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STRATEGIC MOBILITY, SPEED OR AFFORDABILITY?

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Introduction

The Canadian Forces has always been placed in a position rather unique amongst the nations when it comes to strategic mobility. Canada itself is a tremendously large and varied country only sparsely populated along a narrow southern band. As a consequence, political necessity and geographical imperative require a certain dispersion of military assets across the country. This dispersion (with an average of several hours by roads between bases) ensures that any CF operation, whether domestic or abroad, is expeditionary in nature and creates deployment, sustainment and redeployment logistic challenges that have become so routine that they have become planning assumptions.

After a number of deployments in the last 20 years and significant change in operations, the time has come to have a new look on how the CF moves. The crux of the problem lies in finding what mixtures of strategic assets are appropriate for the CF to enable timely, efficient and economically responsible employment. This short essay will try to examine the key points in such discussion through an examination of the three phases of operation where strategic mobility effect are noticeable with the goal of trying to find if there is any capability gap in the mobility asset the CAF presently possess and use. Each phase will be examined via the lens of criteria that affect lift, distance, timeliness, efficiency, cost, personnel and screened through the needs of each deployment phase. The reader will discover that recent addition to the CAF has improved the situation but that some gaps still need to be addressed.

To keep this essay within reasonable length, it will not examined deliberately planned domestic operations such as G8 summit and Op Podium (2010) which by virtue of their very long planning cycles and set dates allowed for more efficient approach and

maximum use of easily available commercial resources. Instead, we will look into the mission profile that is seemingly becoming the norm for the CAF, a response to domestically or international crisis.

From Op Friction to Op Apollo, a legacy of surprises

During the Cold War, Canadian Forces followed a rather predictable pattern of employments. Various contingency plans regulated potential NORAD and NATO deployments and Peacekeeping missions were a secondary task relatively easy to manage in size and resources. The fall of the Berlin wall and the end of the Cold War heralded a new era for the CAF. The first major international operation of that new era (Gulf war 1 – aka Op Friction) was not significantly different doctrinally than the Cold War. Described as a conventional state on state conflict with a relatively long lead time (Aug 1990 to Jan 1991), the operation highlighted two trends that would define almost all further deployment, unexpected deployment and flexibility in the type of force used.

In the following decade, subsequent operations would only highlight the ad hoc nature of each different crisis and the lack of easily definable "force package" required. Op Palladium (Bosnia) started as a rather conventional Peacekeeping mission to an immediate crisis but soon morphed into Peace enforcing and unfamiliar operation for the CAF. Op Echo, the response to the Kosovo crisis in 1999-2000, was equally expeditiously assembled on short notice and sent to Italy. Humanitarian mission such as Op Central (Honduras, 1998) and Op Torrent (Turkey, 1999) saw the newly created DART deployed in unforeseen natural disaster area. Domestically, Op Salon (Oka crisis,

in 1990), Op Assistance (Manitoba floods 1997) and Op Recuperation (Ice storm, 1998) also tested the flexibility of the CAF to deploy on short notice with little or no planning. With 9/11, the trend was set and the new political landscape the CAF would have to operate in was a chaotic and fast paced one.

Undoubtedly, the CAF managed these situations with brio and succeeded in their task but they each caught the organization by surprise and came with high political expectations of immediate result. The political pressure for an immediate answer to a new crisis put particular emphasis on readiness and speed of deployment. Unfortunately, traditional response based on the plan developed for a return to Europe in case of a Soviet attack, Op Reforger, or the rather sedate pace of deployment in peacekeeping mission were not adequate Even the relatively well defined humanitarian response developed in the form of the DART had to answer to very high political expectation of speed and effect. By product of a new interconnected and fast paced information world, Canada was not alone in this situation and immediate response was a political imperative for all western countries. This highlighted a critical flaw in the strategic mobility of any armies. Canada itself possessed only an aging fleet of C-130, a handful of CC-150[1] and no sealift of its own.

Deploying any unit is a compromise between mission nature, time factor, distance, duration, host-nation support and allied support.[2] A single aircraft has the benefit of speed over distance but is limited on payload and is costly. Ships have the

[1] Militarized version of the A310
[2] Rudd, David L. Strategic Lift: The neglected dimension of Canadian Defence policy, Dalhousie University, Halifax, April 1995.

benefit of high payload at a reasonable rate but are comparatively slow. This imperfect equation always created problem but in a landscape where speed of deployment is of the essence, the U.S. learned the experience the hard way the danger of timelines.

> *"a lesson learned from the Gulf War and Kosovo is that some ships cannot meet required timelines. During the Gulf War, eight fast sealift ships were tasked to respond on C-Day and C+1. One ship was 1 day late, another was 3 day late and a third was in overhaul and responded 9 days late. En route, the fast sealift ship that was pulled out of overhaul early suffered a series of boiler problems and was diverted to Rota, Spain for repairs."*[3]

Cost aside, airplanes have a significant appeal due to their speed but an always too limited payload translated into a mathematical conundrum. The equations of Mihram[4] show that over long distance and large freight / passenger requirement airlift only give the appearance of speed. In Canada, this was highlighted by the deployment of the 3 PPCLI battle group to Afghanistan in January 2002. Designed as a very light infantry unit sent to assist the U.S. 101st Air Assault Division, the 980 personnel and 40 vehicles were deployed using a combination of USAF C5 and C17, the first ferrying from Edmonton to Ramstein, Germany, the later from there to Kandahar. The airlift started on the 21st Jan and ended on 14th of March with declaration of FOC. The redeployment in Aug 2002

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[3] Hickins, Kenneth E. Strategic Mobility: The U.S. Military's weakest Link, Army Logisticians, nov/Dec 2002, Vol 34, issue 6, p35

[4] Mihram, Arthur G., A cost-effectiveness study for strategic airlift, Transportation sciences, Feb 70, vol 14, issue 1, p 79.

took an equally herculean effort counting 24 C5 over three weeks[5]. A ship loaded in Vancouver around the 21st of Jan date would have reach Karachi at the end of February and deployment by air or road from there would have led to approximately the same FOC date. Similar observation can be made for various other operations such as Op Athena and Op Mobile. The problem reside in the number of airplanes used, but even the use of costly charter, providing enough airframes could be rented, can only do so much as airport capacity at either end are reached.

> *"Airlift is fast in transport of lighter and smaller units but if used to lift larger formations such as a heavy brigade, the amount of sorties will be big. Aeroplanes are very expensive to operate and buy. Also the manning and maintenance cost are higher than other modes. The planned European airlift capacity of 200 A400M is likely to be able to deploy one mechanized brigade of 4500 in 20 days. This would require over one thousand airlift sorties."*[6]

This precarious balance between speed and efficiency would develop into even more serious problems over the course of the Afghan conflict as more and more equipment was required. Small force are easier to transport but can be ineffective, bigger and airlift is struggling.

> *"Throughout the Kosovo peacekeeping operation, U.S. forces encountered problems with deploying ships to the Balkans quickly. During Operation Desert Shield, 82nd Airborne Division troops from Fort Bragg, North Carolina, were*

[5] Op Apollo, 3 PPCLI BG Task Force Movement Table, ver 11.5 dated 17 July 2002.

[6] Weissenberg, Jon von, Strategic SeaLift Capacity in the common European Security and defence Policy, National Defence College, Helsinki, 2002, p 51.

deployed by air rapidly but with so little firepower that they were referred to jokingly as a "speed bump". And in Somalia, ships loaded with equipment were unable to offload because no ports in the area could accommodate them."[7]

Regrettably for public accountants, 21st century operations can seldom wait for the 2-3 weeks of sailing a ship would take to go into a theatre at a reasonable price. Politics is all about image and the process of deployment, however inefficient economically it might be in reality, is in itself a message. This favors airlift disproportionally and with the acquisition of 5 C17 Canada is in a relatively good position to deliver on political desire but these still fall short of the requirement to deploy an effective military force in reasonable delays. As Vasilescu mention, no nation, even the most powerful has enough airlift to satisfy both military and political needs.[8]

Canada played with the idea increasing its lift capacity in the form of a multi role ship, the JSS. But based on the close examination of the problem, it is obvious that such a ship would not have fulfilled the timeliness requirement of speedy deployment, assuming it would have been available at the time of the crisis.

The increase in number of airlifter and sealift assets which might be elusive in Canada but other solutions has been tried elsewhere to mitigate the problem of quantity vs distance and efficiency vs payload. A U.S. solution is to preposition material on a number of ships around the world that could sail to destination within reasonable time

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[7] Hickins, Kenneth E. Strategic Mobility: The U.S. Military's weakest Link, Army Logisticians, nov/Dec 2002, Vol 34, issue 6, p34

[8] Vasilescu, Cezar, Strategic Airlift capability: From theory to practice, Journal of Defense resource management, oct 2011, vol 2, issue 2, p67-76.

and fly personnel to location for link up. Unfortunately, this solution is out of reach for a military with limited equipment inventories.

Another interesting solution to increase the number of airlifter or sealift available through various agreement such as SALIS[9] in Europe or VISA[10] and CRAF[11] in the U.S. that enable military users to have direct access to commercial carriers on a preferential basis. Even if it corresponds to a need, without important financial commitment in peace time, the drawback of such arrangement is often its responsiveness to crisis and the natural reluctance of commercial carriers to go into conflict zone. These characteristics make this type of agreement more useful in the employment and redeployment phase.

With limited organic airlift and no significant sealift, considering the distance to potential theatres of operation and the political imperative of time, Canada has no choice but to rely on airlift has its first deployment response. Cost are not irrelevant but must submit themselves to the reality of these crisis.

From Bosnia to Afghanistan, time and space are harsh mistresses

The imperatives of politics may definitely favor airlift in the initial phase of an operation but these imperatives are less pressing during the employment phase, at least from a logistic point of view. Unsurprisingly, once deployed units requires a constant flow of spare parts, equipment, personnel and consumable to continue operating. Beyond a certain core of necessities (food, fuel, personnel and spare parts) the nature and duration

[9] SALIS: Preferential access to AN-124 airlift
[10] VISA: Voluntary Intermodal Sealift Agreement
[11] CRAF: Civil Reserve Air Fleet.

of the operation greatly affect the type and volume of sustainment required. Van Creveld observe that from pre-Napoleonic era armies foraging as they went to mechanization of armies before and during WW2 there was a tremendous shift and an explosion in the scope and variety of consumable required.[12] Since WW2, this trend has not subsided as modern armies become even more technologically advanced and voraciously require spare part, fuel, ammunition and food. Even though, fewer units are generally deployed in theatres, the material footprint of these keeps expending.

> *"The restructuring and modernization of America's military forces, particularly the Army, is also providing us with new strategic lift challenges. During the past decade, the U.S. Army significantly increased the lethality and the weight of its combat units. The three Army division type usually considered eligible for air deployment have increased in weight between 36 to 55 percent – light infantry divisions, from 11000 tons to 1500-; the 82nd Airborne division from 16000 to 22000; and the 101st Airborne division (Air Assault), 22000 tons to 34000."*[13]

These numbers, dating back from 1994, have already been exceeded and Canadian Forces is not immune to this trend. In the Army, each vehicle is being replaced by a heavier better suited vehicle as technologies evolve. The Coyote, weighing at 27000 lbs. and requiring an average of 500lbs of consumable (fuel and spare part) per day has

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[12] Van Creveld, Martin I. *Supplying War: Logistics from Wallenstein to Patton*, Cambridge University Press, 1977.

[13] Fogleman, Ronald R., Balanced Surface, Airlift, sealift, Defense 1994, issue 6, p 38.

been replaced by the LAV III which after modernization now weighs in at 51000 lbs. and a comparable increased requirement.

Numbers are telling, to sustain the Canadian battle group in Kandahar during kinetic operations, the amount of forward sustainment required flown in each month doubled between 2006 and 2009. The preference of the Canadian Forces toward airlift during the Afghanistan years clashes strongly with the Bosnia years where a steady flow of about 20 to 40 TEUs[14] (approx. 700000 lbs.,) where shipped to the harbor of Split and Dubrovnik every months. This was supplemented by fresh food and passengers via CC-130 air bridge from Italy at a rate of one flight a day.

The type of operation, geographic location (access to the sea) and relative security of lines of communication in these two operations accounts for much of the difference but these operations also underlined a much greater need for flexibility and responsiveness from the logistical line to adapt to operations and new requirements past the deployment phase. Vehicle rotation or changes, movement within the theatre or to adjacent one have become routine.

> *"As was observed in Operation Iraqi Freedom, the speed at which men and materiel can be repositioned in the theater of battle is and will be the key factor in conflicts. The days of massive buildups of men and warfighting materiel that took place prior to D-Day in World War II and even in the first Iraq war are long over. Focused logistics prescribes that in order to optimize the concept of dominant*

[14] TEU – Twenty Foot equivalent Unit, aka as a "SeaCan"

maneuver, precision engagement, and full dimensional protection, the logistics effort must be responsive, flexible and precise."[15]

From the ubiquitous "immediate operational requirement" supplies to duration of operation and unstable security in theatre, there is a strong requirement for airlift to provide regular sustainment which is well suited to sealift. Afghanistan being a land locked country didn't provide the opportunity of testing sealift option. The redeployment from Kandahar in 2011 only highlighted the danger and lack of security of land route to Pakistan and significant amount of material destined for return by ship was lost to pilferage en route.

Yet, it might not always be this way as Op Impact demonstrated. The RCAF contingent based in Kuwait is in secure location and has access to modern harbor and shipping lane. The difference is significant, airlift is still used at a rate of 1 C17 flight per week, mainly for passenger, immediate requirements and ammunition but a steady flow of TEU are sent via liner service to the harbor of Kuwait City. But liner service can be inflexible and not available and charter very expensive for the relatively few TEUs the CAF handles monthly for a deployment. [16]Op Hestia also highlighted the great potential that sealift can provide. A liner service containing 15 TEUs destined to Kingston, Jamaica was loaded within five days of the earthquake and arrived two weeks later, sufficiently early to have a positive impact on the crisis. Not constraint by a liner

[15] Streicher, Burton L and Steeples, Daniel D, Joint Gheater Logistics: maritime support, CAN, Alexandria, Viriginia, 2006, p 11.

[16] A charter ship was rented in 2008-2009 but the ship never transported more than 40 TEUs at the time out of a capacity of 1200.

schedule, a properly equipped RCN ship could have reached Haiti within 5 days of being loaded and self-unload even in a damaged harbor.

For Canada, airlift remains an important factor during employment phase, particularly during short duration mission or one with unsecured lines of communications but there is also a role for more sustained and economical flow through the use of sealift. The JSS, should it have been built would have been far too large for such mundane transportation of a handful of TEUs every months. Yet, the experience of Op Hestia and Op Impact demonstrate that a residual capability to transport some TEUs, the most common form of freight, could be a great capability for a future AOR. With a capability to transport up to 50 TEUs, the Berlin class expected to replace the old AOR possess residual capacity useful to the CAF. Although modest, this capacity could be a tremendous addition to the RCN in a multitude of scenarios.

From Kosovo to Kandahar, from the systemic to the chaotic

The redeployment phase is often brushed over with little interest. It marks the end of operations and has interest only insofar as the starting point to the next cycle of deployment. Yet, it often represent a larger undertaking that the deployment itself. To the initial lot of equipment must be added all the equipment and consumables added during the course of the operation. Some of it is damaged, other has been modified in place for specific use and now difficult to transport and the pressure is to return everything as fast as possible so it could be refurbished and made ready for the next operation.

As in the deployment and employment phase, the imperative of distance, timeliness, security and lift available play on the equation although with a new twist. Airlift resources are now gone to service other higher priority tasking, money has vanished reducing the possibility of charter airlift and political will is limited only to promised date of withdrawal. Technical requirements of repatriation to Canada also put stringent limits on timeliness and type of transport. To comply with Canadian and International laws, the equipment must be cleaned thoroughly and in in good condition. Ammunitions and weapons are submitted to even more stringent rules and must be dismantled for transport by commercial carriers. All these factors tend to favor sealift as the preferred method of return. Although airlift will always be necessary to return rapidly some critical or sensitive equipment, the economic and legal realities alone during that phase make sealift a viable option.

Without a RO/RO ship in its inventory, and little appetite in the RCN for such mundane mission, the CAF must rely on charters or Allied contribution to return the equipment to Canada. Allied ships are seldom used, simply due to their scarcity and availability so commercial charter are the preferred method but this is not without dangers.

> *"If anything confirmed the need for some organic CF sealift capability, it was the summer 2000 incident involving the containership GTS Katie. During the CF redeployment from Kosovo, the Katie was chartered to transport 500 tons of ammunition, including 390 containers for the battle group deployed there. Also on board were close to 600 CF vehicles (...) According to on shipping expert, penny pinching on the part of Department of National Defense, combined with the*

department's failure to examine sufficiently the nature of the charter contract and the histories of the subcontractors, led to the surprise dispute that stalled the vessel just outside Canadian territorial waters."[17]

This experience has marked the psyche of Canadian Logisticians ever since but with a v volume almost three times more of equipment redeployed from Afghanistan, there is no other real viable solution but to trust unreliable shipping lane. Or is there?

The United States have an accord with commercial carriers called V.I.S.A. which favors American shipping company in the attribution of contracts for such task. The U.S. Navy doesn't have to own any ships and call upon this agreement only when required. The EU, for its RDF is presently setting up a similar accord, likely with the Lloyd-Hapag line. Canada has been using the Standing Long Agreement (SLA) method for its airlift need for a number of years now but no such SLA exist for sealift. Under this system, companies can postulate and get their name on a short list providing the offer the service required. These accord last only a few years and the company is not bound by the accord to offer service if it doesn't suit it which leave Canada to the risk presented by unreliable contractor such as the owners of the Katie.

[17] Mitchell, Paul T., Joint Support Ship, Transformation or white Elephant. U.S Naval Institute Proceedings, mar 2004, vol 130 Issue 3, p 3.

Conclusion

The world has changed and for the foreseeable future, the pattern of deployment of the CAF will remain similar as the previous quarter of a century. The type of assets and mission might be different but they will always present themselves wrapped in the two axis of crisis and need for flexibility. Recently, Op Impact demonstrated that in a true Clauswetzian legacy, political timeliness is as important if not more than military effect, at least initially.

The CAF also needed to change, to follow suit with the technological and tactical race on the battlefield. This has created tremendous impact on the way logistic and particularly movement is handled. Flexibility and speed are more important than ever but in an economically depressed world, so are the economy of mean and the budgetary bottom line.

In this short essay, we have seen that while always insufficient, the CAF has acquired some of the tools that help it fulfill its mandate and the political objective of its master but the legacy of Afghanistan has also created a high dependence on airlift and particularly charter airlift. Except for the initial phase, in particular security situations and for critical equipment that is time sensitive, airlift is not the most efficient or economically responsible way of transporting equipment. Canada needs to explore the sealift option more thoroughly and secure access to reliable solutions. A dedicated ship is probably unaffordable and distasteful in the present climate but the RCN needs to consider with great care a residual capability that would allow it to supplement the rest of

the CAF. Furthermore, the creation of an accord like SALIS, but applied to sealift could be a very interesting venue for a number of smaller military organizations.

Deployment of the future will certainly face the same problem as today, or as yesterday, too much to move, not enough to move it, never enough time but like the changing world, solutions that give the flexibility and mitigate surprises are the hallmark of good logistic.

Appendix 1: Strategic Airlift capability: From theory to Practice table of comparison[18]

1. Long term procurement
   Pros:
   - Greatest level of assured access and timeliness/ responsiveness

   Cons
   - High cost flexibility
   - Maintenance and other logistic support requirements

1.1 Joint Production
   Pros:
- Economies of scale
- Gains form specialization
- Increased affordability for individual nations

   Cons:
- Delays
- Coordination issues
- Commitment issues

1.2 Off-the shelf purchasing
   Pros:
- Wider choice
- Less costly than production
- Speedy acquisition

   Cons
   - Specifications may not always fit requirements
   - Does not support national defense industrial base and preservation of national technical and industrial capabilities

1.3 Long term leasing
   Pros:
- Simpler acquisition than owning
- Assured access

[18] Vasilescu, Cezar, Strategic Airlift capability: From theory to practice, Journal of Defense resource management, oct 2011, vol 2, issue 2.

- Financial benefits: avoids large initial capital outlay
- Support structure may be less costly than owning

Cons:
- High cost (overall more expensive than ownership)
- Potential leasing restrictions on operational use of assets

2. Short term leasing and chartering.
   Pros:
- Simpler acquisition than owning
- Allows long term control and assured access to assets and availability
- Financial benefits
- Support structure savings

   Cons:
- Expensive option
- Problem with timely access to assets for the immediate deployment phase, but may be adequate for later phases
- Limited asset availability depending on requirement
- Restriction related to security
- Potential high insurance cost for operation in hostile environment
- Quality/suitability problems
- Diminished political control

3. Government-contractor agreements to use commercial lift assets
   Pros:
- Less expensive than owning or leasing assets
- Assured access to airlift capability provided

Cons
- Costly retainer contracts
- Problems with timely availability
- Reluctance of commercial operators to go into dangerous situations
- Suitability problems
- Need for government to provide strong incentives to attract interest of commercial carriers

4. Public-private partnership
   Pros:
- Financial advantages
- Advantages from transfer to risk to private sectors

Cons:

- Need to government to provide incentives to the private sector

5. Pooling
   Pros:

- Flexibility, modules can be assembled in many ways
- Less costly than national / multinational purchase or lease
- Political feasibility
  Cons:
- Coordination, module assembly might be complex
- Requirement for nations to act promptly to make committed assets available in a timely manner
- Sovereignty and concerns over control

6. Role specialization
   Pros:

- Potential greater focus and competence through specialization
  Cons:
- Politically controversial; division of labor require large amount of trust, willingness to relinquish national sovereignty
- Potential complexity of role integration.

Appendix 2 Op Apollo, 3 PPCLI BG Task Force Movement Table, ver 11.5 dated 11 March 2002

CHALK PLANNING TOOL

Actual Data
D-Day: 20-Jul-02
Chalks: 23.6
Days: 11.8
Completion 31-Jul-02
Pax in MPL ? Yes
Sim or Real: Real

TFMT Data:				Flow Data:			
Tot Weight:	2590798.8			Tot Wgt:	1826125.2		70.6%
Tot Pax:	167370.0	Tot Pax:	797	Tot Pax:	167370.0	797	100.0%
Tot Veh:	1505953.2	Tot Veh:	129	Tot Veh:	1503555.2	128	99.2%
Tot Plt:	917475.6	Tot Plt:	170	Tot Frt:	157200.0	2	1.2%

MPL Data		
Total MPL	2640000	24
Used MPL	1826125.2	17
Unused MPL	811874.8	7.4
Frt Remainin	762673.6	6.9
Required MP	-49201.2	0.4

Desc:

Iltis	12	100%
LSVW	26	100%
MLVW	30	100%
HLVW	0	#DIV/0!
Traile	37	97%
A Veh	17	100%
Other	7	100%
Total:	129	99%

Frt Plt	98	2%
Ammo Plt	57	0%
DC Plt	15	0%
Total:	170	1%

Day:	Date:	Chalk	AC Type	MPL	Pax:	Tot # Veh:	Veh Wgt:	Veh L:	Fr Plt:	DC Plt	Ammo Plt	Bag Plt	Fr Wgt:	Note:	Total Weight:	Unused MPL:	Unused Space:	Plt Position Avail:
	Recce																	
	Route Act																	
	Advance																	
1	20-Jul-02	1	C5	100000	70	4	70000	902	0	0	0	3			93700	6300	1308	33
	20-Jul-02	2	C5	120000	72	3	86680	776	0	0	0	3			110800	9200	1371	33
2	21-Jul-02	3	C5	100000	72	2	15120	332.8	1	0	0	3	37200	ROWPU, CLT	76440	23560	1548.6	32
	21-Jul-02	4	C5	120000	73	3	71160	759	1	0	0	3	18000	Water Bag & NYALA	113490	6510	1335.5	32
3	22-Jul-02	5	C5	100000	73	2	59000	516	0	0	0	3			83330	16670	1501	33
	22-Jul-02	6	C5	120000	68	3	87340	764	0	0	0	3			110620	9380	1377	33
4	23-Jul-02	7	C5	100000	69	4	67120	834.4	0	0	0	3			90610	9390	1341.8	33
	23-Jul-02	8	C5	120000	73	3	89640	794	0	0	0	3			113970	6030	1362	33
5	24-Jul-02	9	C5	100000	71	7	45500	1380.5	0	0	0	3		FEL	69410	30590	1068.75	33
	24-Jul-02	10	C5	120000	71	6	42260	1206.2	0	0	0	3			66170	53830	1155.9	33
6	25-Jul-02	11	C5	100000	70	6	29980	1124.4	0	0	0	3			53680	46320	1196.8	33
	25-Jul-02	12	C5	120000	15	8	43720	1479	0	0	0	1			49870	70130	1107.5	35
7	26-Jul-02	13	C5	100000					0	0	0			Ammo Flight		100000	1891	36
	26-Jul-02	14	C5	120000		10	47586.4	1832.4	0	0	0				47586.4	72414	974.8	36
8	27-Jul-02	15	C5	100000		8	87518.4	1830.6	0	0	0				87518.4	12482	975.7	36
	27-Jul-02	16	C5	120000		8	87790	1809.6	0	0	0				87790	32210	986.2	36
9	28-Jul-02	17	C5	100000		9	90794	2088.4	0	0	0				90794	9206	846.8	36
	28-Jul-02	18	C5	120000		8	82802	1878.2	0	0	0				82802	37198	951.9	36
10	29-Jul-02	19	C5	100000		8	87469.6	2147	0	0	0				87469.6	12530	817.5	36
	29-Jul-02	20	C5	120000		8	76639.4	1809.6	0	0	0				76639.4	43361	986.2	36
11	30-Jul-02	21	C5	100000		8	67160	1736	0	0	0			MLBU	67160	32840	1023	36
	30-Jul-02	22	C5	120000		5	82005.6	1418	0	0	0				82005.6	37994	1182	36
12	31-Jul-02	23	C5	100000		2	27859.4	557.2	0	0	0			MRT	27859.4	72141	1612.4	36
	31-Jul-02	24	C5	120000		3	58410.4	580.6	0	0	0			Frt Lft	58410.4	61590	1600.7	36

Chalk #	AC Type	Iltis	LSVW	MLVW	HLVW	Trl	A Veh	Special	Total Veh	Fr Plt:	DC Plt	Ammo Plt	Bag Plt	Total Plts
1	C5		1			1	2		4				3	3
2	C5						3		3				3	3
3	C5			1				1	2	1			3	4
4	C5						2	1	3	1			3	4
5	C5						2		2				3	3
6	C5						3		3				3	3
7	C5	2					2		4				3	3
8	C5						3		3				3	3
9	C5	2	2			2		1	7				3	3
10	C5		4			2			6				3	3
11	C5		3			3			6				3	3
12	C5	4	3			1			8				1	1
13	C5													
14	C5	2	4			4			10					
15	C5		4	2		2			8					
16	C5			4		4			8					
17	C5		2	4		3			9					
18	C5			4		4			8					
19	C5	2	2	2		2			8					
20	C5			4		4			8					
21	C5			3		4		1	8					
22	C5			5					5					
23	C5		1	1					2					
24	C5							3	3					

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