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A self-discharging vessel such as this one (the *Maersk Verona*) would be suitable for the afloat depot role.

AFLOAT DEPOTS FOR THE AFRICAN STANDBY FORCE

by Lieutenant-Colonel Rick Thompson

Introduction

To address the need for increased stability forces, the African Union (AU) has developed the concept of an African Standby Force (ASF) to leverage the military capabilities of the regional organizations on the continent. While sustaining this combined and joint force will be key to ensuring its operational success, sustainment is not currently an AU strength. For example, the operational effectiveness of the current African Mission in Sudan (AMIS) has suffered from numerous and widely reported deficiencies in sustainment.[1] The AU aims to secure the financial assistance of outside partners for establishing a sustainment capability, and the G8 generally has been sympathetic to this initiative, because it would reduce the demand for its military forces to become involved in conflict resolution in Africa. The question is how can the combined and joint ASF be best sustained? This article proposes that a number of Afloat Depots are a better way to support the ASF than the currently planned system of regional land-based depots.

The African Standby Force

The ASF is an initiative inherited from the Organization of African Unity (OAU) to create an African capability to generate stability forces. The AU plan is to create an ASF of some five light infantry brigades by leveraging the organizational capabilities of the five main Regional Economic Communities (RECs) in the AU.[2] Generally, each region is to establish a permanent planning element, nominate an existing brigade headquarters from one of the nations as the foundation of the brigade, and then have various nations contribute the component units of the brigade according to their capacity. In effect, this structural concept is similar to the NATO notion of a 'framework nation,' in which certain countries provide the

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Map by Chris Johnson

critical mass of a capability, which is then augmented by other nations. Deployment of the brigades would be accomplished through a combination of indigenous African lift and assistance provided by external partners (i.e. NATO/EU/G8). Four of the five regions have taken concrete steps to establish a capability in the near future.

The development of the ASF is not proceeding at a uniform pace, but, rather, it is progressing as the situation within each of the REC's permits. *Inter* – and *intra*-state conflicts involving the states of each region certainly will complicate any basing considerations. Progress in establishing the ASF brigades is most advanced in the Economic Community of Western African States (ECOWAS), where Nigeria provides the framework nation. The Intergovernmental Authority on Development (IGAD), (East Africa), has also established a capability, based upon Ethiopia being the framework nation, with Kenya playing a strong supporting role. Within the South African Development Community (SADC), less progress has been made, perhaps due to the relative stability of the region, but South Africa is clearly the framework nation. The Economic Community of Central African States (ECCAL) has established a structure for a regional headquarters, a structure, and Table of Organization and Equipment (TOE) for a 2177-person brigade, as well as an action plan for implementation.[3] Given the security situation and the relative political and military weakness of the member states, there is no obvious framework nation, and it seems reasonable to expect that anything more than token progress may be some years away. Finally, in North Africa, the Arab Maghreb Union (AMU) is the designated REC, but the AMU has been effectively moribund since shortly after its launch in 1989, and there seems to be little interest amongst the member states in reviving the organization. Thus, without significant political progress, the formation of an ASF Standby Brigade in North Africa appears to be on hold.

Notwithstanding the uneven progress on the ground, the overall concept is that each of the regional ASF brigades is expected to generate forces for five different scenarios:[4]

The AU assessment is that, although resource constraints are a key factor, the further development of the ASF should concentrate upon Scenario 5.[5] The AU has adopted a phased approach to developing this capability, and expects to attain it by 2010.[6] From a sustainment perspective, the timelines for developing the force are less important than the level of ambition of the readiness goals. The 30-day response time can be considered a high-readiness posture, and readiness is expensive. To meet this timeline, the AU will

Scenario	Description	Size of force	Time needed to deploy
1	AU/Regional Military advice to a Political mission.	Staff Officers	30 days
2	AU/Regional observer mission co-deployed with UN mission	Bde HQ (-)	30 days
3	Stand alone AU/Regional observer mission	Bde HQ (-)	30 days
4	AU/Regional peacekeeping force (PKF) for Chapter VI and preventive deployment missions.	Bde task	30 days
5	AU PKF for complex multi-dimensional PK mission with low level spoilers (a feature of many current conflicts).	Bde task	30 days (military component)

need to consider how to expedite theatre activation and to ensure a timely flow of sustainment to deploying forces. It will require sustainment stocks that are well-maintained and prepared for transport, and a theatre activation capability with a response time of just a few days.

The ASF concept of logistics support for this relatively ambitious military effort is not yet well developed. The notion is that forces deployed for Scenarios 1 to 3 will self-sustain for 30 days, while the brigades deploying for Scenarios 4 and 5 will have 90 days of self-sustainment. However, after 30 days of a mission, the REC will either assume responsibility for sustainment, or will reimburse the Troop Contributing Nations for doing so.[7] The premise would appear to be that nations are responsible for the first 30 days of sustainment while the succeeding 60 days (less purely national items) would be expected to be supplied largely from the regional depots.The notion of reimbursing nations rather than providing the capacity for sustainment likely would lead to a very uneven sustainment posture across the force, as not all nations possess the same capacity. Such an uneven sustainment posture could place a brake upon operational effectiveness. Another difficulty associated with this premise is that the emphasis is upon 'flowing in' the 30 days of sustainment materiel, along with the deploying forces in the initial deployment phase, thereby creating a demand for precious airlift that is likely to be in limited supply from foreign partners.

The current AU plan is to obtain external assistance to establish and stock a Central Military Logistics Depot, as well as a depot in each region.[8] No doubt, there is some notion of a maintenance capability at these depots, so that equipment and materiel held at them can be maintained in a state of readiness.The two-fold aim of such a logistics support system would be to support rapid and effective deployment, and mission sustainability.[9] For land-based depots to support rapid deployability and effective sustainment, they will need to be situated close to air and sea ports so that they can be quickly out-loaded and easily replenished. Essentially, the AU intends to negotiate the locations of the six depots with prospective host nations, and negotiate with external partners to help build, fill, and maintain them. It is somewhat likely that such a construction program of permanent infrastructure will be viewed by local politicians as a great patronage opportunity and that the resulting depots will be sub-optimal from a military efficiency point of view. The numerous Canadian and American examples of the distorting influence of 'pork-barrel politics' are not encouraging, when one considers how this process might unfold in far less transparent African polities. Moreover, the degree of political and social instability present in African nations could result in the depots being inaccessible or physically threatened. While this type of risk exists for all elements of a Standby Brigade, it is far graver with respect to sustainment stocks, because these are relatively scarce. There may be plenty of light infantry battalions but relatively little in the way of sustainment capability in the armed forces of most African nations.

"Thus, without significant political progress, the formation of an ASF Standby Brigade in North Africa appears to be on hold."

G8 Support

Given that most AU member states face significant fiscal challenges that are unlikely to be resolved before 2010, external assistance for logistic support of the ASF military logistics depots is crucial. The G8 group of nations has expressed continued support for the idea of building the capacity of the ASF.[10] The implicit idea in this partnership is that the AU will develop 'African solutions for Africa,' and the Western countries will 'write the cheques' to cover the development costs as a means of avoiding direct Western military involvement. However, there is an understandable reticence amongst donor nations to simply 'writing a blank cheque' to the AU.[11] In fact, the willingness of G8 nations to contribute financially to supporting the ASF may be less than firm if they cannot convince their publics that the funds have been well spent, and have resulted in some measurable improvements in ASF capability. Therefore, logistics support structures that can demonstrate a degree of transparency and accountability ought to be attractive to Western governments.

Geographical and Technical Context

An obvious question is whether the geographical and technical contexts of conducting operations in Africa are consistent with the Afloat Depot concept. Although 40 of the continent's 55 nations have coastlines and are accessible by sea, the transportation infrastructure in Sub-Saharan Africa is a potential limiting factor with respect to operational planning considerations for any military force.[12] The continent is under-developed in terms of transportation infrastructure, even when compared to other developing regions.[13] There are, for instance, no transcontinental road or rail structures that would facilitate force deployment and sustainment. Although southern Africa has the best-developed road and rail systems, other regions tend to have transportation infrastructure that radiates from ports to specific hinterlands, but which rarely connect.[14] Even though a limited rail network exists in East Africa, it is a different gauge than that used in the SADC.[15] This transportation infrastructure situation suggests that the movement of goods by sea around the littoral may well be more practicable than trying to move them overland.

Air transport is an obvious alternative, but the infrastructure to support it is also highly limited in most African countries. Air transport also generally has a limited *capacity* compared with surface movement, and it is much more expensive. For these reasons, air transport is usually considered a premium form of transportation, compared to land and sea shipments.

Logisticians will normally restrict its use to moving high-priority items, while attempting to move the bulk of sustainment items by surface transport.

Seaports in Africa also face certain challenges. Like the rest of the transportation infrastructure, they suffer from under-investment and lack of modern capability.[16] The important question is whether sufficient African ports with the capacity to handle Afloat Depot vessels exist. The majority of sub-Saharan ports can accommodate vessels with a draft (the depth to which a vessel is immersed when fully loaded) of 10 metres or less. This capability generally corresponds to the draft required for first and second generation container ships, which, in turn, indicates a capacity of somewhere between 500 and 2500 containers. Furthermore, first and second generation container ships represent approximately 30 to 40 percent of the world's container vessels.[17] Consequently, there is a relatively large pool of suitable vessels available from which time-chartered Afloat Depot vessels might be sourced.

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Although the detailed logistical study by African operational planners has not yet been done to determine just how many containers of sustainment materiel a Light Infantry Brigade might require, a possible point of comparison resides in the 1982 deployment of the UK Task Force to recapture the Falkland Islands. That light infantry brigade task force deployed with a war maintenance reserve (30 days stocks) totalling some 9000 tonnes.[18] Although a number of differences exist between that UK Task Force and the proposed ASF brigades, including the level of intensity of combat anticipated, a simple doubling of the UK stocks (to represent 60 days) would result in a requirement of 18,000 tonnes. Another rough order of magnitude calculation, based upon the fact that a typical 20 foot shipping container (TEU) holds 17 tonnes of materiel, results in an approximate 1058 TEU requirement for an ASF Brigade's sixty days of sustainment stocks. This number of containers fits well within a typical ship size that would be appropriate to the majority of African commercial ports.

What Afloat Depots Are Not

The proposed Afloat Depots for the ASF brigades should be distinguished from pre-positioning and sea basing concepts, both of which are promoted or practised to the greatest extent by the United States. The Afloat Depot concept could assist in speeding deployment by reducing the demand on premium transport during the deployment phase. If a theatre activation package was embarked upon, it would also speed the deployment of the main force by effectively pre-positioning the materiel required, and potentially providing life support for the theatre activation troops. In these ways, it is similar to the afloat pre-positioning concept employed by the Americans. However, the American force structure calls for massive amounts of stocks, and they operate a fleet of large, deep-draught, purpose-built vessels. The Afloat Depot concept is simply not as ambitious as American afloat pre-positioning schemes.

http://web.worldbank.org

The road transportation infrastructure in many parts of Africa is very limited. It also radiates from ports rather than being transcontinental in nature.

Another key feature of the Afloat Depots is that they reduce the political and security risks associated with land-based depots, and, in that sense, they share a feature of the American sea-basing concept. However, the sea-basing concept envisions a constellation of sea-based platforms that enable the 'marriage' of troops with their pre-positioned equipment at sea. It also envisions a selective off-load capability for these platforms, to allow task tailoring of forces before they go ashore, and the ability to sustain that force without the need of establishing traditional beachheads and logistic stockpiles ashore. Finally, the sea-basing concept envisions the recovery and reconstitution

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The Large Medium-Speed Roll-On/Roll-Off (LMSR) vessels used by the United States Army Afloat Propositioning Program are too large for many African ports. They are also too much vessel for the requirement.

of the Joint Task Force at sea.[19] The Afloat Depots, in contrast, will require a port *in* or *adjacent to* and *connected to* the theatre of operations. However, given the AU decision to postpone consideration of a forced entry capability until sometime in the future, sea-basing would appear to be too much solution for the AU problem.

What They Are: The Afloat Depot Concept

The ASF could be supported by a central land-based depot and a number of Afloat Logistics Depots instead of the proposed regional land-based depots. A central, land-based depot would be the main point of stock replenishment and reconditioning for the afloat depots. The Afloat Depots would consist of chartered commercial cargo vessels suitable for operations in African ports, and would contain the supplies necessary to support a Brigade for 60 days, thus achieving the desired 90 days sufficiency after the initial 30 day period, and they could possibly embark upon a Theatre Activation Package.[20] Afloat Depots offer a number of operational advantages over land-based depots, and they may provide external partners with a transparent and accountable instrument for increasing the capacity of the ASF.

One of the key operational advantages provided by Afloat Depots is flexibility. They share one of the characteristics of naval forces, in that they have the ability to be moved to where they are needed. They can be positioned close to a crisis area unobtrusively and before deployment of the ground force is authorized. By not having the depot located on the ground in any particular country, the afloat concept also avoids the possibility that the mobilization of the force is restricted by the politics or political sensitivities of a host nation. It is precisely this type of consideration that has been a factor in the United States decision to establish its Afloat Pre-positioning forces.[21] Thus, as a crisis develops and the REC considers a possible intervention, the planning element could direct the Afloat Depot to an offshore area near the crisis zone. Then, once a decision had been made to intervene, the Afloat Depot would quickly arrive, enabling rapid deployment of the force.

Afloat Depots also enable rapid deployment by reducing the requirement for securing lift. For a land-based depot, the ASF Brigade (or mission authority) would need to negotiate a source of transport, using either integral or partner-supplied funding for charter or partner military transport assets. Following such agreement, additional time would be required to transit to the port serving the depot, to out-load the depot stocks, and to transit to the operational area. This process is likely to be measured in weeks, and although some of it could be concurrent activity, it represents considerable staff effort, and it introduces an unnecessary element of uncertainty into the operational planning process. The faster delivery of sustainment stocks means the faster achievement of sustainable combat power.[22]

A rapid build-up of combat power would also accrue from embarking a Theatre Activation Package on the Afloat Depots, which would greatly facilitate the rapid deployment of an ASF brigade. Such a package, consisting of vehicles, communications, and life support, could be in port or just offshore, waiting for the brigade advance/ theatre activation party personnel to fly in and link up with it. This capability would reduce the demand for scarce and expensive airlift in the early stages of a deployment. Depending upon the type and size of vessel, it might be possible for the ship itself to provide a limited degree of life support for a small advance element through the use of modular container accommodation, either on-deck or downloaded to the pier. Alternatively, the Afloat Depot vessels could deliver the Theatre Activation Package, and then withdraw to the relative safety of the sea, in order to protect the operational stocks.

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Airlift is suitable for *initial* troop deployment, but an expensive way to do *sustainment*.

Once the stocks on the Afloat Depots had been put ashore, the vessels could be used for supplementary or alternative purposes. For instance, if the stocks became seriously depleted, the remainder could be ground-loaded, and the vessels could be used to conduct replenishment operations between the central depot and the deployed force. They could also be useful in facilitating equipment rotations of the various national contingents. Finally, in certain scenarios, they might even be employed as a limited form of intra-theatre transport under the control of the operational commander. The notion of a time charter permits all of these activities that otherwise would have to be contracted or negotiated separately.

Afloat Depots offer a force protection advantage over land-based depots in an African context. Although land-based depots ostensibly can be guarded by host nation security forces, there is a reasonable likelihood that the host nation will itself be embroiled in conflict.[23] In contrast, the piracy risk to the Afloat Depots has only been assessed as significant off the Somali and Nigerian coasts.[24] There is no doubt that any depot, land-based or afloat, can be attacked by some means by a determined enemy, but the essential difference is that the Afloat Depots' mobility allows them to move out of harm's way. Even supposing that the Afloat Depots will spend a significant amount of time in the ports of member states, they could be positioned in only those states with a relatively more stable security situation. There might even be some collateral training opportunities accrued with member states as a result. In fact, the inherent mobility also means that the stocks could be positioned to support training activities in different nations, rather than being tied to one host nation. At a more mundane level, the physical security of the assets against pilferage is inherently higher for items on a ship at sea than for a land-based depot. An operational commander might wish to ground load only a portion of the operational stocks, keeping the rest nearby in the littoral. Additionally, the Afloat Depots could be provided with naval escort during portions of an operation, if warranted by a given situation.

Chartered civilian vessels, rather than naval assets, are considered preferable, because the command and control, financial, and crewing challenges of naval vessels outweigh the marginal benefits to security. Ownership and the command and control of Afloat Depots do not present a significantly greater challenge than is the case for their land-based counterparts. In fact, since the warehousing of materiel is afloat, the small planning elements of the ASF Brigades need only direct the movement of the ship, rather than spending staff effort developing out-load plans for the land-based depots, and contracting for lift in time of crisis. Presumably, African control of the operational stocks would, from the AU perspective, be desirable. It is conceivable that the G8 would be able to assist in the crafting *of,* and provide financing *for,* time-charter contracts for vessels that would give the RECs operational control. In terms of furthering the 'African face'

of the capability, it ought not to be difficult to charter African flagged vessels for the requirement, or even to require that vessels be re-flagged as part of the contract.[25]

"One of the key operational advantages provided by Afloat Depots is flexibility."

Relative Costs

The cost of maintaining an Afloat Depot capability needs to be assessed, not only against its operational advantages, but against the cost of land-based alternatives. Time-chartered vessels offer advantages over owned vessels because they avoid the question of who owns the vessel, and they place the burdens of crewing and maintenance on the ship provider. Renewal of the asset can be accomplished with no capital construction. The limiting of the time charter to a reasonable period, say three years, would offer the AU an opportunity to adjust the capacity of the vessels as needs dictate. Although a chartered vessel does generate chartering, operations, and maintenance costs, these costs need to be compared against the capital construction, ownership issues, and the operations and maintenance (O & M) costs of land-based facilities. For instance, storage afloat for relatively long periods of time requires maintenance conditioning, particularly for vehicles, to guard against the effects of high humidity and salt. Such preservation levels are routinely maintained on US pre-positioning ships, and there is undoubtedly an associated cost involved. However, land-based depots close to the coast in littoral states would also need a similar level of conditioning or some degree of climate-controlled storage.[26] Trying to establish a precise figure for charter costs is difficult, because it varies by type of vessel, and it is highly sensitive to prevailing market conditions. However, a very preliminary and rough order of magnitude (ROM) check indicates that a vessel of the necessary size might be chartered for approximately USD 6 million to 10 million per year.[27]

To estimate the relative costs of a land-based depot, it is necessary to determine the size of the facility required. A land-based depot would likely not store everything in containers, but a ROM estimate of the space required might be based upon the 'double-stacking' of 20-foot sea containers (TEUs). A 30 percent 'broken stow' factor is assessed to allow for office space, lanes, and consolidation areas. Based upon the 1058 TEUs previously estimated as the requirement for 60 days of sustainment material, this would work out to requirement for a warehouse of some 110,000 square feet of storage space. Land-based depots are trickier to cost out because lease rates, particularly in Africa, are hard to determine, but at current Toronto prices (approximately $5.50/sq. ft.), the rough cost would be approximately USD 6 million per year.[28]

In terms of 'up-front' dollar costs, land-based depots would appear to have a modest cost advantage, when compared to the afloat alternative. Certainly, a great amount of more detailed analysis would need to be done to establish true costs, and the final amount undoubtedly would need to take into account a great many variables. However, this initial ROM estimation confirms what appears intuitively obvious; a premium is to be paid for afloat storage, versus a land-based option.[29] Nonetheless, while the AU would benefit from the greater operational flexibility afforded by Afloat Depots, the G8 countries may find the greater transparency and accountability offered by the time-charter contract and the greater security of the stores on the vessels more palatable.

Canadian Nexus

Canada will be expected to assist in the development of the ASF capability, because it is a G8 member nation. African countries will look to Canada to provide resources and/or expertise, and the other G8 nations will expect that Canada do its part in shouldering the burden. Canada could choose to offer assistance by promoting the development of the Afloat Depot concept. Although the CF has very little operational experience with Afloat Depots, it does have considerable expertise with expeditionary logistics, peace support operations, and the chartering of commercial vessels. For instance, Canada could partner with a particular ASF 'framework nation,' or REC, to assist with developing the specific logistic requirements for a particular Standby Brigade, providing expertise with respect to Theatre Activation capabilities and procedures, and assisting with the development of a contracting methodology and control mechanisms for the contracted vessels. Depending upon the level of ambition, Canada might also be able to contribute to funding the acquisition of sustainment materiel, or to the vessel charter contract.

Conclusion

There will continue to be numerous challenges to peace and security on the African continent in the coming decades. The AU desire is to develop a military intervention force that is capable of responding to these challenges, so that Africans are able to resolve African problems. The West, generally, and the G8 in particular, support such an initiative, and are willing to provide the financing and expertise to establish the enabling capabilities. Key amongst those capabilities is the sustainment

"To estimate the relative costs of a land-based depot, it is necessary to determine the size of the facility required."

of the ASF, and the Afloat Depot concept offers a practical solution to a practical problem.

A number of Afloat Depots are a better way to support the ASF than the currently planned system of land-based depots. Although they are probably more expensive to operate than land-based depots, the Afloat Depots offer a combination of operational advantages and relative transparency, accountability, and reduced risk, which ought to make them attractive to both the AU and those G8 nations providing financial assistance. For these reasons, Afloat Depots deserve further consideration in solving the AU's complicated logistics challenges with respect to supporting operations. By doing so, the AU forces will become a more credible and effective instrument for stability and peace support operations on the African continent.

NOTES

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3. African Union. Experts' Meeting on the Relationship between the AU and the Regional Mechanisms for Conflict Prevention, Management and Resolution. *Roadmap for the Operationalization of the African Standby Force,* (Addis Ababa, 22-32 March 2005), p. 4, at <http://www.africa-union.org/root/au/AUC/Departments/PSC/Asf/doc/ASF%20roadmap.doc>.
4. *Policy Framework for the Establishment of the African Standby Force and the Military Staff Committee (Part I),* pp 3-7. A sixth scenario, calling for rapid intervention to prevent genocide, was also elaborated upon, but was deemed to require a capable lead nation with standing high-readiness forces capable of opposed entry. "As a long term goal, the ASF should be capable of conducting such interventions without reliance on lead nations. This would require a standing AU multinational military HQ at above brigade level, plus the capability to assemble and deploy rapidly well prepared and capable military contingents."
5. *Ibid.,* p. 7.
6. African Union. *A Vision for the African Stand-by Force? A Draft Document for Discussion. Second Draft for Bereng Mtimkulu.* (Addis Ababa, 23 September 2005), p. 3, at <http://www.africaunion.org/root/au/AUC/Departments/PSC/Asf/doc/ASF%20visionSecond%20Draft%20Vision.doc>. Although Phase One was to have occurred by 30 June 2005, it was subsequently delayed until 2006.
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8. *Ibid.,* p. 23.
9. *Ibid.,* p. 32.
10. St. Petersburg G8 Summit Documents, "Update on Africa," at <http://en.g8russia.ru/docs/13.html.> "We have increased our support for African efforts to build a peaceful and stable Africa, including support for setting up the African Standby Force and technical, logistical and financial assistance on policy development to strengthen the overall capacity of African organizations to deal with conflicts on the continent."
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17. Shaw, p. 15.
18. Major General Julian Thompson; *The Lifeblood of War: Logistics, in Armed Conflict* (London: Brassey's (UK), 1991), p. 252.
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21. William G.T. Tuttle Jr., *Defense Logistics for the 21st Century* (Annapolis, MD: Naval Institute Press, 2005), pp. 92-93.
22. *Ibid.,* p. 94.
23. For instance, a September 2006 survey of Travel Advisories on the Foreign Affairs and International Trade Canada (DFAIT) website for the member states of ECOWAS revealed that seven of the 15 states suffered from some form of civil unrest.
24. International Chamber of Commerce, "Live Piracy Map," at <http://www.icc-ccs.org/extra/display.php>.
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28. Maura Webber Sadovi, *A Robust Canadian Economy Fuels Toronto's Commercial Space,* at <http://www.realestatejournal.com/columnists_com/blueprint/20060518-blueprint.html>. Figures converted to USD using exchange rates as of 26 September 2006.
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