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PRELIMINARY SURVEY

AIR OPERATIONS - OVERALL LOGISTICS

USAID - LAOS

MANAGEMENT ENTERPRISES, INC.
Oklahoma City

DECLASSIFIED PER
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Date: 1-10-91
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LAOS LOGISTICS
Preliminary Survey

The seeds ye sow, another reaps.
The wealth ye find, another keeps.
The robes ye weare, another wears,
The arms ye forge, another bears.

- Shelley

The streams ye dam, another fuses
The roads ye build, another uses.

- Harris

INTRODUCTION

Since those for whom this report is intended are familiar with the logistics situation in Laos as it presently exists, it would be redundant to detail all of the data that was examined and to set down in this report all of the things that were learned. For this reason, the report itself will make reference only to those elements of data and information which are pertinent to the conclusions and recommendations which are being made. Substantial quantities of data, reports and information gathered in Laos were reviewed and studied, and much of this material which has no direct bearing on the recommendations has been omitted from this report. The survey trip was intended to gather preliminary information from which analysis and synthesis might produce constructive recommendations.

This Introduction will outline only the sources from which data was obtained. The Conclusions which have been drawn from these observations and some specific Recommendations for action are summarized separately.

Before proceeding further, a word of appreciation is clearly in order for the cooperation and helpful attitude on the part of everyone with whom I worked. The interest and desire on the part of Messrs. Mendenhall and Sullivan were reflected throughout the Embassy and USAID. This made it possible to secure, in a very short time, the necessary background and information which serves as the basis for the suggestions in this report. The presence of Mr. Frank Osmanski was invaluable. His background and experience, together with a broad understanding of the USAID goals enabled him to zero in quickly on areas for constructive exploration.

Discussions were held with the following gentlemen: Ambassador Sullivan, USAID Director Mendenhall, and Messrs. Mavro, Cody, Cooper, Holding, Tribble, Ruoff, Cole, Chapin, Sparks, Leonard, Hickler, Dunn, Brigida, Cameron, Volk, Gillis, Schull, Krohn, Crone, Sweet, Williams, Thomas, Gullion, Haffner, Tucker, Stewart, Keen, D'Amato, plus Murray and Fluker in Bangkok as well as most of the supervisory personnel of Continental Air Services.

In order to gain a complete perspective of the logistics operation, field excursions were made to observe the railhead at Nong Khai, and the Mekong barge operation to Tenaling on the Laotian side. (Thadua which is 1 km downstream is used when water level is low.) In addition, I flew as an observer on a number of aircraft operations including drops in L382B's, C-46's of Continental Air Services, and miscellaneous other operations up country in L382B, C-47, Pioneer, and Porter aircraft as well as drops and other flights in Air America Caribous and C-46's. Considerable time was spent in observing CAS and ATOG operations and activities.

CONCLUSIONS

1.

There is considerable inefficiency in the present air supply operations which is reflected in low aircraft utilization, cancelled schedules, high loading and unloading costs, high inventory levels of certain airlift items, wasteful manpower practices, aborted missions, and voluminous paperwork.

2.

Most of the problems observed are amenable to correction by use of good management practices and common sense. Many of these problems exist because of lack of co-ordination between ATOG, the Contractors, USAID and the Royal Lao Government.

3.

The L382B's have had an expensive and costly (to the Contractor) shakedown period. Though at some economic disadvantage for the type of extremely short haul for which they are being used in Laos, they have performed well. With adequate utilization, they would be economically feasible to use on a continuing basis, and if thus available, would offer significant advantages to USAID because of their unique capacity, speed and dimensions.

4.

Emphasis on reducing air support costs have resulted in piecemeal approaches within USAID, and overall systems evaluation of the logistic problem has not been sufficiently explored. Where flight hours can be reduced and air support costs lowered without introducing other diseconomies that more than offset the savings, they should, of course, be reduced. It appears, however, that the ultimate overall cost of relative increases or decreases in airlift hours has not been thoroughly equated to the total picture.

"We've got to do it cheaper, even if it costs more." This attitude seemed reflected by some USAID personnel who simply took Mr. Mendenhall's memo of February 8, 1966 as a directive to cut air costs 'no matter what', rather than a suggested guideline when no offsetting justification existed for the use of air.

RECOMMENDATIONS

1.

Revise USAID reporting responsibility to permit Chief Air Support Branch to report directly to the Director, USAID. In view of the relative monies involved in the air support operation and the significant part of the overall USAID budget which they represent, this is a logical action.

2.

Replace existing Air Support Branch Chief with an experienced freight management executive who will act on his own to correct many of the present problems and who will bring to the attention of his superiors in USAID those problems that are

beyond his authority to correct so that necessary changes can be made within USAID and/or RLG.

3.

Eliminate ATOG as a function of Air America and re-institute it as a function of ASB. The use of a private contractor is recommended, but it should be independent of both Air America and Continental Air Services.

4.

If the L382B's are retained on a minimum use basis, it is apparent that USAID has available more lift than is required. To correct this, the C-47's to the extent possible and then C-46's should be reduced.

5.

The suggestion that a sub-ATOG be established at LP has been considered. At first glance, it would seem that a substantial savings in air costs could be made if this were done. In order to make positive determination of this point, a linear programming model would need to be established and optimum allocation of drop sites for supply from either LP or VTE would have to be made. Such a detailed exercise is beyond the scope of this report. A preliminary examination based upon short haul characteristics of aircraft being flown would

indicate that the sub-ATOG at LP should be re-examined after ASB and ATOG organizational changes have been made.

6.

Present road-building programs in Laos should be re-examined. The lessons not only from our experience in Laos, but also of Viet Nam have clearly demonstrated that under the present circumstances in these countries, roads are two-edged swords. Money spent on roads is likely to be at least as useful to the Pathet Lao as to our friends and ourselves, and a good case could be made that many of the roads are more valuable to the enemy than to us.

7.

A willingness to underwrite some of the more sophisticated airborne navigational aids could improve the productivity and reliability of our present airlift which cannot be offset or duplicated by the enemy. Such a stepped-up utilization of our air capabilities with reduced outlays on roads could well result in better overall logistics for us at lower overall costs and expenditures.

8.

The Mekong River is the single dominating fact of any logistical study of Laos. The development of this river and the

plans of the Mekong Committee of Thailand, Laos, Cambodia and South Viet Nam are interesting long-term projects. However, they are of only academic interest in the examination of the current tactical situation. One aspect which seems to warrant further study is the possible use of Hovercraft and/or Turbo-craft which could be available and in use in a very short time and on a practical basis. Ton/mile costs are high on such vehicles, but practically no infrastructure is required to support them, and properly used, they could transform the Mekong into a transportation artery that would become the backbone of Laos.

9.

Movement of goods from Thailand and/or surface from the States via the port of Bangkok does not offer much immediate opportunity to improve Laos air operations.

EXISTING OPERATIONS - LAOS

At the present time the air support operations total an average of between 6000 and 7000 tons per month plus approximately 10,000 passengers. Major categories are D/E Cargo 40%, Neutralist and Refugee Rice 33%, FAR Rice 2%, and pure USAID, 25%. With the exception of FAR Rice, this traffic is processed and handled for loading by ATOG. FAR Rice which is delivered directly to FAR upon clearance at customs warehouse is not in USAID's hands from this point on. When flights are scheduled for FAR Rice using either grant or leased C-46's operated by CAS, the rice is brought planeside by FAR personnel. With this exception, cargo is brought to the ATOG warehouse and dispatched from that point to planeside for loading which ATOG accomplishes for Air America. A technicality prevents them from loading

CAS aircraft, so duplicate loading crews are required by CAS which would be unnecessary if ATOG would furnish CAS with a hold harmless agreement so that their personnel (ATOG) could actually enter the CAS aircraft. This is an example of a detail which adds to cost which I am satisfied a determined ASB Chief could resolve.

Satisfactory over-the-road operations exist for carriage of cargo from Vientiane to Vang Vieng and the continuance of this road to Luang Prabang is contemplated for completion within the next two years.

Barge traffic on the Mekong is not satisfactory. During the rainy season with high water, barges can negotiate the Mekong between Vientiane and Luang Prabang, but security on the route is not adequate. Charges fun to $56.25 per ton to LP and $57.08 to Sayaboury. During the dry season barge movement is almost academic because of the shallow draft and charges from VTE run to $91.25 per ton to LP, $96.13 per ton to Sayaboury and $116.35 per ton to Ban Houei Sai. Rice is available for delivery from Thailand to river ports in Laos in single bags at $133.51 per ton at Savannakhet, $136.42 per ton at Vientiane, $137.87 per ton at Pakse, and $159.18 per ton at Luang Prabang. Triple bag rice averages $24.00 per ton in addition to the above prices.

Such surface delivery is reasonably reliable except for the Luang Prabang deliveries which are made via Chiang Rai in Thailand thence road to the Mekong near Ban Houei Sai and thence barge downstream to LP. These shipments are subject to occasional interference by Pathet Lao. Delays and some diversion of a few bags is not uncommon.

A daily north-south schedule is operated in both directions from Vientiane with C-47 type aircraft. (See Appendix A) Northbound, the flight operates to Vang Vieng, Luang Prabang, Sayaboury and return; while Southbound, it operates to Paksane, Thakhet, Savannakhet, Pakse, Attopeu and return. The flights carry passengers and cargo.

There are no railroads in Laos, and the road structure is very limited. As indicated, Route 13 North from Vientiane is open to a point above Vang Vieng. Route 7 runs from unimproved 13 above Vang Vieng through Moung Soui to the East while short sections have been completed both East and West from VTE along the river. Route 13 South from VTE to Savannakhet is not satisfactory, but South of Savannakhet is generally an all-weather road paralleling the river to the Cambodian border. Any examination of the country emphasizes the dominance of the Mekong as the logical communications mainline for the nation.

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The transportation possibilities on this river should not be held up pending the development of the power and flood control infrastructure. Special purpose vehicles such as Turbo craft (water jet boats) and Hovercraft may have immediate applications.

In order to put these various forms of transportation into perspective, a few statistics would be in order. Average costs for air delivery in recent months amounted to approximately $160.00 per ton, and based upon round-trip mileages for missions averaging just above 300 miles, we are looking at a cost of 54¢ per ton mile. In April 1963 the cost per ton airlifted was $275.00, so there is substantial improvement to report over the last several years. (See Appendix B)

In order to show still further savings, most of the effort during the past few months has been concentrated on cutting back total flying time. (See Appendix C) More effort should be spent in improving operating efficiencies and providing better co-ordination between all the various air customers. It is absolutely essential when something goes wrong that ATOG, ASB or the Contractor, by themselves, cannot remedy, that steps be taken to avoid a recurrence by reports and recommendations to top levels in USAID for necessary action.

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For example, last April 6, FAR began delivering very substantial quantities of vegetables on the grass behind the Continental ramp. About 4:30 p.m., ATOG called CAS to ask if they knew about it, which they did not. Meetings and conversations followed with agreement finally forthcoming that ATOG would attempt to palletize the stuff during the night for early morning loading on the L382B for LP The best that could be worked out resulted in one L382B away from the ramp at 8:15 a.m. the following morning. If this had been properly co-ordinated, the first ship could have been away by daybreak. It is clear that ATOG and CAS personnel did everything they could once they found out about it, but it would have saved a lot of time if FAR had gotten in touch with somebody and set the thing up.

The point of this criticism is that this sort of co-ordination lack goes on all the time. What is needed is a Chief for ASB who will see that reports of this nature get to the Director or the Ambassador so some attempts can be made to avoid repetitions.

Another example of need for working together involves FAR rice drops which are monitored by an on-board group of FAR representatives. If, for reasons of weather or improper signal or inability to find the drop site, it becomes necessary

to abort, there have been occasions when an alternative drop could have been made for refugee or neutralist requirements in the area. In this case the FAR rice thus used could be paid back from stocks of neutralist or refugee rice in the ATOG warehouse. However, under these circumstances, no such alternative drop is permitted, and the aircraft returns to VTE with the original load aboard. It is not certain whether or not Ambassador Sullivan could get this sorted out with the FAR, but unless he hear about it and is given a proposal for handling it, which he can submit to FAR, there is no chance to correct things. These are the sort of things that go wrong, and under the present leadership in ASB. nothing happens.

Similarly on April 6, the FAR scheduled 4 trips for rice to Moung Soui for delivery to the neutralists. The aircraft schedules were set up, but when loading time came, the trips were cancelled because ATOG had no neutralist rice in the warehouse. Here again, CAS can't be blamed for inefficiency nor can ATOG be blamed if they had no rice to load. However, the facts show that the Requirements Office has not had any neutralist rice purchases since January 1 this year, and by agreement between RO and Refugee Relief, the latter organization was supplying rice for

neutralist needs. However, the Refugee purchases were planned on the basis of estimated RO needs and the actual RO use was running above the estimated figures, so a shortage occurred.

Simple management inquiries would have discovered this in time to either correct or have set alternative schedules for the aircraft. However, this sort of hodge-podge continues without anyone doing anything to correct it, because those who are in a position to take corrective action don't learn about it. Management of this operating facility must be alive, interested, know what is going on, and be willing to do something about it to get corrective action. We do not have this kind of management now.

The magnitude of these problems can be realized when the facts show that such last-minute cancellations occur frequently - three to four times a week, according to CAS, and twice a week admitted to by ATOG. USAID must realize that the lack of direction given to ATOG by present ASB Chief does not simply act to inconvenience the Contractors. It reflects substantial cost increases which must be and are covered in the hourly rates set by the Contractors to USAID. The remedy is not to be found in a detailed set of instructions to be drawn up as a guide to be used by ASB. The answer lies in competent leader-

ship for this function with a good manager who knows what is going on and what to do about it.

The practice of holding ASB operations meetings each evening has been developed in order to plan the following day's schedules. These meetings should be held earlier in the afternoon so that if questions or difficulties come to light, there will be time to deal with them while cognizant people are still available in their offices. The practice of scheduling aircraft in accordance with minimums required for Air America aircraft produces the inequities between Contractors which cause difficulties. As long as ATOG is an Air America function, it is inevitable and the personnel concerned cannot be blamed for acting like human beings. One instance occurred where I wrote down the actual words of the Chief Air Support Branch in connection with the scheduling of aircraft in the ASB operations meeting. An Air America C-123 had just been listed for a schedule, and by way of explanation, Mr. Sparks looked up and said to me, "Naturally, we're going to take care of our own planes first". Naturally.

The point to criticize here is not the way they are doing it, but rather, the system whereby ASB and ATOG attempt to schedule

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in the best interests of USAID while one of the group is an instrumentality of Air America.

ATOG needs to be an independent group free from influence by either Air America or Continental Air Services. ASB needs to be set up within the USAID organization with direct responsibility to the Director. ASB needs to be headed by a man who is on top of his job. It is not sufficient to have dedication and competence in the person of the Ambassador and the Director of USAID. The failure to recognize the nature of the internal problems in ASB probably stems from the reporting channel through the Executive Office although since I did not spend any time in this office, I am reluctant to make a judgment on this.

This principal problem and its obvious remedy is not only apparent to the outside observer, but it is well known to many people on the scene within USAID and among Contractor personnel of both companies. I do not wish to give the impression that with two simple magic strokes of the pen everything will be solved, because it will take some hard work and some action will be required at the Director's level and at the Ambassador's level as well. Given the information to act upon, these gentlemen can then do what

is possible to secure the desired co-ordination within USAID and the Royal Lao Government. Such action which can be taken immediately to restructure the place of ASB within USAID and to replace its Chief with the right individual should result in improved efficiencies and cost savings to USAID of 8% to 10% of present Contractor costs by more effective use of equipment and elimination of much waste activity.

The problem of the L382B's is just that it is being looked at as a problem. Instead, we should be (within USAID) talking about the opportunities of the L382B's and by this time, sufficient valid justification would have been presented to the Ambassador to warrant a decision to retain them. Since the option to accept the Continental offer for their continued employment runs until 1 June, it is imperative that USAID do some soul-searching on this subject. Since I have been asked to examine this question, I am setting down some qualitative and quantitative aspects that may prove useful.

The first point is the operational ability of the aircraft. Experience to date would indicate that these planes can do most missions as well and some better than any other air-

craft in either fleet. In addition, there are some things the L382B's can do which no other aircraft in the area can do at all. Demonstrated ability to locate drop sites and accurately drop the load is no longer a question. The navigational aspects are probably as good as any other aircraft used for this purpose. It is true that they are untried in the rainy season. From a point of view of locating targets, there is no reason to doubt their value on the same basis as C-46's and 123's. The remaining question for wet season operations involves not drops, but landings on unpaved strips. Here, it would seem prudent to discount their ability to land on the same basis as smaller aircraft, but this is a matter of degree which should not be a major drawback. Clearly balanced against this, however, is their ability to do in one or two trips what other aircraft would take many trips and several days to accomplish. The possibility of the sustained periods of dry weather during the rainy season to permit limited operations of L382B's versus expanded operations of other aircraft would seem to be a stand-off.

On the economics of the operation, there is general acceptance of the idea that if the loads are available and utilization can be secured, the L382B's are the most economical airlift

available in the area. If other aircraft are cut back (C-47's and C-46's) to bring the total Contractor lift in line with USAID requirements, then the loads will be available. Utilization to the extent required for the Contractor minimum will be no problem given adequate management and leadership for ATOG and ASB.

A few specifics may be worth examining. During the period when L382B's first came to Laos until April 8, there were only two aborted rice drops. The first of these involved two DZ's on March 18 with 61R and after initial orbiting over the first DZ with no signal, the aircraft proceeded to the second DZ where again, no signal. The aircraft returned to the first DZ and circled until minimum fuel, and then proceeded to alternate (LS-178) and dropped 5 of the 22 pallets on board. If the pilot had thought it advisable to cut his time at the DZ's, hoping for a signal, he could have dropped all 22 pallets at LS-178, but he elected to stay over the DZ's as long as possible. Actually, this is not an abort due to weather, even though the DZ's were obscured by smoke with visibility at one-half mile.

The second abort with L382B's occurred on the following day,

March 19. 61R was assigned Meo rice drops at LS-33, LS-50, LS-29, LS-173 with alternates at LS-46 and LS-192. The entire area was covered by low clouds, and the load was returned. Weather was restrictive so that STOL aircraft and helicopters did not operate on this day. Although this was a bona fide abort due to weather against the L382B it is also clear that it would have been an abort for any other aircraft.

There have been some comments about rice coming down on huts after 382 drops. On two occasions hut damage was involved due to long drops. Earlier drops involved a loss of 11 pallets downwindfor a drop on LS-11 which was caused by a faulty cut strap that failed. In the beginning operations, some short drops caused incidents including one case where five pallets were not recoverable, but it seems reasonable to conclude that the learning curve on this aircraft has been at least as good as earlier smaller planes and possibly better Investigation into tumbling patterns on 11-high stacks (on L382B's) versus 9-high stacks on 123's has shown that the height of the load has no bearing if balanced flight was maintained.

During the period January-March 1966, CAS experienced 13 rice

aborts with C-46 aircraft of which 5 were wrong signal and 8 were weather. This would seem to make a pretty good case for 382 reliability from an operating point of view.

The next question with respect to this equipment is maintenance dependability. An analysis of the NORS (non-operating rate due to supply) from 19 November through the end of March, shows 9 weeks with NORS zero. The last two weeks of December checked in with 78.5% because of the tire shortage. This - plus the brake hose problem - has now been caught up. The initial trouble with starters has been remedied with daily servicing and supply is catching up. Engine flame-out problems associated with fuel control units has been corrected by rewrite of start procedure. In general, it seems obvious from a close examination of the problems that CAS has been on a learning curve with this aircraft, and we are now beginning to flatten out. Operations at LP during the runway rebuilding there will continue to cause tire problems. It is like landing on a bed of nails and when the brakes go on, tires get cut up. However, even the unusual requirement for this usage has now been met.

There is ample reason for question on this maintenance point based on the first few months' operations, but the analysis

provides confidence of the aircraft's ability to perform well and stay in operation now that provisioning has been licked. At Ambassador Sullivan's suggestion, the field service activity reports from Lockheed covering C-130 aircraft in operation throughout the world was also studied in connection with this analysis. Sample NORS rates for first week of February 1966 are shown on Appendix D. These readings are for the first week of February 1966, a period when the CAS NORS was 50%. Considering the number of the above examples at the end of a long pipeline, it seems logical to expect the CAS level to hit somewhere near this average or better.

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In considering whether or not USAID should step up the utilization minimums necessary to contract for the 382B's a good deal of weight should be given to those tasks which involve outsize shipments. The experience of the Public Works Department are perhaps the best illustration of such examples. (See Appendix F) According to Mr. Cole, the case of the airlift requirement last November 18 to Moung Soui is duplicated about 10 times per year. In this case an initial total weight of 145,000 lbs. required 12 trips with C-123's at a cost of $6300. The load could have been carried in three trips with the L382B at a trip cost of $1100 each or a total

of $3300. A total of 33 man-days of U. S. personnel and 140 man-days of local personnel were required to dismantle transport and reassemble the equipment at Moung Soui for a direct cost of $5,126 for the movement. The cost outlay for the movement by 123 was therefore just at $8,126 more than it would have been if the L382B had been used. In addition, a total of 10 days' elapsed time on the project were lost. This is a very dramatic savings and yet, Mr. Cole estimates that a savings of this magnitude would occur on the average of 10 times per year. In addition, Mr. Cole estimates that on the average of once a month some movement will occur which would utilize the L382B on a roll-on roll-off basis which would otherwise require dismantling to haul on any other aircraft available to USAID. The savings from such examples have not been projected, but added to the Moung Soui type of movement, it would be reasonable to assume dollar savings in Public Works of over $150,000 annually, not including the value of time saved.

How many more such examples throughout the USAID requirements might develop is subject to conjecture, but it is reasonable to expect that a number would exist. The movement by Italia Thai of the asphalt plant to Luang Prabang

is another example. In this case the tank itself which could not be further dismantled just barely fit in the Lockheed, and it could not have been transported in any other aircraft available in Laos.

The movement of troops for Royal Lao Government has shown on a number of occasions the advantage of the L382B, and it can be expected that such instances will continue in the future while the use of these ships for vegetable hauls from time to time can be of critical importance. By phasing out several C-47 and C-46 type aircraft, the addition of the L382B's to the Contractor fleet on the basis of the terms offered seem to present a good opportunity for USAID. Any other requirement for the aircraft not covered by the above examples would only reinforce the case for the use of the Lockheeds. If this decision is made by USAID, it should be done with the knowledge that some real efforts will be needed on the part of department heads to get maximum benefit from their availability. Some imagination and ingenuity should be brought to bear on their possible use. As indicated earlier, the possibility of having the 382B's does not present a problem, but an opportunity. The maintenance reliability and operational dependability have not yet been completely proved, especially as to rainy season operations

and yet there is more than adequate evidence to support the conclusion that the aircraft will perform satisfactorily. The expensive part of the learning curve is behind us, and it has been paid for by Continental Air Services.

In my discussions with the Ambassador before leaving Vientiane, I urged that the 382B's be put under contract as offered by CAS, but warned that my responsibility to Mr. Six made it necessary for me to recommend to him that he either withdraw the aircraft entirely or offer them at a substantially higher rate than the present terms being explored. The incredible tire damage at LP and general wear and tear on the aircraft is such that a much higher rate should be charged. The type of cargo being carried inevitably takes a heavy toll in aircraft maintenance. A recent case where a load of dust suppressant began to leak and permeated the floor structure is an example of the kind of costly wear and tear on the aircraft. The environment and exposure to large numbers of unsophisticated passengers and bystanders adds to the hazard. Recently while on the ground at Udorn, the locking lugs on the rear ramp were found extended. If retracted in this position, serious damage would result. It is true that the loadmaster would have noticed this before closing the ramp, and it would have

been corrected then, but the hazard still exists that with large numbers of Lao milling around the aircraft when it is on the ground, these things and other similar things can and do happen.

Although the L382B's are not ideally suited for the short haul stages for which they are being used in Laos, they are doing a good job, and on behalf of USAID, I recommend their retention even though I have indicated that looking at them on behalf of Continental's self-interest, I must recommend their withdrawal.

The question concerning the sub-ATOG at LP has been referred to me, and while in Laos, I indicated to Mr. Brigida that the study necessary to provide the right answer was one which could best be made by him or his organization. Actual calculations of total air costs could be made by simply taking the requirements for those drop sites closer to LP than VTE and figuring the cost of air drop from LP to these points and then figuring the cost of air drop from VTE to the sites remaining. The sum of these costs to which should be added the extra cost of rice delivered to LP instead of VTE should then be compared to the present cost of air drop to both lists of sites as now being handled from VTE. The extra

cost for delivered rice to LP could be figured on the basis of bulk loads to LP via L382B or by using the delivered cost differential as now shown by surface, which amounts to $23.09 per ton. (See Appendix G)

It was expected that this study would be completed before May 1, and with Mr. Sparks' approval, it was agreed to forward a copy of this to me in Oklahoma, but it has not been received. Such a study would not be conclusive in itself since merely selecting those destinations closer to LP than VTE for delivery from the proposed sub-ATOG at LP would not provide the optimum answer. To do this would require a linear programming exercise which is probably beyond the capabilities of the group in VTE and is not contemplated to be within the scope of this report. If it should be desired, however, I will be glad to submit a supplemental proposal to cover such an assignment.

Some preliminary calculations will give a pretty good idea of the relative economies based upon averages and existing costs. The present air drop involves an average round trip mileage of 268 nautical miles. Assuming that the LP sub-ATOG would serve the most distant half of these points and that the average round-trip haul would be cut in half, the rough

estimate would come up as shown on Appendix H. This table clearly demonstrates the short-haul penalty caused by the disproportionate time to climb and time over the target which are constants regardless of the length of haul.

If the sub-ATOG is established at LP and L382B's were used for total rice drops, the savings over similar operations conducted entirely from VTE would be $253,800. If C-46's were used, the savings would be $636,924, while if C-123's were used, the savings would be $933,390. Total costs, however, are higher with both C-46's and C-123 than with the L382B's. An interesting sidelight here is the comparison of the total costs of the VTE operation using L382B's of $2,254,770 with the cost of using C-46's at $2,923,020. The relative economies of the Lockheed aircraft show savings of $668,250.

In his letter of February 11, 1966 to Mr. Mavro, Mr. Cooper estimated an annual savings of $1,142,000 if the ATOG was set up in Luang Prabang. Considering that we have used a figure of $448,065 as the cost of transporting the rice to LP and operating the sub-ATOG there, we are less than $60,000 apart with the C-46 estimate. (See Appendix I)

The above shows merely the quantitative side of the picture, and if it is assumed that the savings will vary from $253,800 annually if L382B's were used to $636,924 if C-46's were used, then the decision to make this move rests upon the judgment factors involved in the security of surface supply to LP plus any additional vulnerability of the operation because of its up country location. The weight given to the capital expenditure required is also a matter for consideration.

As an incident to the above exercise, it is interesting to note the magnitude of the savings shown by the C-46 over the L382B's and to realize that it is caused - not by greater efficiency of the C-46 - but rather the opposite. Because the C-46 costs are so much higher than the L382B's, the savings are proportionately higher when flight hours are reduced. This is true to an even greater degree of the C-123's which include bailment charges of $187.00 per hour.

An important point to consider is the communications complexity that the dual operation will involve and the degree of co-ordination that must be achieved if the total operation is to function smoothly. Management and direct supervision of the facility is a very real problem, particularly when it is considered that difficulties in this area are the main

source of inefficiencies in the present operation at Vientiane. Another factor is, of course, the psychological one of 'raising the flag' with this operation in the royal capital. This action of moving up country with part of the air operations will have some salutary effect which USAID can evaluate better than anyone at a distance.

On balance, it would seem that a definitive study to optimize the points which could be served by a sub-ATOG at LP is not required at this time. As indicated, such a study would require some computer programming in connection with a model or matrix using linear programming techniques. If desired, this can be undertaken, but it will only refine the accuracy of the arithmetic and in no way does it change the judgment factors which are probably more significant in the overall decision. The recommendation is that nothing be done at the present time since the major problem is to get good management control of the VTE operation. Once this is done and the new organization is functioning smoothly, the definitive study could be made which would not only pinpoint the savings, but would specify which points would be served by LP and which by VTE. By that time the judgment factors of security and psychological impact can be assessed again and a final decision reached.

OVERALL LOGISTIC CONSIDERATIONS

The present expenditure level for road building in Laos by USAID is between 4 and 5 million dollars annually. The heavy maintenance cost for such roads once built, is a very considerable factor, and during the present period of intense activity by our government in Viet Nam, and the unsettled conditions in Laos, it would seem wise to review the allocation of funds between so-called infrastructure of the country and direct operating programs.

The military or security aspect of road programs must be examined carefully. If it is thought that we must have roads and that there is no alternative to having them, then we naturally

accept the costs and disadvantages that come with the roads we build in order to gain the advantages. What may be overlooked very easily is the simple fact that an alternative does exist. We can supply all the needed communications and transportation up country by airlift. The present Contractor operations are an indication of what can be done. The air mobility which is achieved for Laos is not subject to the exposure that roads have to enemy action and use. Nor do they expose our movements to interception and ambush. Further, we could build up our air logistics capability without fear of unfriendly elements duplicating our efforts or negating them.

With these thoughts in mind, an examination would seem worthwhile to assess the advantages and costs of upgrading both quality and quantity of the airlift in Laos. On-board electronic and guidance gear could increase our navigational capabilities substantially. This could be done with little or no ground installations which might be subject to interference or damage by enemy action. It is essential to plan and help Laos begin to build for a developing economy once the political/military situation stabilizes, and certainly, roads, power sites, dams, flood control, airfields, and other elements will be required. However, the primary requirement

in an undeveloped nation is first to achieve agricultural growth where it is possible. It is unthinkable for Laos not to support its own population without importing basic foodstuffs once peace comes. Priorities for fertilizer and modern farming techniques and tools would seem to be first on the list even after peace is restored.

The need for roads can be re-evaluated if an awareness exists of the capabilities for air logistics coupled with the opening of the Mekong as a transportation artery. Accordingly, the suggestion is advanced that the need for now and for the future is to examine Laos in terms of transportation overall on a systems approach instead of compartmentalized according to the orientation of a road builder's group, a Mekong Committee and a few aviation enthusiasts.

The immediate or near immediate use of the Mekong for transportation by employing Turbo-craft or Hovercraft or both to form a transportation base is only a forerunner of the logical development of the river when dams and flood control structure finally make it navigable for conventional barges and surface craft. When that time comes, the redundancy of NW-SE roads paralleling the river will be apparent. Also, when that time comes, the development of efficient low-cost STOL and

and short-haul aircraft will make roads obsolete for cross-country runs over difficult mountainous country which is sparsely settled.

Anticipating the technological developments in transportation equipment - both surface and air - make it clear that Laos does not now need to build roads on the same basis as New Jersey and never will. The parallel is closer to the development of Norway. The efforts of the Mekong Committee, the Bureau of Public Roads and the Air Support Branch should be analyzed with this comprehensive capability in mind.

Existing ton/mile costs of the larger model Hovercraft now in production make the operation of these vehicles seem feasible. No determination of this can be made without a thorough study, but the point of this report is to focus on such possibilities for future study.

Another general area that should be explored along with the transportation/logistics situation in Laos is the overall economics of the total costs of distribution of goods. One of the major costs is that of carrying inventory. Inventory levels are determined by three major considerations, whether it be stocks of APC tablets in the Public Health Warehouse at

Sam Thong, or quantities of two-piece bathing suits at I. Magnin & Co.

Inventory must first be held to satisfy the daily usage requirement plus the fluctuations above that requirement. If consumption averages 100 units per day and fluctuates from 80 units to 120 units, then stocks at the beginning of any given day should never be below 120 units. The second consideration is the replenishment cycle. This takes into account the ordering frequency, the economic production run, the time required for processing the order, the in transit shipping time, and the time required for receiving and entering into stock. The third consideration is the judgment factor of how much cushion to add to protect against disruptions in supply or extraordinary usage requirements. The aggregate of these three elements determine inventory levels. If the replenishment cycle is shortened by the use of air or more frequent ordering intervals, or any other device, then an extra cost is incurred. The amount by which inventory is reduced by such action can be assessed and the savings that result from this can be compared to the extra cost of cutting down the replenishment cycle. If they more than offset that cost, the action is desirable.

The relationship between these elements is a function of the value/weight ratio and the cost of carrying inventory in addition to the relative costs of surface and air shipping means. Using an inventory carrying cost of 25% per year which is conservative, the relationship can be described by this statement: The use of air shipping is economically justified whenever the percentage of inventory reduction made possible by such faster transportation is greater than the number expressed as a percentage which results when the extra cost of shipping in cents per pound is multiplied as a number by four times the inventory turnover. This is known as Harris' Third Law, and while it is not a profound expression, it escapes most people in the air cargo industry as well as transportation people in general.

The application of this formula to any given logistics situation within USAID will provide guidance on whether or not air should be employed when the considerations are based upon economics only. The recent reduction in USAID inventory in Laos which Mr. Holding indicates was cut from $4,560,000 to just over a million would result in annual savings of approximately $900,000.

Whenever other than economic considerations exist, the formula

can be used to determine the net difference between alternative transportation means and thus make management judgments easier and wiser. It might be used as a supplement to Mr. Mendenhall's guideline memo of February 8, 1966. (See Appendix C)

The task which faces USAID in Laos is one which may well quire continued airlift for a number of years for certain areas and groups. If this is the case, then some advance thinking should take place along with Contractors and perhaps even manufacturers so that new aircraft designs and configurations may be brought out with some understanding of the user's requirements and problems in places like Laos.

It is obvious that C-47's, C-46's, C-123's etc. are not going to last forever. New models coming to the fore now such as the Nord 262, Twin Otter, Twin Stallion, Breguet 941 and other utility type transports are generally the result of what the engineer thinks can be done, based upon some new power plant which has been developed. Having designed the aircraft, the manufacturers attempt to sell it to users, and rarely does the user get an optimum vehicle for his purpose from this exercise.

USAID could help itself if, as a result of the overall logistics evaluation, it would begin to set out design parameters for the ideal aircraft for Laos operations. If these requirements were clearly defined and understood, it is likely that some manufacturer will design and build to them in the future, thus improving the total effort. If this is not done, then USAID in the future will be limited to choosing among various aircraft for its special use, but which were designed for other uses and requirements.

One apparent characteristic of the air support operations in Laos is the one-way flow of traffic. All drop operations return to base empty, of course, and on most landings there is little or no return traffic except the ubiquitous Lao nomad. While no immediate program can be contemplated for developing Laos as an industrialized nation, it is not too soon to think about the conditions which may exist when the political situation is stabilized and the country returns to 'normal'. When this takes place, the agricultural output for the nation as a whole should make rice imports unnecessary although it is probable that not all regions in the country will be able to satisfy their own requirements. Conversely development of mineral resources will be on a regional basis

as will the lumber and timber potential. This suggests that continued development of the logistics system for the country should examine the probable pattern of agricultural and economic development of the country. In doing so, one aspect to give some weight to involves the idea of processing Laos products to a refined state before transporting them.

Obviously, it is not practical to have smelters in every village where minerals might be mined, nor sawmills in every potential timber area. On the other hand, the degree to which ores may be refined before transportation and the degree to which wood-working industries can be developed on a village or local basis should be carefully considered. With an abundance of forest products and the already-recognized dexterity of Lao and Meo tribes for handling simple cutting tools, the prospect of hand-built teak and other furniture being produced on location and moved out as a finished or semi-finished product in knocked-down form is a very exciting one. The immediate possibilities of getting such programs underway rest a great deal upon use of return air space from up country refugee sites which now is wasted. This, of course, then depends upon either air landings instead of air drops so that return loads can be taken or some alternative

method employed, such as the air snatch which could be made after the drop.

The main concept here - with apologies to Xerox - is to "bring the machine to the work" and by so doing, we would be required to transport fewer bulk, heavy, and low-cost items and more finished or semi-finished hand-worked products on which the man hours were invested at the site. If such programs are ultimately sound for the economic growth of Laos, then some thought should be given to moving in that direction with existing air operations. Much could be done to encourage this type of productive activity right now by working out ways and means of developing some return loads with present or slightly modified air operations. I am not suggesting that this is the way to go, but that some careful studies should be made of the possibilities so that - if they are practical - we can begin to adapt our thinking on air support operations to these ultimate objectives and to consider them in toto with surface transportation and logistics operations of future years.

ATTACHMENT A

United States AID Mission To LAOS

USAID Staff Notice

November 23, 1965 VIENTIANE, LAOS No. 66-005

SUBJECT: Milk Run Flight Schedules - Subject Index No. 560.

The regularly scheduled Milk Run flights to out-stations shown below are effective December 1, 1965. Staff Notice Nos.65-187 and 65-237 are hereby cancelled.

NORTHBOUND

	MONDAY Arr	MONDAY Dep	TUESDAY Arr	TUESDAY Dep	WEDNESDAY Arr	WEDNESDAY Dep	THURSDAY Arr	THURSDAY Dep	FRIDAY Arr	FRIDAY Dep	
Vientiane		1015		1015		1015		1015		1015	Vientiane
V. Vieng	1045	1105			1045	1105			1045	1105	V. Vieng
L.Prabang			1120	1150	1135	1155	1120	1150			L.Prabang
Sayaboury			1220	1240	1225	1245	1220	1240	1130	1150	Sayaboury
L.Prabang			1310	1330	1315	1335			1220	1240	L.Prabang
Sayaboury									1310	1330	Sayaboury
V. Vieng					1405	1425			1355	1415	V. Vieng
Vientiane	1135		1435		1455		1325		1445		Vientiane

SOUTHBOUND

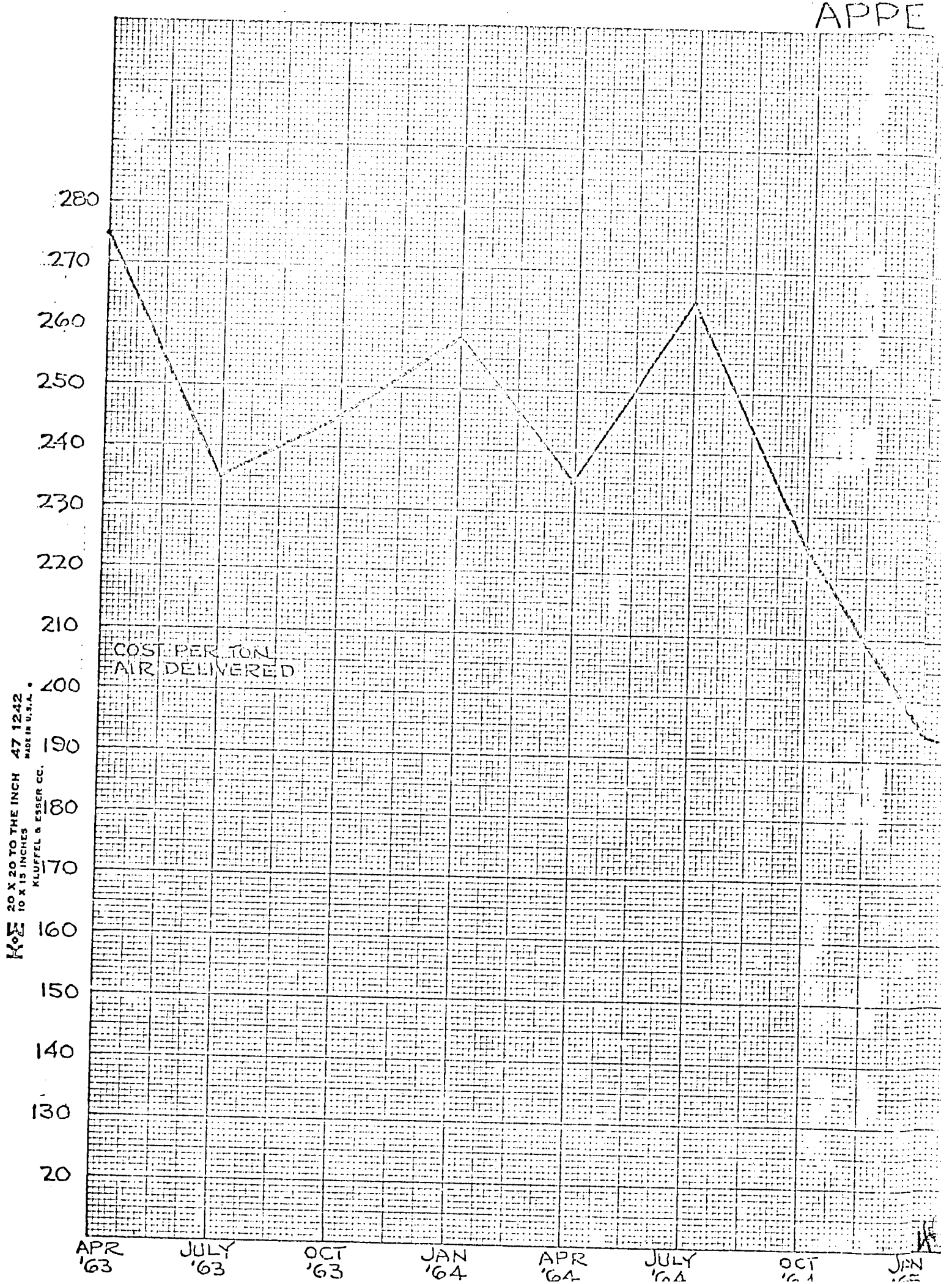
	MONDAY Arr	MONDAY Dep	TUESDAY Arr	TUESDAY Dep	WEDNESDAY Arr	WEDNESDAY Dep	THURSDAY Arr	THURSDAY Dep	FRIDAY Arr	FRIDAY Dep	
Vientiane		0830		0830		0830		0830		0830	Vientiane
Paksane	0910	0925							0910	0925	Paksane
Thakhek	1005	1025							1005	1025	Thakhek
Savannakhet	1050	1110	0945	1005	0945	[illegible]	0945	1005	1050	1110	Savannakhet
Pakse	1155	1225	1050	1120	[illegible]	[illegible]	1050	1120	1155	1225	Pakse
Attopeu			1205	1225			1205	1225			Attopeu
Pakse			1310	1325			1310	1325			Pakse
Savannakhet	1310	1330	1410	1430	[illegible]	1225	1410	1430	1310	1330	Savannakhet
Thakhek	1355	1405			1250	1300			1355	1405	Thakhek
Paksane	1450	1500			*1330	1345			1450	1500	Paksane
Vientiane	1535		1540		1430		1540		1535		Vientiane

* Flag Stop

R. D. Lawson
Acting Executive Officer

DISTRIBUTION: D, F, EMBASSY, USIS, ARMA, AIRA, COMMISSARY, AIR AMERICA, OICC

APPE


280
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COST PER TON
AIR DELIVERED
APR '63
JULY '63
OCT '63
JAN '64
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JULY '64
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10 X 15 INCHES MADE IN U.S.A.
KEUFFEL & ESSER CO.

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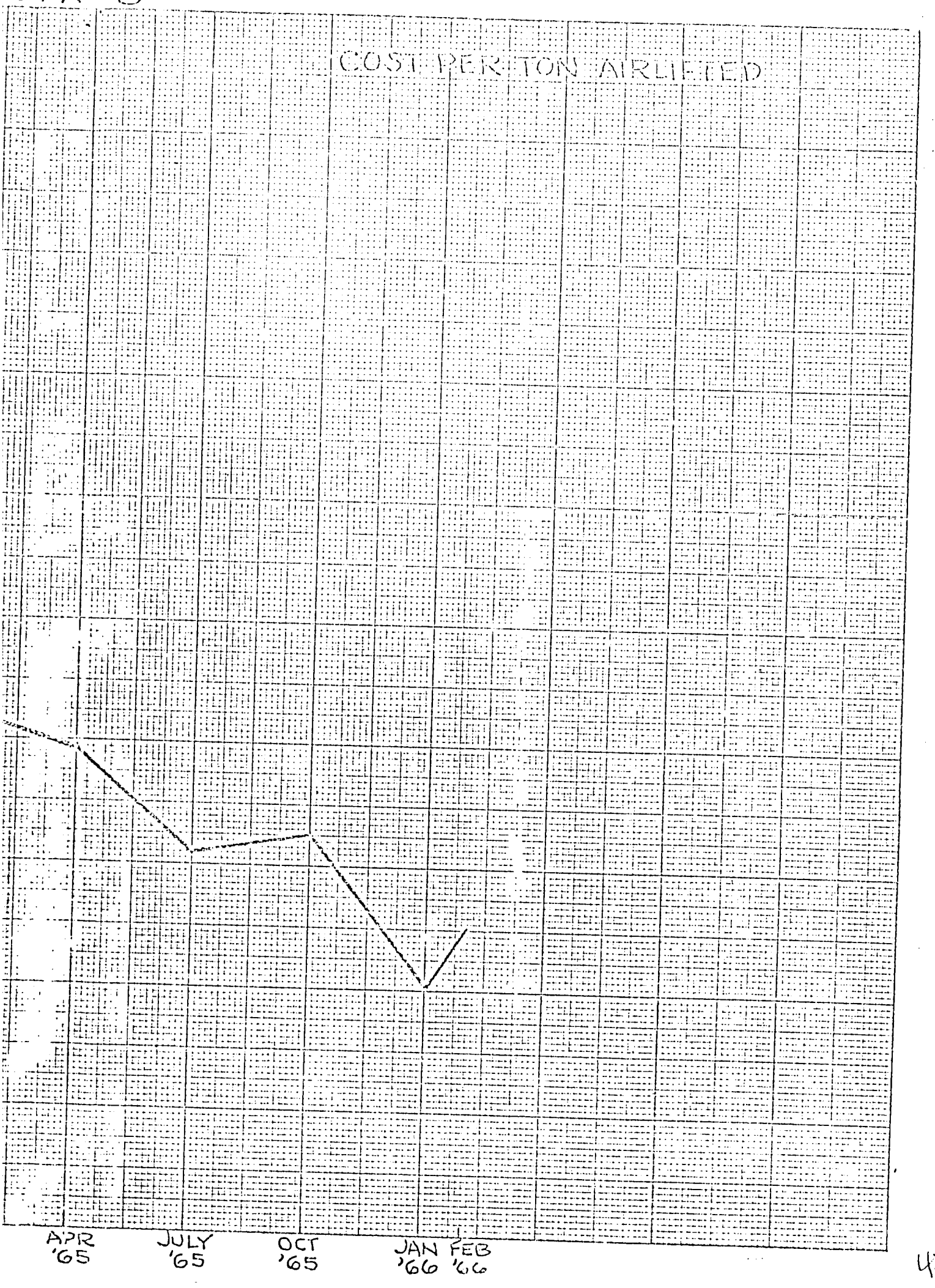

APPENDIX C

February 8, 1966

MEMORANDUM FOR: DISTRIBUTION LIST

FROM: Joseph A. Mendenhall, Director JAM

SUBJECT: Cost Comparison on Direct Shipment to Field Station vs. Transshipment through Vientiane

For your information and guidance the following cost comparison [illegible] as a guide in preparing transportation requests and should be used in weighing priority of shipment against cost of transport. For the purpose of this exercise we will use as an example 22,000 pounds of cargo.

TO SAVANNAKHET	US $
Bangkok - Savannakhet (surface)	260.00
Bangkok - Vientiane - Savannakhet (surface)	268.00
Bangkok (surface) - Vientiane (air) - Savannakhet	1,400.00
Bangkok - Savannakhet (air)	2,800.00
Vientiane - Savannakhet (surface)	88.00
Vientiane - Savannakhet (air)	1,221.00

TO PAKSE	
Bangkok - Pakse (surface)	270.00
Bangkok - Vientiane - Pakse (surface)	378.00
Bangkok (surface) - Vientiane (air) - Pakse	2,973.00
Bangkok - Pakse (air)	X 4,537.00
Vientiane - Pakse (surface)	198.00
Vientiane - Pakse (air)	2,792.00

TO LUANG PRABANG	
Bangkok - Chiang Sene - Luang Prabang (surface)	640.00
Bangkok - Vientiane - Luang Prabang (surface)	785.00
Bangkok (surface) - Vientiane (air) - Luang Prabang	1,576.00
Bangkok - Luang Prabang (air)	3,839.00
Vientiane - Luang Prabang (surface)	605.00
Vientiane - Luang Prabang (air)	1,396.00

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APPENDIX D

LC-130F Christchurch		Zero
RCAF Base Satenas		100%
Jeddah		50%
NAS Agana		Zero
Christchurch		25%
MACTAN AB C130B		9%
C130E		6.2%
Clark AB		6.2%
Tachikawa AB		Zero
Naha AB C130A's		.5%
C130E's		Zero
RNZAF Auckland		Zero
MoffettNAS		.7%
FAB Galeao		Zero
Shahrokhi AFB C-130B		50%
C-130E		Zero
Lockbourne AFB		4.3%
NAS Patuxent River		Zero
MCAS El Toro		6.7%
Edwards AFG		Zero
Sewart AFB C130A		4.2%
C130E		14.9%
Evreaux-Fauville Air Base	C-130A's	Zero
	C130B's	6.2%
	C130E's	20.2%
MCAS Cherry Point		5.2%
Forbes AFB		Zero
RCAF Namao		Zero
RCAF Uplands		14.3%
MCAF Futema		23 %
Goose AFB		Zero
Erkilet AB		20 %
Elmendorf AFB		Zero
NS Rota		Zero
PopeAFB		7.9%
Olaska Airlines Fairbanks		Zero

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LOCKHEED-GEORGIA COMPANY
DIVISION OF LOCKHEED AIRCRAFT CORPORATION
INTERDEPARTMENTAL COMMUNICATION

APPENDIX E

TO P. E. Guthrie 65-21 ZONE 279 DATE 16 January 1966

GFS/19608

FROM C. E. Shuler 65-21 ZONE EXT.

SUBJECT: FIELD SERVICE ACTIVITY REPORT FOR THE WEEK ENDING 14 JANUARY 1966, ROYAL CANADIAN AIR FORCE STATION NAMAO, EDMONTON, ALBERTA, CANADA

Addressee Re-routes To

DATE

☐ FOR ACTION
☐ REPLY OVER YOUR SIGNATURE
☐ PREPARE REPLY FOR ADDRESSEE'S SIGNATURE
☐ COMMENT
☐ LET'S TALK IT OVER
☐ INVESTIGATE
☐ FOR INFORMATION
☐ PLEASE NOTE AND RETURN
☐ PLEASE FOLLOW UP

ON

RE-ROUTING, SPECIAL INSTRUCTIONS, AND/OR FOLLOW UP DATES

CS/147

SUMMARY

The C-130 aircraft flew 231:55 hours.
There were no engines, propellers or GTC's replaced.
An engine starter failed.
Three TIT indicators were replaced.
An engine oil tank was discovered cracked.
A cabin thermostat blower was replaced.
An engine oil cooler failed to function in AUTO.
An NLG down-lock was replaced.
Incorporation of T. O. 8A6-9-5-506 was started.
Sixty-six student hours of training were conducted.
The NORS(G) rate is zero per cent, unchanged.

TIME FLOWN

The C-130B aircraft flew 46:35 hours.
The C-130E aircraft flew 185:20 hours.

POWER PLANT

While TDY the number three propeller on RCAF 10320 would not rotate during a start attempt. The starter was removed due to a sheared shaft, a blanking plate installed and a windmill start made. A new starter was installed when the aircraft returned to this Station.

Three turbine inlet temperature indicators were replaced for either low or oscillating indications.

Oil was discovered coming from the number three engine of RCAF 10307. The engine oil tank was replaced due to a crack found in the weld area. This was the third oil tank found cracked in the last month at this facility.

The number three engine oil temperature was excessive during flight on RCAF 10307 in AUTO operation. The oil cooler thermostat was replaced to correct this condition.

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APPENDIX F

April 7, 1966

STATISTICS ON AIRLIFT COST C123 TO MOUNG SOUI

REFERENCE: Letter November 18, 1965 to Mr. Holding
SUBJECT: Airlift Capacity Comparison

The statistics below give details of the dollar cost for transportation by C123 Aircraft to Moung Soui for project work.

Items transported; ten (10) pieces of equipment plus one (1) scout and one (1) camp with miscellaneous equipment.

A total weight of	115,170 lbs.
Plus Initial POL weight of	30,000 lbs.
A total of	145,170 lbs.

A C123 can carry 12,000 lbs. at a cost of $525 a trip. It requires twelve (12) trips to carry this amount of weight which equals $6,300.

It is necessary to dismantle, transport and reassemble the heavy equipment if it is to be transported a C123 with its limited weight load capacity.

The following Man-Days were consumed in a ten (10) day period utilizing three (3) US personnel and 14 local personnel:

33 Man-Days US Personnel costing approximately - - - - - - - - - - $1,297.
(including per diem)

140 Man-Days Local Personnel 10 mechanics and 4 heavy equip.
Operators (including per diem) - - - - - $3,829.

This is a total of $5,126. for dismantling, and re-assembling the equipment.

The total cost for this C123 one way is $11,426.

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APPENDIX G

COMPARATIVE RICE COSTS BY TYPE AND DESTINATION

AREA	SINGLE BAG	TRIPLE BAG
Luang Prabang	$159.18	$183.24
Vientiane	$136.42	$160.15
Savannakhet	$133.51	$158.55
Pakse	$137.87	$162.91

	100% Vienti	
	L382B	C4
	Average T	
Cruise Altitude (Ft)	16,000	
Climb Speed (KTS)/Time	160/ :10	12
Cruise Speed (KTS)/Time	270/1:12	16
Time Over Target	:12	-
Total Trip Time	1:34	
Aircraft Cost (Dollars/Hour)	1,250	
Payload (Tons)	23.5	
Airlift Trip Cost (Dollars/Ton)	83.51	
(1) Reduction in Handling Costs		
(2) Surface Freight Costs		
(3) Operating Costs		
(4) Amortization Allowance		
Trip Cost (Dollars/Ton)	83.51	
Aver. Mission (Dollars/Ton)	83.51	
Total Cost/Month (Dollars) (2250 Tons/Month)	187,898.	
Total Cost/Year (Dollars)	2,254,770.	2,9
Yearly Savings by Type of Aircraft "50-50" Operation		

NOTES:

(1) Estimated Savings ATOG-VTE
(2) Appendix G
(3) Appendix Jp2 ($7000/mo / 1125 Tons/Mo)
(4) Appendix J ($233,000 amortized over 5 years)
(5) Includes $187.00 Bailment Charge

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e ATOG		50% Vientiane ATOG			50% Luang Prabang Sub-ATOG		
	C123	L382B	C46	C123	L382B	C46	C123
ip 268 NM		Average Trip 134 NM			Average Trip 134 NM		
8,000	8,000	16,000	8,000	8,000	16,000	8,000	8,000
:10	120/ :10	160/ :10	120/ :10	120/ :10	160/ :10	120/ :10	120/ :10
1:48	165/1:44	270/ :42	160/ :58	165/ :58	270/ :42	160/ :58	165/ :58
:21	:06	:12	:21	:06	:12	:21	:06
2:19	2:00	1:04	1:29	1:14	1:04	1:29	1:14
280	(5) 391	1,250	280	391	1,250	280	391
6.0	6.0	23.5	6.0	6.0	23.5	6.0	6.0
108.26	130.33	58.51	69.07	80.16	58.51	69.07	80.16
		(200)	(200)	(200)			
					23.09	23.09	23.09
					6.22	6.22	6.22
					3.88	3.88	3.88
108.26	130.33	56.51	67.07	78.16	91.70	102.26	113.35
108.26	130.33	74.11	84.67	95.76			
3,585.	293,243.	166,748.	190,508.	215,460.			
3,030.	3,518,910	2,000,970.	2,286,096.	2,585,520.			
		253,800.	636,924.	933,390.			

APPENDIX I

Office Memorandum • UNITED STATES GOVERNMENT

TO : Alex. P. Havro, Executive Officer

DATE: February 11, 1966

FROM : Leslie M. Cooper, Acting Chief, Air Support Branch

SUBJECT: Use of Luang Prabang Airport for Rice Storage and Dropping

The following information has been extracted from a report submitted by Air Support to the Program Office dated June 10, 1965:

"Luang Prabang is situated in the middle of the principal rice drop zones in Laos. Fifty seven percent of the Refugee Relief drop zones are closer to Luang Prabang than Vientiane. Based on the April Refugee Relief quota this represents 24,489 bags out of a total of 42,708. Two Neutralist drop zones, Moung Soui and Moung Heim, are also considerably closer to Luang Prabang than Vientiane,

Using Luang Prabang as a base for rice drops would result in a yearly savings of $ 1,142,000 through reduced flying time. The cost of transporting rice to Luang Prabang and the setting up of a facility would have to be subtracted from this savings. The flying time saved amounts to 4,200 hours each year. This means that USAID would have an increased airlift capability of three C-46 aircraft, or we could reduce the fleet by a similar number assuming additional requirements are not added. During the events of last February when Wattay was closed, we were unable to maintain our rice drop quota. Additional flying hours would be saved by using Luang Prabang as a storage area for the delivery of POL and other supplies to points farther up country. The establishment of base at Luang Prabang would provide employment opportunities for that area.

In order to drop rice out of Luang Prabang a reliable supply system must be arranged to assure a steady flow of POL products, rice, and palletizing equipment into Luang Prabang by surface river transportation. In the last two years, the Requirements Office has successfully shipped POL to Luang Prabang by river. The primary route is down river from Chiangmai in Thailand, The reliability of these shipments have been satisfactory. With proper security, POL can be stored in the open, but storage facilities are required for rice and other supplies. A fifteen day supply of rice (about 15,000 bags) and POL would be required to offset any possible breakdown in barge transportation.

The following equipment, facilities, and personnel would be required for operations from Luang Prabang:

APPENDIX I

1. A 14,000 square foot warehouse with palletizing equipment and a roller conveyor system.

2. Two 2-1/2 ton stake trucks with roller conveyors installed.

3. Two heavy duty forklifts.

4. One aviation gas refueling truck to be furnished by either Esso or Shell.

5. Unskilled labor for loading and palletizing would have to be hired and trained. Skilled Thai or Filipino supervisary personnel would be required and two Americans for overall supervision would be needed."

AIR:LMCooper:ws:2/11/66

AIR
C&R 2

STANDARD FORM NO. 64

APPENDIX J

Office Memorandum • UNITED STATES GOVERNMENT

TO : Mr. Alex P. Mavro, EO

DATE: ebruary 10, 1966

FROM : Leslie M. Cooper, AIR

SUBJECT: Requirements for Proposed ATOG Service Point -

Pursuant your request for investigation costs to establish and maintain (personnel) a facility at Luang Prabang to receive, store and issue rice, the following planning estimate of costs is submitted:

It is assumed that an ATOG Service would be required to receive cargo from either surface or air craft, store and prepare for movement as directed by USAID. It is also presumed that personnel billets, maintenance facilities and supporting utilities will be required.

Construction/Equipment Requirements

ITEM/DESCRIPTION	ESTIMATED COST
1. 40' x 100' warehouse provided by USAID and erected by AAM	US$ 8,500.00
2. 40' x 80' aircraft maintenance building	US$ 9,600.00
3. Utility support, and building to include:	
a. Electric Power Plant Building	US$ 800.00
b. Equipment Maintenance	US$ 2,300.00
c. Automotive Maintenance	US$ 2,300.00
d. Supply	US$ 4,200.00
e. 2 - 30 Kw generators	US$ 8,400.00
f. Water System - 12,000 gal. per day	US$ 7,000.00
g. Power distribution system	US$ 2,500.00
4. Site work-ramp and access roads, parking, and outside storage 300' x600'	US$ 24,000.00
5. Sixty (60) man billet with mess, latrine, sleeping area, lounge, etc., 26' x 208' - story, 10,816 S.F.	US$ 32,448.00
5-A). Furniture and outfitting	US$ 8,000.00

APPENDIX J

6.	Commissary building and refrigeration equipment	US$	9,000.00
7.	Maintenance shops, equipment	US$	11,000.00
8.	Two (2) 6,000 lbs. capacity forklifts	US$	28,000.00
9.	Two (2) 5 ton capacity cargo trucks	US$	10,000.00
10.	Two (2) utility vehicles	US$	6,000.00
11.	Roller Conveyors 600 sq. ft.	US$	6,000.00
12.	Security fence and area lighting	US$	2,400.00
13.	Parachute rigging building 20' x 60'	US$	3,600.00
14.	POL Storage facility 500 drums capacity	US$	11,000.00
15.	Fire Protection equipment (portable)	US$	7,000.00
16.	Peculiar Traffic Handling Equipment	US$	2,500.00
17.	Traffic Office Equipment	US$	2,000.00
	Total - - - - - -	US$	209,548.00

Personnel Requirements

POSITION	Total Number
Traffic Manager (American)	1
Traffic Agent I	1
Traffic Agent II	4
Rigger	1
Bookkeeper	1
Clerk	2
Palletizers	8
Laborers	31
Drivers	10
Total ...	59

Total Costs per month US$ 7,000.00

Should bagging operations be required the following additional facilities will be required.

Construction/Equipment Requirements

1.	40' x 100' Warehouse provided by USAID and erected by AAM	US$	8,500.00

APPENDIX J

2.	Rice Hopper	US$	3,000.00
3.	Portable powered conveyor	US$	2,200.00
4.	Two (2) 5 ton capacity cargo trucks	US$	10,000.00
	Total	US$	23,700.00

Personnel Requirements

Position	Total Number
Traffic Agent II	1
Traffic Agent I	1
Truck Drivers	3
Laborers	18
Total	23

Total costs per month US$ 2,250.00

Transportation costs for movement of men, material and equipment for the construction have not been included.

The foregoing estimate is rough and offered for planning purposes only. Should the plan receives favorable consideration, recommend that a detailed presentation be made prior to commitment.

AIR:LMC:ffp:2/10/66

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UNITED STATES GOVERNMENT

Memorandum

TO : Mr. Martin Mulholland

DATE: June 2, 1966

FROM : George H. Raynor

SUBJECT: Comments on the Harris Report on Air Operations in Laos

This memorandum contains reflections in three areas:

1. Should the L-382's be retained by the Mission?
2. Is the USAID management structure competently administering the air contracts?
3. Suggestions for improvements in the overall air operation.

The question of the retention of the L-382's has been settled to no one's satisfaction by the aircraft leaving Laos at the end of May. The aircraft were very useful while in Laos, but they couldn't be put on guaranteed minimums because: (1) The aircraft were not proven in rainy season operation, (2) USAID was not satisfied that a steady volume of cargo would be available to meet guaranteed flying hours, (3) The dropping of other aircraft to accommodate the L-382's would put the fleet/mix in a shaky position since we would be overly dependent on two aircraft. CAS could not afford to operate the aircraft within a price range agreeable to USAID without greatly increased flying time.

The question on the competence of USAID air management is one that I cannot agree on. USAID is looking at the operation from the point of view of the USG while Mr. Harris observed the operation from the viewpoint of a commercial operation. The two outlooks are very different indeed. As you know I worked in the Air Support Branch. At AID's request I took a leave of absence from Pan American World Airways to do this. Initially in Laos I had the same impressions that Mr. Harris had. In commerical operation time on the ground costs money. Every effort is made to streamline operations. I began to realize that in representing the government this basic philosophy did not hold true. The USG in Laos pays the air contractors only for time airborne. Mr. Harris' statement that costs per ton mile have substantially improved since April of 1963 is a tribute to USAID management. That is precisely the time period when the Chief of Air Support arrived on the job. Cost reductions have been made for the government, and I am sure more will be made; these reductions will not always be in agreement with commercial operating principles nor meet with the approval of the contractors in Laos. We are trying to keep the air operation at a minimum. Capital expenditures for improved loading equipment or navigational aids should be kept to the bare minimum. Mr. Harris' implication that air support favors Air America over Continental was not true when I was in Laos. Air America is our primary contractor. We use the one Continental porter available on a regular basis. The Wren and Dornier are used as needed but not regularly since they are not

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suitable for Stol up country operation.[5] The grant-lease C-46's are scheduled by the FAR. AID uses one each day for refugee drops. If the FAR does not schedule all the C-46's, AID will occasionally use one. During my time Air Support leaned over to be fair with Continental. I am sure Continental operating personnel will agree. I never received any complaints. Air Support has contact with the highest echelons in the Mission. The Chief, Air Support, regularly attends the morning operations meeting chaired by the Ambassador and attended by the Director. Many decisions regarding day to day air operations are made at this meeting. The fact that the schedule is juggled or flights cancelled are often the result of strategic decisions made at the highest level of which the contractors are not aware.

Most of the suggestions contained in the report have been considered or recommended at one time or another. I found the report useful in that it tied many ideas together. At times the report jumped to conclusions which showed that the writer was new to the operation in Laos. The Mission has long been unhappy with the Air America ATOG function. I agree that it is basically wrong for ATOG, a function of Air America, to be deciding which way the business is to go, but it should be understood that every dollar and cents decision must be reviewed by Air Support. Some of the ATOG personnel perform dual functions and their salary is shared between the Mission and Air America. To bring in a third contractor to staff ATOG would inevitably result in increased costs for the Mission. The possibility of staffing ATOG with USG personnel should be investigated. I suspect that the cost would be more and also doubt if we could recruit properly qualified men.

The suggestion that a sub-ATOG be established at Luang Prabang is one that the Mission has been considering. I feel that infinite care should be taken to include all the hidden costs which would crop up in building and maintaining a facility at Luang Prabang.

The question of the utilization of the FAR grant/lease C-46's is valid. Air Support and Requirements Office are on record that closer control should be kept over these aircraft. Until recently it was deemed wise politically not to interfere in the FAR operation of planes which we have given them.

The rice dropping program needs changes. Again Air Support is on record in this regard. The inescapeable efficiencies caused by having three rice programs, FAR, FAN, and Refugee, should be corrected. All rice should be dropped from the same quota and coordinated by one office. The debate

within the Mission over the relative cost of landing rice versus dropping it should be carefully evaluated. Landed rice will definitely increase air costs, but this may be offset by a less expansive bagging operation and by more effective refugee relations.

The paperwork, as in most areas of government, generated by the air operation is voluminous. This is caused by the necessity of documenting flights to insure the government's money is being properly used.

The development of the ~~Kemong~~ Mekong as the hub for transportation is, of course, eventually hoped for. I am not competent to comment on the merits of hovercraft over other types of transportation, but I have a feeling they would be too complicated for the Lao to operate. I do not believe it would be in the Mission's interest to develop with private industry specialized aircraft for Laos. What is developed must be sold. Hopefully in the future the USG will be out of the aviation business in Laos.

cc: Adolph Bennett
Curtis Farrar

DECLASSIFIED PTB
William H. Littlewood
Date: 11/14/91
James L. Harper
Director
XA/PI
U.S.A.I.D.