver.
A minimum of four satellites simultaneously over horizon to obtain a three dimension fix (3-D).
RAIM technique could be used if five satellites are in a proper position range with the receiver, so five independent positions could be calculated. If the information compared between them does not fit, the receiver deduces that one satellite is giving incorrect information, and a warning light turns on the equipment panel (failure detection).
If there are six or more satellites in range, more positions could be calculated and receiver could identify exactly which satellite fails and exclude it from position calculations (failure exclusion).
From the foregoing it is clear that pilots should take into consideration that if there are only four satellites in view of receiver in case of any defective, such failure will not be reported by the receiver.

1.7 **Procedures in case of GPS navigation failure**
(Ref. Order 8400.10 of FAA Appendix 4 HBAT 95-09 "Guidelines for Operational Approval of GPS to ☛Provide the Primary means of Class II Navigation in Oceanic and Remote Areas of Operation")

a) Lost of navigation function *(four satellites in sight or less)*
If GPS receiver indicates a lost of navigation warning, the pilot will use immediately dead reckoning navigation (D/R) until GPS navigation could be reestablished.

b) Lost of RAIM *(five satellites in sight or less)*
If GPS receiver indicates lost of RAIM, navigation integrity will be obtained by comparing GPS position with an extrapolated calculated position of last verified position against true airspeed, heading and estimated winds. If both positions do not fit within 10 NM, pilot will reassume immediately dead reckoning navigation (D/R) until the excluding function or navigation integrity reappear.

c) Fault detection warning *(less of 6 satellites in sight)*
If GPS receiver indicates a fault detection warning (faulty satellite), pilot could continue navigation by using positions obtained by GPS, if monitors continually the actual dead reckoning of position ambiguity which appears on GPS display and was obtained from Failure Detection and Exclusion algorithm (FDE). If that value exceed 10 NM or is not available, the pilot will immediately reassume dead reckoning navigation (D/R) until faulty satellite was excluded.
In that three examples, if navigate with GPS is not possible, the pilot will report to ATC **"GPS navigation lost"** and when reassume GPS navigation **"GPS navigation reestablished"**

FLIGHT PLAN

In the Flight Plan form blank 10 the letter "R" must be inserted. In blank 18 the following letters must be inserted NAV/GPS-RNAV when GPS IFR receivers are available for oceanic airspace flights.

DEFINITIONS

a) Algorithm
Step by step procedure to solve problems.

b) Augmentation
Technique that provides the system with input data (input) in addition to those derived from the(s) principal(s) constellation(s) in a new service to provide distance information, or corrections or improvements in input data. This allows the system to improve performance in relation to that be obtained only with the basic information (raw data) from the satellites.

c) Continuity
The ability of the whole system to perform its function without interruption during the planned period of operation. The risk of continuity is the probability that the system is interrupted and not provides guidance information for the proposed operation

d) ☛ (Fault Detection and Exclusion - FDE)
GPS equipment capability for:
1. Satellite failure detection which affects navigation, and
2. Possibility to exclude these satellite automatically from the navigation solution

e) ☛Availability
Percentage of time that services are usable navigation system.

f) ☛Integrity
Navigation system capability to send appropriate warnings to users when the system must not be used with navigation objectives.

g) Airborne Autonomous Integrity Monitoring - AAIM
Onboard augmentation technique which is enhanced by the availability of the navigation function. This includes the INS, who can impersonate the GNSS antennas when aircraft satellite equipment are masked or when there is sufficient number of satellites to reach a more accurate time reference, a particular combination of data entry sensor through filtering techniques, and so on.

h) ☛Receiver Autonomous Integrity Monitoring - RAIM
Onboard augmentation technique for which a receiver / processor determines the integrity of GPS navigation signals using only GPS signals or the signals augmented with altitude information. This determination is obtained through an ongoing monitoring of the received signals. At least one other satellite, in addition to those used for navigational purposes, should be available to the receiver to perform RAIM.

i) ☛Dead Reckoning - D/R
Navigation made only by means of calculations based on airspeed, course, heading, wind direction and speed, ground speed and elapsed time

j) ☛Accuracy
It is the ability of a navigation aid to warn the pilot that it has failed or is giving incorrect markings.

k) ☛Flight Management System - FMS
Interactive computer system and display navigation to assist the pilot in flight with maximum economy by a route previously planned, defined in terms of waypoints and altitude changes.

l) ☛Global Navigation Satellite System - GNSS
Global System for determining position and time, which includes one or more satellite constellations, receivers onboard monitoring systems and system integrity, augmented as necessary to support the required navigation performance for the actual phase of operations.

m) ☛Main navigation system
Navigation system approved for a given operation or phase of flight and must meet accuracy and integrity, but not with the availability and continuity. Security is achieved by limiting flights to specific time periods and with certain procedural restrictions.

n) Airborne-Based Augmentation System - ABAS
GPS Built-in receivers/processors augmentation system installed onboard the aircraft. Could be AAIM or RAIM type.

INFORMATION ABOUT GPS CONSTELLATION STATUS

Information about GPS NAVSTAR satellites constellation availability could be obtained by contact U.S. Coast Guard Center, internet address:

☛**http://www.navcen.uscg.gov/**

WARNING

It is the responsibility of the pilot in command of the aircraft which plans to conduct an oceanic airspace flight to verify their GPS receivers are in comply with FAA/TSO-129A, and are installed according to the AC 20-130A and / or 20-138 / FAA and meet the performance requirements of the N8110.60/FAA.
It will also be responsibility of the pilot in command to meet the other requirements of Chapter ENR 4.2 Global Navigation Satellite System (GNSS).
It should be understood that República Oriental del Uruguay is not responsible for the continuity of the GPS signals

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ENR 4.3 NAME-CODE DESIGNATORS FOR SIGNIFICANT POINTS

Name-code designator	*Coordinates*	*ATS routes or other routes*
1	2	3
AKNUS	341927.96S 0575012.96W	SUCA IAC RNAV (GNSS) 13
AKPOD	322757S 0533341W	UM540 SUMU SID RWY 06 AKPOD 1B
AKRUT	344828.13S 0555850.27W	SUMU SID RWY 06 AKPOD1B y DAGUS1A
AKSET	342848.96S 0575552.98W	SUCA IAC RNAV (GNSS) 13
AKVAL	345449.49S 0560147.46W	SUMU IAC RNAV (GNSS) 01
ALBES	332209.24S 0564234.20W	SUDU IAC RNAV (GNSS) 10
ALBUM	345512.78S 0552038.29W	SULS IAC RNAV (GNSS) 08 SULS SID RWY 08 DORVO 8A
ALDIK	345441.96S 0561741.23W	SUMU STAR TIGRE 1A SUMU IAC RNAV (GNSS) 06 SUMU STAR RWY 06 06A
ALDUS	313429.83S 0580641.90W	SUSO IAC RNAV (GNSS) 05
ANDIB	345253.60S 0551142.61W	SULS IAC RNAV (GNSS) 08
ANKIR	310617.82S 0553643.74W	SURV IAC RNAV (GNSS) 05
ANRUP	334741S 0561209W	UM402 UN857
ARAPE	310100S 0572213W	W19 W20
AROMO	333002S 0550244W	A310 W18 UM792
ARTOX	304230S 0563605W	UL324 UM418
ASIVA	335026S 0562035W	A556 W19
ASUMA	315203S 0540919W	A310
ATAMO	344640.92S 0555554.55W	SUMU IAC RNAV (GNSS) 24
BISOK	325246S 0564041W	W19
BOLAT	333949S 0540039W	A305
BUTSI	331149.53S 0562459.14W	SUDU IAC RNAV (GNSS) 21
CUARA	302211S 0562659W	UL324
DAGUS	350217S 0560725W	A306 A310 ☛UL405 UM792 SUMU SID RWY 06 DAGUS 1A ☛SUMU SID RWY 24 DAGUS 1M
DAKIS	331328S 0533112W	UM661 SUSO IAC

Name-code designator	*Coordinates*	*ATS routes or other routes*
1	2	3
DAMPA	312935.18S 0580212.84W	RNAV (GNSS) 05
DARKA	351758S 0561502W	A310 UM792
DAYMA	314714S 0570514W	UL324 UP526
DIDER	332152.08S 0563636.48W	SUDU IAC RNAV (GNSS) 10
DORVO	344258S 0573102W	A305 UM424 UN857 SUMU STAR RWY 06 06A, SULS STAR RWY08 DORVO 8A
DRACA	342524S 0562227W	W25
EGDOK	343214.89S 0573508.94W	SUCA IAC RNAV (GNSS) 31
EGUPI	342519.80S 0575054.30W	SUCA IAC RNAV (GNSS) 13
ELARU	344517.39S 0555337.78W	SUMU IAC ILS-DME/VOR-DME 24
ENSAS	315440S 0570849W	UL324 UM534
ESORI	331625.70S 0562720.32W	SUDU IAC RNAV (GNSS) 21
GAMOT	305640S 0552937W	UA432 UM654
GATUS	344728.26S 0560152.90W	SUMU IAC LOC DME 19
GAVOG	344532.81S 0550631.01W	SULS IAC VOR/DME 19
GEBAR	342423.34S 0575302.34W	SUCA IAC RNAV (GNSS) 13
GEMOT	332058.38S 0561843.92W	SUDU IAC RNAV (GNSS) 10
GORIO	330747S 0570139W	W23
GUTUD	302245.87S 0564220.45W	SUAG IAC RNAV (GNSS) 11
ILMAS	343700.18S 0561637.17W	SUAA IAC RNAV (GNSS) 18
ILMUL	320844S 0562832W	UM402 UM654
ILNAN	302323.06S 0563636.27W	SUAG IAC RNAV (GNSS) 11
ILPOX	344342.08S 0555101.97W	SUMU IAC RNAV (GNSS) 24
ILSIM	314400S 0563232W	UM402 UM534
IREDU	344200.18S 0561616.21W	SUAA IAC RNAV (GNSS) 18
ISALA	314034S 0542647W	A314 UN741
ISVAL	344743.73S 0554725.54W	SUMU IAC RNAV (GNSS) 24

Name-code designator	*Coordinates*	*ATS routes or other routes*
1	2	3
KAMAM	344936.32S 0553701.16W	SUMU SID RWY06 AKPOD1B
KEVIS	345029S 0554643W	SUMU STAR DARKA1G
KONBI	343958S 0555353W	SUMU STAR KOSPI1G, TIGRE1G, NIMBO1G, DRACA1G, LOMUX1G, MONSA1G, REGOV1G, TELAK1G
KORBU	330726S 0555805W	W15
KOSPI	344202S 0563856W	W29
KOVIT	345029.26S 0550229.97W	SULS IAC RNAV (GNSS) 26
KUDEN	310234.22S 0553250.21W	SURV IAC RNAV (GNSS) 05
KUDOG	344438S 0570240W	SULS STAR RWY 08 DORVO 8A
KUGUG	342939.60S 0574103.40W	SUCA IAC RNAV (GNSS) 31
KUKEN	341058S 0581302W	UL324 UM654
LITOS	342732S 0544334W	A305
LIVUR	345020.15S 0550155.24W	SULS SID RWY 08 LUCIO1D
LOBIX	344833.51S 0545509.05W	SULS IAC RNAV (GNSS) 08
LOKUS	345628.32S 0561200.00W	SUMU IAC RNAV (GNSS) 06
LOLIL	315259S 0570303W	UM534 UP526
LOMID	335308S 0561945W	UN857 UP526
LOMUX	342302S 0561737W	W23
LUCIO	350318S 0555218W	A306 ☛UL405 SULS SID RWY 08 LUCIO 1D
MASOL	310706S 0561124W	W16 W25
MEVIV	311839S 0571546W	W19 W25
MIDUN	344842.30S 0560152.20W	SUMU IAC ILS DME 19 SUMU IAC LOC DME 19
MIGOT	305248S 0564042W	UM402 UL324
MIKIK	345330.08S 0560706.30W	SUMU IAC RNAV (GNSS) 06
MIKOT	322001.29S 0580324.23W	SUPU IAC GNSS (RNAV) 20
MOLBI	342050S 0553018W	UM540
MONSA	342056S 0561053W	A556 W19 UP526
MUDIR	344521.29S 0560154.45W	SUMU IAC ILS DME 19 SUMU IAC LOC DME 19

Name-code designator	*Coordinates*	*ATS routes or other routes*
1	2	3
MUKIB	304311S 0564213W	UM418 UM402
MUMET	330038S 0560353W	A314
NEGIR	334054S 0565702W	A314
NEMAS	343503S 0571111W	W29
NIMBO	343049S 0562932W	B555 ☛UL417
OGLAP	331204S 0561807W	UM402 UN741
OGMAR	331735S 0540856W	A309
OGRUN	320343S 0535034W	UN857
OPSAR	345110.91S 0560317.47W	SUMU IAC RNAV (GNSS) 06
OPSOS	322418S 0565125W	A556 G680
ORELO	310036.90S 0553048.00W	SURV IAC RNAV (GNSS) 05
ORUTA	340057S 0550102W	A309
OSEKU	345200.17S 0560438.41W	SUMU IAC RNAV (GNSS) 06
OSONI	321627.18S 0580244.75W	SUPU IAC GNSS (RNAV) 20
OSUKI	345451.89S 0550537.02W	SULS SID RWY 08 LUCIO1D
PABOT	341536S 0565134W	☛UL417 UN857
PAFIM	344953.82S 0564741.67W	SUMU STAR RWY 06 06 ALFA
PANUR	344943.77S 0545936.30W	SULS IAC RNAV (GNSS) 26A314
PAPIX	342458S 0580002W	UN741
PONPA	335625S 0571859W	A314 B555 UA314 ☛UL417 UN741
PORLI	313419S 0560010W	UM534 UM654
PUKAL	305917.34S 0552924.95W	SURV IAC RNAV (GNSS) 05
PUMIL	323227S 0564820W	UM654 UP526
PUNKI	345227.75S 0550109.49W	SULS SID RWY 08 LUCIO1D
RAVEL	342802S 0544249W	UM424
REBIN	325758S 0570718W	W23 W27
REGOV	341956S 0560029W	W15
RELUS	345458.00S 0555536.00W	SUMU SID RWY 06 DAGUS1A
REMUV	345632S 0555535W	SULS STAR RWY 08 DORVO 8A

Name-code designator	*Coordinates*	*ATS routes or other routes*
1	2	3
RENAX	350032.19S 0560143.22W	SUMU IAC ILS DME 19 SUMU IAC LOC DME 19
RENOM	350125.02S 0550348.53W	SULS IAC VOR/DME 19
REPEX	344855.16S 0550556.57W	SULS IAC VOR/DME 19
RIONE	330330S 0565830W	W27
RODOV	305004S 0574817W	UM418
SANDI	333654S 0555903W	W15
SANDU	321204S 0573323W	W23
☛		
SASKU	304754S 0572651W	UM418 UP526
SEKLO	300629S 0564758W	UM402
SILOT	343940.32S 0555438.05W	SUMU IAC RNAV (GNSS) 24
SIMOL	321130.14S 0580150.34W	SUPU IAC RNAV (GNSS) 20
SOLIS	342057S 0552529W	A309
SUGRA	321234S 0581124W	UM534
SUNGA	343727.29S 0560200.29W	SUMU IAC ILS DME 19 SUMU LOC DME 19
TELAK	342034S 0553938W	A310 W18 UM792
TESAD	333931S 0570052W	W25
TILDA	333820S 0574432W	☛UL417 UM654
TOGAL	333131S 0575406W	☛UL417 UL324
TOKAM	344653S 0564256W	A305 UM424
TOLEP	324341S 0530510W	UM424 UM661
TOSIB	342106S 0551955W	UM661
TULIO	313223S 0543001W	G680
UBLAM	303935S 0560944W	UM418
UGELO	324042S 0530850W	A305
☛UGIMI	345858S 0565302W	A306 ☛UL405 SUMU SID RWY 06 DAGUS 1A DAGUS 1C SUMU SID RWY 24 DAGUS 1M
UGURA	323617S 0532027W	A309
URURI	311810S 0550726W	UM534
VADIS	344134.74S 0550711.47W	SULS IAC VOR/DME 19
VOLCA	350213.46S 0552038.29W	SULS SID RWY 08 LUCIO1D

Name-code designator	*Coordinates*	*ATS routes or other routes*	*Name-code designator*	*Coordinates*	*ATS routes or other routes*
1	2	3	1	2	3
VUGNI	315744S 0535501W	UM792			
VULRO	335053S 0563637W	W23			
VUKAS	342013S 0560637W	UM402			
XOMAR	345931.39S 0555840.68W	SUMU IAC RNAV (GNSS) 06			

ENR 4.4 AERONAUTICAL GROUND LIGHTS - EN ROUTE

Name IDENT (coordinates)	*Type and intensity (sparks)*	*Characteristics*	*Operating Hours*	*Remarks*
1	2	3	4	5
Adami TWR 344700S/0561600W (*)	☛ABn ☛W 1000	☛Gp Flg (WGW)	☛HN IMC	
Cabo Polonio (Polonio Cape) 342400S/0534700W (*)	Marine 290.600	Flg W	HN	
Cabo Santa María (Santa María Cape) 344000S/0540900W (*)	Marine 480.000	Flg W ev 60 sec W F	HN	
Capitán Curbelo TWR 345100S/0550600W (*)	ABn 300	Gp Flg W G ev 5 sec	HN IMC	
Carrasco Terminal Building 344500S/0500200W (*)	ABn W 880	Gp Flg W G W ev 8 sec	HN IMC	
Cerro Montevideo 345300S/0561600W (*)	Marine 480.000	Gp Flg W ev 10 sec 3 Flg	HN	
Colonia del Sacramento 342800S/0575200W (*)	Marine 620	Flg R ev 9 sec	HN	
Farallón 342800S/0575600W (*)	Marine 1.300	Gp Flg W ev 10 sec 2 Flg	HN	
Isla de Flores 345700/0555600W (*)	Marine 200.000	Gp Flg W ev 16 sec 2 Flg	HN	
Isla de Lobos 350200S/0545300W (*)	Marine 1.084.800	Flg W ev 5 sec F R al SE	HN	
La Panela 345500S/0562700W (*)	Marine 600	Gp Flg W ev 10 sec	HN	
Punta Brava 345600S/0561000W (*)	Marine 14.400	Flg W ev 10 sec	HN	
Punta del Este 345800S/0545700W (*)	Marine 43.000	Flg W ev 8 sec	HN	

Name IDENT (coordinates)	*Type and intensity (1 000 candelas)*	*Characteristics*	*Operating Hours*	*Remarks*
1	2	3	4	5
☛	☛	☛	☛	
Punta José Ignacio 345100S/0543800W (*)	Marine 1.150	Flg W ev 2 sec	HN	
Punta Palmar 340400S/0533300W (*)	Marine 1.150	Flg W ev 6 sec	HN	