A Zonal-analysis Approach to Pan-American DXing

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The purpose of this article is to enable DXers in the northeastern states to DX Latin America in a systematic manner, based upon checking "pilot signals" from different areas. The methods employed are similar to those used in the recent "Zonal Analysis for TA DX" article. Of course, DXing the LA's is quite a different ballgame from TA-chasing.

Paths to Latin America are open under most night-time ionospheric conditions except the most utterly severe auroras. Auroral effects are chiefly of interest because of their influence upon domestic stations which interfere with the LA's. (Note: for the sake of convenience, the term "Latin American" (LA) will be used for all Caribbean, South American, Central American, and Mexican stations, even those which are in countries which speak English & other non-Romance languages.)

LA splits can be heard on most nights; on the other hand, domestic stations must be aurorally-weakened somewhat to permit large-scale DXing of LA's on 10-kHz. channels. The DXer should recognise the difference between short-skip and long-skip openings for LA's, just as these differences are observed in domestic DX. A DXer,who notes Dominican Republic stations over-riding normally-heard high-power co-channel Venezuelans & Colombians, should refer to the zonal chart at the end of this article and exploit the short-skip LA opening for other stations within 2000 miles. During such an opening, South American-chasing is best bypassed, to be re-attempted at another time. This situation is analogous to that of a domestic DXer in Boston who realises that, when WCBS-880 is loud on skip & WLS-890 is weak, it makes more sense to try for regionals & graveyarders in the NY-NJ-PA area than trying to get similar stations from the Midwest.

Frequency-dependence of openings must be considered: many nights have exhibited auroral conditions with weak domestic skip & good LA's below 1200 kHz., whilst yielding strong short-skip domestics & poor LA's above 1200. Instead of formulating one band-wide "plan of attack" for LA DXing, the DXer should generate 3 plans of attack: one for low-band (500-900 kHz.), a second for mid-band (900-1200 kHz.), and a third for high-band (1200-1700 kHz.).

As we are dealing with north-south paths, the DXer must be aware of sunset and sunrise times at both the transmitter and receiver sites. These times themselves are reasonably accurate for fade-time predictions: the difference in sunset (or sunrise) times between those of the first ionospheric control point and that of the nearest ground point of interest (transmitter or receiver),when a north-south path is considered, is nowhere near as great as the difference in sunset (or sunrise) between ground-site & control-point on the east-west routes encountered in TA & TP DX.

The sunset/sunrise tables I previously published should be your guide to LA path viability. The DXer should first determine what LA's are capable of being heard at his hometown sunset & sunrise times.

In December, a DXer in Boston at local sunset can hear LA's having sunset earlier than 2112 GMT. Only the eastern tip of Brazil has an earlier sunset, however. Under normal conditions, domestic QRM will have already overtaken 10-kHz.-multiple LA's by the time they enter darkness. An aurora at this time of year could prove to be very beneficial: with domestics knocked out, a DXer could selectively tune for LA's far to the east (e. g. Brazilians) shortly after sunset with no QRM from the Venezuelan & Colombian pests. Mid-December sunset for Venezuela doesn't occur until 2210 GMT. To me, far-east LA openings are far more rewarding than routine YV/HJ-chasing. North-coast Brazilian reception generally goes hand-in-hand with equally-fascinating African reception: both are auroral-conditions occurrences largely confined to coastal receiving sites at sunset with topnotch gear. Like Deep-South-American chasing, African & northern-Brazilian DXing put one's operating skills to a very thorough test.

Summertime LA DX at sunset is considerably different. The aforementioned Boston DXer has a mid-June local sunset of 0017 GMT. At that time, all of South America and the Caribbean islands are well into darkness. Even in Costa Rica, sunset has occurred 23 minutes earlier. Therefore, before domestics from the west start to skip in, a considerable chunk of Latin America is "open" for intensive DXing, without the need for AU CX. Of course, aurora will still enhance one's possibilities by extending domestic-free LA DX well into the evening, by which time Mexico and western Central America will be in the dark. The drawback to summer LA DXing (other than QRN) is that stations such as Fortaleza, Brazil on 760, 1200, & 1300 will be covered by stronger Venezuelans/Colombians as soon as they begin to propagate in. During an auroral winter opening,the DXer could "sit on" 640 kHz. and get Brazil, then Surinam, followed by Guadeloupe & Venezuela as the sunset line moves westward, not reaching Cuba until 1½ hours after Boston sunset. In summer, the Cuban pest surfaces immediately after Boston sunset.

Because domestic skip is usually very strong up until east coast sunrise, the sunrise LA termination times are principally of interest to eastern DXers during disturbed conditions. At sunrise in December, the Boston DXer may hear Mexico, western Cuba, and western Central America: these have sunrise times later than 1216 GMT. Other LA's have faded earlier that morning (Rio de Janeiro, Brazil sunrise = 0810; Venezuela/Colombia/Caribbean area sunrise about 1045-1105). June sunrise in Boston permits DXing of countries with sunrise after 0912 GMT: these include all Latin American areas except the far east of Brazil.

The sunset & sunrise cases of the winter & summer solstices represent the extreme cases: other times of the year range between these extremes in terms of the amount of area "open" for DXing at LSS/LSR. The DXer should proceed to the following zonal-analysis, keeping in mind the necessity to "follow" the sunset & sunrise terminators from east (group 1) to west (group 5). Individual station schedules must also be considered: the World Radio-TV Handbook and the international DX column updates are your references.

Group 1 / 145^{o} - 160^{o} (E of N)

These can be isolated from the interference of more westerly LA stations by exploiting autumn/winter sunset auroral openings. Salt water in the direction of desired-station pickup is advisable: this should be within the first 10 miles from the receiving site as the signals of interest will be arriving at low angles, skimming the surface of the earth. Africans should be DXed simultaneously. Surinam on 725 is the heavy hitter of group 1. Other Surinam stations on 600, 640, 820, & 914 are likely to be heard. Hindi-culture programming forms an important part of the broadcasting scene in Surinam: the exotic East Indian music will definitely help you to locate the non-split Surinam stations. 760 is worth checking as there is a station in Fortaleza, Brazil here; also the more-common Guyana station should show. These are sandwiched between Africans (rare São Tomé on 759 & powerhouse Senegal on 765). A tough one is the French Guiana outlet on 1070. 960 is your best bet for Bermuda; this is favoured by short-skip openings, rather than by heavily auroral conditions. Barbados is frequently heard on 900 during the conditions that give decent group 1 reception. Rio de Janeiro on 860 & 1220 are generally best just before Rio sunrise, rather than at east coast US sunset.

Groups 2 & 3 / 160^{o} - 195^{o}

Within these groups are many of the Caribbean islands: a veritable motherlode of potential countries to beef up the DXer's totals. The splits may be heard most nights, even when domestics are strong. The best "pilot signals" are from St. Kitts on 1265 & 555. Antigua - 1165 is also super-easy; non-split ZDK-1100 is somewhat more of a challenge because of HJAT/WWWE QRM. Haiti offers 1035 as an easy split; 895, 1325, & others a are more difficult. Tougher Caribbean splits include Grenada - 535, Dominica - 595, St. Vincent - 705, Montserrat - 885, and Anguilla - 1505. 10-kHz.-channel stations heard nightly include Netherlands Antilles - 800, Venezuela - 1200, Colombia - 1100, & Dominican Republic - 650. Of course, auroral conditions will greatly increase the quantity and the quality of DX heard; the reader is encouraged to read the recent "DXing Latin America & the Caribbean - Country by Country" article, the IRCA foreign logs, and the international DX columns for a more in-depth examination of the enormous number of potential targets. A highly-rewarding aspect of DXing Colombia & Venezuela is the reception of stations on the US regional & graveyard channels from 1230 to 1490 kHz.

Deep-South-American Hunting

This is a special breed of DX which is both satisfying and frustrating. The DXer should check Ecuadorian splits (605, 735, 945, 995, & 1465 for starters) as a prelude to DSA DX attempts. My experience is that the 0300 - 0900 GMT time slot is most productive. Spring & autumn are the seasons preferred by some DXers, although, theoretically, DSA

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should be DX-able all year. Peru - 854 (and also 880 during WCBS SP) and Paraguay - 645 come next on my DSA target list. If these are found, by all means, dig for more: Argentina, Chile, Bolivia, Uruguay, and (the ultimate) Falklands Islands on 536. Buenos Aires on 870 and Rio de Janeiro on 860 may serve as propagation-viability-indicators.

Group 4 / 195° - 220°

Bahamas on 810 & 1540 are regularly heard with the Albany, NY area stations on their channels disposed of with a good loop or auroral cx. Cuba is loaded to the gunwales with pests with which we're all too familiar. Cayman - 1555 is a "regular"; 1205 is somewhat less commonly heard. Jamaica - 700 may be found with WLW looped or phased. A short-skip LA night is best to minimise YVMH/HJCX QRM. Belize - 834 and the Costa Rican splits(on 575, 675, 725, 775, 825, et al) provide effective propagation beacons to the Central American isthmus. Central America is generally best from 0400 - 0800 GMT; additional targets are noted in the recent LADX article by Kazaross, Connelly, & DeLorenzo.

Group 5 / 220° - 250°

Mexico is the country of interest here: 540, 730, 900, 940, 1000, 1050, 1220, 1500, 1560, & 1570 have all been heard in New England. Early morning (from 0600 Z to sunrise termination time) is the most efficient time period for DXing Mexico. During that period, the high-powered Colombians & Venezuelans start fading, leaving Cuba & domestics to QRM Mexico. Moderate, rather than severe, auroral conditions are best. The lowest-latitude "Down-Under" DX paths pass through Mexico & the US southwest: unusually-loud Mexicans & SW domestics could signal the tantalising possibility of South Pacific DX making it to the northeastern USA. Tahiti - 738 & Tonga - 1017 would probably be the first heard.

Russ Brown has gotten TP/DU DX from Michigan; Gordon Nelson heard Tonga on 1020 in the '60s from MA. Despite the new splits, New England DXers have not recently heard TP/DU stations. Increased all-night domestic operation is the "villain" blamed for this by many DXers.

Pan-American Zonal-Analysis Chart (for Massachusetts QTH)

	5 220°-250°	4 195°-220°	3 175°-195°	2 160°-175°	1 145°-160°
A 500-1000mi. 805-1610km.	USA - TN	-	-	-	Bermuda
B 1000-1500mi. 1610-2415km.	USA - MS	USA - FL Bahamas Cuba	-	-	-
C 1500-2000mi. 2415-3220km.	USA - TX	Belize Jamaica	Dominican Republic Haiti	Anguilla Antigua Dominica Guadeloupe Martinique Montserrat Puerto Rico St. Kitts St. Lucia Virgin Isl.	-
D 2000-2500mi. 3220-4025km.	Mexico	Costa Rica Panama Honduras Nicaragua Guatemala El Salvador	Neth. Antilles	Grenada Venezuela	Barbados
E 2500-3250mi. 4025-5232km.	-	Galapagos Isl.	Colombia Ecuador	Brazil Manaus	French Guiana Guyana Surinam
F 3250-4000mi. 5232-6440km.	-	-	Peru	-	Brazil Natal
G 4000-4750mi. 6440-7647km.	-	-	Bolivia	Paraguay	-
H 4750-5500mi. 7647-8855km.	-	Easter Isl.	Chile	Argentina Uruguay	Brazil Rio de J.
I 5500-8000mi. 8855-12880km.	Tahiti	Pitcairn Isl.	-	Falklands Isl.	-
J >8000mi. >12880km.	New Zealand	Antarctica McMurdo	-	-	-