

NEW PERSPECTIVES: REFLECTIONS FROM BRAZILIAN ARMY STRATEGIC STUDIES INTERNATIONAL COURSE (BASSIC) AND STRATEGIC STUDIES TRIP (SST)

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1. An intriguing method to assess national strategic issues is to invite partner nations to come learn about them, and then see what questions they ask. Viewing the issues through lenses shaped by different cultural, economic and military experiences can broaden one's own perspective. This report seeks to achieve that by reviewing observations and assessments from a 2 – 15 Oct 2016, Strategic Studies Trip (SST) made by eight partner nation officers. Briefings for the officers occurred at strategic sites throughout Brazil. This included civilian institutions, military commands and training schools, and key civilian industries located in the Brasília, Manaus, São Paulo, and Foz do Iguaçu regions. The accumulated experiences provided examples of how Brazil, at the national, regional, and local level, strives to balance Defense, Social and Economic Development and Ecological Preservation objectives. Both the successes achieved and opportunities for continued progress were evident. The paper discusses each region in the order visited, highlighting information, challenges, and opportunities that resonated with participants.

The officers were participants in the Escola de Comando e Estado-Maior do Exército (ECEME), Brazilian Army Strategic Studies International Course (BASSIC). This four-month long program combined eight officers from partner nations with four Brazilian Army officers to study strategic issues. Most participants were senior Colonels; their prior experience included an armor brigade commander battling Boko Haram, the head of Army Procurement, a senior aviator planning air operations for a United Nations mission, and others with as diverse

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and engaging experiences.² This paper presents the group's observations in order to provide new perspectives to their Brazilian colleagues. To be clear, the BASSIC participants do not know the issues better, but they do know them different. BASSIC participants mulled over these topics during their many lengthy bus, plane, and even boat rides criss crossing the vast and beautiful terrain of Brazil. As the Brazilian military continues to transform, the intent is for these different perspectives to facilitate beneficial debate.

The SST enables BASSIC participants to see first-hand the execution of studied concepts. For example, issues first raised by Defense Industry Economics, and Entrepreneurship in Brazil lecturers organized by Fundação Getulio Vargas (FGV) were further explored through meetings with managers of Brazilian defense industry companies. Likewise, BASSIC lectures by experienced foreign policy advisors and international relations specialists, such as Celso Amorim (Brazil's Foreign Minister 1993-1995; 2003-2011; Minister of Defense 2011-2014), and Dr. Renato Flores (FGV lecturer, member Brazilian Center for International Relations) provided context for meetings in Brasilia on the foundational underpinnings of Brazilian military strategy and defense priorities. With the SST including visits to frontline military units and some of Brazil's premier military training schools, the process for government policies becoming implement actions was evident.

2. Lecturers prior to the SST discussed the constitutional and policy basis for the Brazilian Military. Building on this, discussions in **Brasilia** at the Brazilian Army (BA) Headquarters covered the strategic planning process, current objectives and correlation with the National Policy of Defense (NPD). Discussion on the BA strategic plan (2016-2019) included current challenges with respect to inadequate funding and maintaining the political will to implement multi-year programs. This is not a situation unique to Brazil. The participants could commiserate with the challenge of having more priorities than budget dollars to support. There was similar consensus on the importance of having clear project goals and transparent project management, particularly on budgeting, resource requirements, and scheduling demands. The group acknowledged the importance of succinctly explaining both funding requirements and corresponding military capability benefits to civilian leadership. For the BA this includes incorporating the expected social benefits and Defense Industry support into the explanation. Knowing that your colleagues / partner nations share similar challenges brings those in the profession of arms closer together. This facilitates idea sharing and optimizing of common processes.

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The Ministry of Defense (MoD) briefing summarized how the NPD was implemented across the different services (Army, Air Force and Navy), to include service specific procurement priorities. The review noted strategic defense priorities, such as defending the “Blue Amazon”, the name Brazil uses for their territorial South Atlantic waters, and border and territorial security in the Amazon. Many questions were raised that could not be addressed during the session. For example: How were the effectiveness, cost and social program benefits of different methods for defending the Blue Amazon assessed? Understanding this would open a window into both the inter-service budgeting process and the methodology for assessing multi-year strategic procurement projects.

The MoD also discussed the importance of power projection. Brazil’s aircraft carrier was used as an example of this. Admittedly, this caused some confusion as the BASSIC participants observed the carrier sitting idle in Rio de Janeiro awaiting repairs and aircraft. This led participants to ask if, given Brazil’s positive role in the United Nations’ Haiti and Lebanon peacekeeping missions, a helicopter assault ship would not provide a more cost effective, and utilized platform for Brazil’s planned force projection. Admittedly, anytime a group of Army officers begins to discuss better uses for an aircraft carrier you know they are operating far from their knowledge base. Yet comparing different options for delivering a needed military capability is the type of interrelated budget decision that militaries face. Hence, understanding the decision making process is invaluable. For future BASSIC participants, a panel discussion on strategic challenges and the civilian and military policies to confront them is proposed. Participants could include both senior MoD civilians and senior military representatives from each branch of service.

At the Land Operations Command (COTER), BASSIC participants saw first-hand a well-organized staff structure. The presentation included describing the involvement of the military in domestic social and economic development projects. This was a unique approach for many BASSIC participants and raised the following questions for further study:

- Given the budget climate, how will the different domestic military missions (e.g. road building, enforcement/pacification operations, medical outreach) be prioritized against participating in Peace Keeping operations, force projection, and border security?
- Who should be responsible (Federal or State budgets) for wear and tear on military equipment used in domestic security missions? How do responsibilities shift if it is domestic security for a national event, such as the Olympics, versus local security, such as favela pacification?

3. Leaving Brasilia, the BASSIC Participants travelled on to the **Manaus** region. Their first session, hosted at Amazon Region Command began with a panel discussion of Navy, Air Force, and Army officers. The focus was on the logistical challenges of providing governance support to the population, demonstrating sovereign control over the region, and interdicting criminal elements in the austere Amazon environment. There is a “strong arm, friendly hand” concept of ensuring the availability of highly capable and sufficient forces for security while providing daily population support. The latter accomplished via Border Platoon Outposts, potentially the only government entity the regional population will ever encounter. The Navy’s mention of having only two hospital ships available for the region highlighted the resource challenges that remain. A representative from the regional civilian led development council provided further insight on the importance of investing in enabling infrastructure, such as broadband internet. Showing the interconnection between environmental, economic, and social policy goals, he presented data explaining how economic growth (in terms of urban employment) reduces deforestation. These examples helped the BASSIC participants grasp the vastness and challenges of providing military, governance and social program support in the Amazon region.

Among the partner nations, the extensive Brazilian military involvement in social infrastructure and domestic security programs would be problematic. From the discussions, it was clear that currently only the Brazilian military has the capabilities to support these programs. Many evening discussions among the participants debated whether this was well suited as a long-term military mission. They wondered what other Brazilian agency has, or could establish, the resources needed to take on the Amazonian infrastructure support and internal security role. This could enable the military to focus on traditional territorial defense, force projection, and peacekeeping missions. Alternatively, is the Amazon regional support provided by the military an example of a quintessential Brazilian solution to a challenge: Dedicated professionals adapting the available resources to meet an existing need.

Transitioning from discussions on government policy and strategic perspectives to tactical training, the BASSIC participants next went to the Brazilian Army’s Jungle Warfare Training Center (CIGS). The center is recognized worldwide for its high quality training to include an innovate zoological approach. Originally established exclusively to familiarize CIGS trainees with the flora and fauna of the Amazon, the CIGS Zoo is now also used to facilitate youth education programs, research, and tourist awareness of Amazon bio-diversity. It accomplishes this while still supporting the CIGS military trainees. This includes a group of international students (Nigeria, Poland, China, U.S., U.K, and others) that BASSIC participants observed going through the program. The student group demonstrated both the value other nations perceive in the training as well as Brazilian

efforts to develop relations across partner nations, even when those nations may have conflicting aims in other parts of the world. This was an execution example of the non-aligned foreign policy principal that the BASSIC students discussed with FGV lecturers.

4. From Manaus, the participants next went to the **São Paulo** region. Their first visit was to Avibras in São José dos Campos. This company is clearly focused on meeting the needs of their primary customer, the Brazilian Armed Forces and in particular the Brazilian Army. The full-time presence of an Army Officer at Avibras monitoring project planning and execution facilitated this. Likewise, Avibras supports the MoD goal of developing multiple Brazilian manufactures in the defense industry (primary and secondary suppliers) through its use of approximately 60% Brazilian content in their products. This included the planned sourcing for the Falcão Unmanned Aerial Vehicle (UAV) under development.

The Falcão is intended to tie into the Avibras Artillery Saturation Rocket System (ASTROS II) artillery rocket system as a forward observer / Battle Damage assessor. However, it was not clear to the BASSIC participants how a lightweight UAV fit the expertise of an experienced armored vehicle manufacturer. This example highlights the challenges of prioritizing a purely domestic defense industrial base yet not having guaranteed multi-year funding commitments for new technologies. The project started with the expectation that the prioritization, and hence funding, would endure thereby facilitating the expansion of Avibras into new markets. As many capable UAVs exist in the global market, a question raised was what elements of UAV development would best support Brazil's multiple expectations for its defense industry: Defense Capability, Export Market Competitiveness, Social and Economic Development? Hence, the Falcão could be a catalyst for understanding and optimizing MoD processes for supporting the domestic defense industry and technology development initiatives.

Following Avibras the BASSIC participants went to Embraer, an international leader in civilian aviation. The company presented their foray into purpose built military transport aircraft, the KC-390. With an impressive array of features and planned specifications, the plane is being marketed as a replacement to Lockheed Martin's globally pervasive C-130 aircraft. The KC-390 is expected to significantly enhance the lift capabilities of the Brazilian military and hence enable broader operational flexibility. To execute the project, Embraer is establishing joint ventures in other nations and internationalizing some components (such as KC-390 avionics from the U.S. firm Rockwell Collins, and rear fuselage from Aero Vodochody in the Czech Republic). Recognizing MoD's additional interests in attaining positive economic and social impacts from strategic projects, a question raised was: How does this outsourcing aligns with the technology and defense industry infrastructure development goals of the MoD? The nexus of private industry,

government policy goals, and defense capabilities is highly complex and worthy of additional study.

The Embraer visit also included a discussion on the Integrated Border Monitoring System (SISFRON) under development. This included a review of the challenges of implementing a technology infrastructure support system within an austere environment such as the Amazon. This enabled—as appropriate for a strategic level program like BASSIC—discussions on how defense dollars are prioritized, the challenges of implementing new technologies, and how complex systems are explained to political leaders. All worthy topics that complimented prior lectures. This example highlights an inherent challenge of the BASSIC program: To learn about strategic challenges requires open and frank discussions; that openness may conflict with a government desire to demonstrate a consistently positive, “all is working” message, brushing aside challenges. It is to the significant credit of the BASSIC program organizers and partner firms visited that this balance was well struck: Challenges were professionally discussed so that partner nations could both learn from Brazil’s approach and comment on similar experiences and lessons learned in their own countries. By doing this, the cross-nation profession of arms was enhanced.

The BASSIC participants next toured an ammunition production facility of CBC, a global manufacturer and marketer of munitions, firearms, and ballistic protection devices. This broad, albeit slightly ironic, combination of products ensured that all the partner nations had prior experience with CBC products. CBC ensured that there were both operational and strategic level managers available to meet with the BASSIC participants. This included the General Manager, two vice presidents and several managers responsible for the areas of manufacturing, product management, quality control and Research and Development. This facilitated a discussion on how private industries with a global reach support the MoD goal of growing a domestic defense industry base. Job growth within Brazil was a clear priority along with ensuring the Brazilian based facilities were world-class in terms of quality, productivity, and innovation. Yet, perhaps in conflict with MoD desires, CBC also operates manufacturing sites world-wide to support local markets. This represents an acknowledgement that to serve a global customer base, and the expectations of other countries to realize their own “domestic” benefits, some investment must occur outside of Brazil.

The visit epitomized the win-win potential of partner nations meeting with Brazilian defense industry firms. For the partner nations, they had an opportunity to see how a Brazilian manufacturer implements world-class manufacturing techniques. Specifically, examples of Lean, 5S, Continuous Improvement, Visual Factory, and Set-Up Reduction / Single Minute Exchange of Dies (SMED), were evident. For CBC, it was an opportunity to demonstrate their technical prowess and product mix to senior representatives from customer nations. This included

an opportunity for BASSIC participants to shoot several different Brazilian weapons and ammunition types. True, putting steel on target (rounds down range) is not strategic...but it is fun and builds comradery. It was another reminder that the BASSIC program effectively demonstrates how Brazil can facilitate different nations of the world coming together in friendship.

Between visits to different Defense Industry firms, the BASSIC participants took a short tour within the city of São Paulo. The pervasive homelessness stood in sharp contrast to the modern, efficient manufacturing sites visited. There was a clear dichotomy between the success of global manufacturing leaders like Embraer and CBC and the immense social challenges of extreme poverty. This provided context for MoD's mantra that the Defense Industry must be a force for positive social good, not simply profit seeking enterprises. Incentive programs, such as a special tax regime, support this policy goal. A discussed risk is that regulations attempting to promote social progress may inadvertently stifle private industry innovation and hence global competitiveness and growth. Further analysis of how private companies can succeed within a framework of national expectations and regulatory requirements for social progress is proposed.

The time in São Paulo included a briefing at Southeast Military Command (CMSE). General de Brigada Miranda (Chief of the Staff of CMSE) presented the history and organization of CMSE explaining the types of units, key equipment, missions, command relationships and jurisdictions in the state of São Paulo. This included a discussion on the 74 Tiros de Guerra garrisons that serve as dual military-social program centers, providing young men with a foundation for national service and military ethos. There was also, an intriguing discussion on the growing engagement of China and Russia with West African nations. Specifically, as those countries invest more in the region, shifting economic and political alliances, how will Brazil's strategic and economic relevance in Africa be affected? This is a subject the BASSIC participants propose researching further.

5. Building on the prevailing themes of military readiness, social progress, and economic growth the BASSIC participants next travelled to the **Foz do Iguaçu** region. Their first visit was to the 34th BI MEC, where they gained perspective on both the symbolism used to strengthen international relations as well as the expanded capabilities of the Brazilian military. The former was evident from the prominent display of the Brazil, Argentina, and Paraguay flags, as well as the 34th's CDR's (COL Lobo Junior) clear expression of respect for his military colleagues from adjoining nations. Likewise, a battalion (BN) living on "Argentina Ave" and a Brazilian BN called "The BN of Paraguay" are symbolic reminders of Brazilian efforts to build a military culture of transnational collaboration. The BASSIC participants proposed assessing if a regional Transnational and Inter Agency Operations Center would benefit long-term collaboration on security and

joint training actions.

Discussion on the expanded military capabilities included a review of the Guarani, a new, Brazilian produced Vehicle Armoured Personnel Carrier – Medium Wheeled Type (VBTP-MR). This collaborative effort between the Italian truck manufacturer IVECO and the Brazilian Army is an example of Brazil's policy intent to localize defense purchases. Similar to the ASTROS II viewed at AVIBRAS in São Paulo, the Guarani was designed and built with both domestic (Brazil) and export markets in mind. The capabilities—offensive, defensive, mission flexibility—appear well suited for the Brazilian environment characterized as primarily permissive/low-threat. Likewise, the Guarani may be marketed to countries that seek an Armored Personnel Carriers (APC) capabilities without the perceived diplomatic or economic offset obligations incurred when weapons are acquired from other nations. However, the Guarani may struggle commercially in an export market dominated by APC and Mine Resistant Ambush Protected (MRAP) systems that have evolved from deployment to persistent combat and logistically challenging environments. Validating the Guarani design and employment doctrine and enabling both to rapidly adapt to evolving threat capabilities will support both Brazil's domestic defense industry and military capability.



Figure 1: Symbolism matters; COL Lobo with standard room decorations for the 34th BI MEC (Paraguay, Brazil, Argentina Flags)

International collaboration, effective eco-friendly tourism, and the economic contribution of the ITAIPU Hydroelectric plant were effectively conveyed to BASSIC participants. Of particular interest was the bi-national region and associ-

ated collaboration on financing, power (political and electrical), and environmental protection. The visit provided BASSIC participants with specific examples of how Brazil approaches its policy intent of:

- Industrial growth stimulated by access to low cost hydroelectric power;
- Environmental protection through education, research, security and regulatory actions;
- Social progress (improved health care and education access) to benefit indigenous and economically disadvantaged populations



Figure 2: ITAIPU Dam is an effective example of world-class engineering skill coupled with Brazilian (& Paraguayan) efforts to harness social benefits through effective utilization of natural resources.

Currently ITAIPU produces 14K MW of power, with both Brazil and Paraguay having rights to 50% of the total. As Paraguay is only consuming 1.3K MW, Brazil is obligated to purchase the rest at market price, not production price. Brazil's industrial and urban expansion is readily consuming the power, albeit at a cost given the market pricing. This raises a degree of uncertainty that should be assessed; specifically:

- What happens if Paraguay's energy needs increase and instead of "selling" part of their 50% power allocation they seek to use it? The treaty entitles Paraguay to the power...but Brazil is readily consuming it. Is the purchased power easily given up, or a dependency that must be resolved?
- Given the region's current economic malaise, how likely is it that the planned debt pay-off by 2023 will still occur? How can the risk of ITAIPU operating funds and profits being appropriated for other purposes be mitigated?
- What mechanisms—and their historical success/failure rate—exist to deescalate conflicts on the market price of "left-over" power from the Paraguayan energy allocation? What role do transnational institutions, such as the United Nations, have as a catalyst for peaceful resolution of disputes; or do these organizations exacerbate the issues?

Discussing these potentially contentious issues and Brazil's efforts to either avoid or mitigate them would be instructive to the BASSIC participants. This could include:

- Assessment of the bi-national agreement and its successes, limitations and challenges.
- Future implications of Paraguay government and media efforts to promote a different interpretation (or re-assessment) of the power sharing and financing arrangements for ITAIPU.

There are multiple 2nd order effects to the successful operation of the ITAIPU Hydroelectric Plant. Regional employment (3000 employees (half Brazil and half Paraguay), university funding, royalties to 50+ communities, and significant environmental preservation / conservation areas were reviewed. There was significant pride in the successful collaboration ITAIPU has had with the community. Some strains were also apparent, such as frustration with Non-Governmental Organizations (NGOs) & Environmental Groups whose concerns were seen as limiting the development opportunities, to include the construction halt imposed on the University of Latin America Integration (UNILA) site. As one ITAIPU spokesperson put it, "there is no development without energy," but "unfortunately Brazilians have the notion we should not flood...because they do not know that flooding is necessary [i.e. a result of dam construction/power generation]." Having additional discussion on the Brazilian approach to dam-impacted / displaced communities and how the social and financial cost-versus-benefit assessment is made would be a beneficial strategic discussion.

The final visit was to Iguazu Falls where BASSIC participants saw first-hand how Brazil manages a major ecological site. The site poses a challenge as a soft target (light security with multiple choke points) coupled with a large number of international visitors. The site emphasizes increasing the opportunity for international visitors to experience Iguazu Fall's natural wonder while concurrently having a minimum ecological impact. For the BASSIC participants specifically, between a high-speed boat excursion up the Iguazu River to walking through mist-filled observation platforms, the visit was a good team-building experience and capstone to the remarkable natural beauty of Brazil. As the BASSIC participants reflect on and share their experiences they will motivate more of their countrymen to visit and respectfully pay homage to this natural wonder.



Figure 3: “Stunning” is an understatement; Iguazu Falls National Park is well organized and easily navigated by visitors.

6. A program like BASSIC is as valuable as the effort the participants, organizers, and lecturers put in to it. The many military and civilian briefers throughout the trip who collaboratively discussed both capabilities and strategic challenges were instrumental to broadening the perspectives of the BASSIC participants. Likewise, the support from the faculty and staff at ECEME, and in particular COL Luciano and LTC Horita, in organizing and guiding the trip facilitated an excellent learning opportunity. The ideas raised, questions asked, and professional discussions throughout the trip went beyond the borders of mere duty and into the domain of true friendship and mutual respect.