

## REQUEST FOR PROPOSALS



The Government of the Northwest Territories is requesting Proposals for the Provision and Operation of Heavy Land Based Air Tankers, Operation and Maintenance of CL-215 Air Tankers Aircraft and associated "Bird Dog" aircraft services in the Northwest Territories

The purpose of this Request for Proposals is to assist in the development of the northern economy and to promote northern and local labour utilization in the provision of aircraft services to the GNWT. Therefore, only proposals from Northern Fixed Wing Air Operators will be considered.

For the purposes of this Request for Proposals, a Northern Fixed Wing Air Operator is defined as a company approved under the Business Incentive Policy as a Northern business, and has operated fixed wing aircraft in the Northwest Territories for more than one (1) year prior to the closing date for receipt of proposals. In addition, all proposed sub-contractors that may provide air operation services to the proposer must meet the same requirements. In the case of a joint venture, both partners must also meet this requirement.

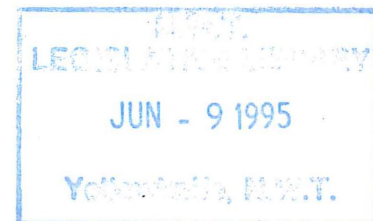
The service requirement is divided into two components:

**Requirement A:** This provides for the provision and operation of a land based heavy Air Tanker group consisting of a primary dedicated heavy Air Tanker, a supplementary heavy air tanker and associated bird dog aircraft.

**Requirement B:** This provides for the operation and maintenance of two (2) CL-215 Air Tanker groups. One group will be based in Fort Smith and the other in Yellowknife. Each CL-215 group consists of two Crown owned CL-215 Air Tanker aircraft and contractor provided and operated bird dog aircraft. The CL-215 aircraft have been placed at the disposal of the GNWT by the Federal Department of Transport (Transport Canada) under a Memorandum of Understanding,

Proposers are advised that three (3) separate proposals are required. The GNWT reserves the right to enter into agreements separately for Requirement A and Requirement B. With respect to Requirement B, the right is reserved to enter into an agreements for the Fort Smith Tanker Group and a second and separate agreement for the Yellowknife tanker group OR one agreement to cover both the Fort Smith AND Yellowknife Tanker Groups.

The GNWT requires long term contracts of five (5) year duration as indicated in the Terms of Reference.



Y-5715

## TABLE OF CONTENTS

Part I	Instructions To Proposers	Page 3
Part II	Terms of Reference - Requirement A - Land Based Air Tanker Group	Page 6
	Terms of Reference - Requirement B - CL-215 Air Tanker Group	Page 8
Part III	Proposal Guidelines - Requirement A - Land Based Air Tanker Group	Page 11
	Proposal Guidelines - Requirement B - CL-215 Air Tanker Group	Page 13
Part IV	Proposal Evaluation - Requirement A - Land Based Air Tanker Group	Page 16
	Proposal Evaluation - Requirement B - CL-215 Air Tanker Group	Page 18
Part V	Pro Forma Contract - Land Based Air Tanker Group	Page 20
	Pro Forma Contract - CL-215 Air Tanker Group	Page 21
	Performance Specifications - Heavy Land Based Air Tanker Aircraft	Annex A
	Performance Specifications - Birddog Aircraft/Tanker Support	Annex B
	Air Crew Requirement for Land Based Air Tanker Aircraft	Annex C
	Maintenance Crew Requirement for Land Based Air Tanker Aircraft	Annex D
	Pilot Requirements for the Birddog Aircraft	Annex E
	Maintenance Crew for Birddog Aircraft	Annex F
	Air Crew Requirement for CL-215 Air Tanker	Annex G
	Maintenance Crew Requirements for CL-215 Air Tanker	Annex H
	GNWT Commercial Room and Board Directive	Annex I
	Insurance Requirements	Annex J
	MUTUAL AID RESOURCES SHARING (MARS) AGREEMENT	Annex K
	CL-215 Maintenance and Logistics Support Planning	Annex L
	NWT CL-215 Operational Summaries 1986 - 1993 Inclusive	Annex M
	NWT CL-215 Operational Summaries 1994	Annex N
	Sample Dry Lease Agreement	Annex P

V-5715

**PART I  
INSTRUCTIONS TO PROPOSERS**

1. This Request for Proposal should not be construed as a contract to sell, purchase, lease or hire goods, property or services. The G.N.W.T. is not bound to accept the proposal which provides for the lowest cost or price to the G.N.W.T. nor any proposal of those submitted.

Notice in writing to a proponent of the acceptance of their proposal by the G.N.W.T., and the subsequent full execution of a written agreement shall constitute the making of the contract for the purposes contemplated herein, and no proponent shall acquire any legal or equitable rights or privileges whatever until the occurrence of both such events. The written agreement will contain the relevant provisions of this request for proposals, the accepted proposal as well as such other terms as may be mutually agreed upon, whether arising from the accepted proposal or as a result of any negotiations prior or subsequent thereto.

In the event of any inconsistency between the accepted proposal/request for proposal, and the ensuing contract, the latter shall supersede the former.

2. The G.N.W.T. has the right to cancel this request for proposals in whole or in part at any time and to reissue same thereafter, for any reason whatsoever, without incurring any liability and no proposer will have any claim against the G.N.W.T. as a consequence.
3. In order to be considered, ~~sealed~~ proposals shall be received **NO LATER** than 3:00 p.m. local Mountain time, January 23, 1995 at the following location:

Manager, Materials Management,  
Department of Public Works and Services,  
3rd floor, Stuart M. Hodgson Building,  
5009 - 49 Street, Yellowknife, N.W.T. X1A 2L9

**Late proposals and amendments will be rejected and returned to the proposer.**

4. The G.N.W.T. will not be responsible for any proposal not properly identified on the outside of the return envelope as a proposal containing the PROPOSAL NUMBER AND REFERENCE, THE CLOSING DATE AND THE PROPOSER'S NAME.
5. All proposals should contain a covering letter signed by the proposer.
6. **ELECTRONICALLY TRANSMITTED PROPOSALS** (Telegram, Facsimile, etc) **WILL NOT BE ACCEPTED**. However, AMENDMENTS to a proposal may be forwarded by such means provided:

- that only the applicable changes are shown, and
- that it is received before the submission deadline, and
- it is addressed as shown in paragraph 3, and
- it contains the time and date of transmission, reference number, submission deadline and the proposer's name, address and signature, BUT

-the G.N.W.T. will not be liable for any claim, demand or damages if for any reason a transmission is interrupted, not received in its entirety, received late or by any facsimile unit other than for the number provided herein.

Facsimile amendments are to be transmitted to: 403-920-4512

**It is recommended that the proposer verify receipt of any amendment with the addressee prior to the submission deadline.**

7. An amendment(s) or addendum(s) may be issued by the G.N.W.T. and should be made part of the proposal and submitted with it if possible. If either is submitted separately the requirements of paragraph 6 should be noted and complied with. The G.N.W.T. may issue a post-proposal amendment.
8. We request that proposers submit four (4 ) copies of the proposal.
9. Proposals submitted are to be final and may not be altered by subsequent offerings, discussions or commitments except if amended in accordance with paragraph 6 or unless the proposer is requested to do so by the G.N.W.T.. The proposer is free to withdraw their proposal at any time.
10. Proposals shall be evaluated as soon as practicable after the closing time. No detail of any proposal will be made public except the names of all parties submitting proposals.
11. An evaluation committee will review each proposal. The G.N.W.T. reserves the exclusive right to determine the qualitative aspects of all proposals relative to the evaluation criteria.
12. Proposals may be shortlisted. Proposers who are shortlisted may be requested to make a formal presentation. Such presentations shall be made at the cost of the proposer.
13. If a contract is to be awarded as a result of this request for proposals, it shall be awarded to the proposer who is responsible and whose proposal provides the best potential value to the G.N.W.T.. Responsible means the capability in all respects to perform fully the contract requirements and the integrity and reliability to assure performance of the contract obligations.
14. All questions or inquiries concerning this request for proposal should be in writing, should be submitted no later than five (5) calendar days prior to the proposal deadline.

All enquiries regarding this RFP are to be made to Mr. Vince Dixon at the above noted address or by phone at (403) 873-7648 or fax (403) 920-4512.

Verbal responses to any inquiry cannot be relied upon and are not binding on either party.

15. The G.N.W.T. shall not be liable for any costs of preparation or presentation of proposals.
16. The proposal and accompanying documentation submitted by the proposers are the property of the G.N.W.T. and will not be returned.

17. One of the priorities of the G.N.W.T. is to ensure local and northern materials, equipment and other services are used to the fullest extent practical on any G.N.W.T. contract works, and the Business Incentive Policy, 32.04 applies to this Request for Proposals.
18. **Proposers are cautioned to examine the Request for Proposals documents carefully and after having read, understood and are able to comply with all of the detailed requirements including the Pro-forma contract documents incorporated into the Annexs submit proposals on the portion of the work that is desirable to them.**
19. An information conference for all interested proponents is planned for Wednesday January 11, 1996 at a time and location to be advised. Proponents are encouraged to submit questions in advance.

PART II

TERMS OF REFERENCE

REQUIREMENT A: LAND BASED AIR TANKER GROUP

Scope:

The Contractor shall provide and operate a land based, heavy air tanker flight group in order to provide fire fighting services in the Northwest Territories. This group will consist of a primary air tanker, a supplementary air tanker, a primary bird dog aircraft and a supplementary bird dog aircraft. The supplementary air tanker and supplementary bird dog augment the primary aircraft.

Requirements:

The successful Proposer shall be required to:

1. enter into a contract as described in detail in Part V commencing on the date of signature by both parties and terminating on October 31, 1999.
2. provide aircraft(s) in accordance with the performance capabilities provided in Annex "A" and "B".
3. operate the aircraft during the normal period of operation and make available according to the Renewable Resources Air Tanker Group Alert System. The estimated utilization based upon the average of the previous four (4) years actual activity utilizing DC-6 aircraft with tank and gating system as described in Annex "A" is:

Primary Air Tanker and Bird dog:	130 hours each
Supplementary Air Tanker and Bird dog:	105 hours

The average annual requirement for supplementary aircraft, based on previous years was fifty (50) days.

4. Make available the aircraft and personnel as follows:

<u>Effective Date</u>	<u>Aircraft Status</u>
May 1	Aircraft and crews available upon 48 hours notice
May 15	Aircraft and crews available upon 24 hours notice
May 25	Aircraft and crews located at Main Base of Operation - Hay River, NWT

The supplementary air tanker and bird dog may be assigned as required to any location in the NWT upon 24 hours notice during the normal period of operation, May 25 to August 25.

5. All initial and recurrent training is to be performed at the Contractor's expense.
6. provide insurance coverage as described in Annex "J".
7. operate the aircraft services in other jurisdictions in accordance with Annex "K".

Y-5715

8. comply with the provisions of the GNWT's Commercial Room and Board Directive as provided in Annex "I".
9. provide contract security in the form of a performance bond or irrevocable letter of credit in a form acceptable to the GNWT, in the amount of \$250,000 within five working days of contract signature.
10. provide proof of financial stability regarding ongoing operations by means of a bank operating line of credit in the amount of \$250,000.

### **General**

It is the intent of the GNWT to establish a Transport Canada approved aircraft maintenance facility within the Northwest Territories and therefore is conducting separate negotiations with Dene Metis Holdings Ltd of Fort Smith. While it is not currently a mandatory term of the contract, the GNWT encourages the Contractor to utilize this facility. Proposers are encouraged to offer any ideas or proactive plans that would facilitate this objective and demonstrate their commitment to the growth of the northern air industry and this will be considered in the proposal evaluation.

The GNWT will pay the Contractor for the services on a monthly basis: prorated seasonal charges; flight time charges; reimbursible costs; and any hourly charges.

Proposals which suggest using different aircraft, tankage or bird dog aircraft during the performance of the contract will be considered.

**PART II**

**TERMS OF REFERENCE**

**REQUIREMENT B: CL-215 AIR TANKER GROUPS**

**Scope:**

The GNWT will contract for the operation of crown owned CL-215 aircraft and the provision and operation of associated bird dog aircraft. Each operational group will consist of two CL-215 aircraft and one Bird Dog aircraft as follows:

Main Base of Operation

Fort Smith, NWT  
Yellowknife, NWT

Normal period of operation

May 25 to August 25  
May 31 to August 31

**REQUIREMENTS:**

The successful Proposer shall be required to:

**Fort Smith Tanker Group**

1. enter into a dry lease agreement with Transport Canada for two (2) Crown owned CL-215 aircraft and spares packages to operate from a main operating base in Fort Smith.
2. operate and maintain the two (2) CL-215 aircraft during the normal period of operation May 25 to August 25 and make crew and aircraft available according to the Renewable Resources Air Tanker Group Alert System, The estimated utilization based on previous years is:
  - (a) CL-215 250 flying hours per year per aircraft
  - (b) Bird-dog aircraft 250 flying hours per year
3. provide off season maintenance and storage of the two (2) CL-215 aircraft in accordance with the contract provided in Part V and Annex "N".
4. provide, operate and maintain one (1) bird-dog aircraft on an exclusive basis during the normal period of operation and provide a back up bird dog aircraft within 48 hours notice.

**Yellowknife Tanker Group**

1. enter into a dry lease agreement with Transport Canada for two (2) Crown owned CL-215 aircraft and spares packages to operate from a main operating base in ~~Fort Smith~~ *Yellowknife*.
2. operate and maintain the two (2) CL-215 aircraft during the normal period of operation May 25 to August 25 and make crew and aircraft available according to the Renewable Resources Air Tanker Group Alert System, The estimated utilization based on previous years is:
  - (a) CL-215 250 flying hours per year per aircraft



(b) Bird-dog aircraft 250 flying hours per year

3. provide off season maintenance and storage of the two (2) CL-215 aircraft in accordance with the contract provided in Part V and Annex "P".
4. provide, operate and maintain one (1) bird-dog aircraft on an exclusive basis during the normal period of operation and provide a back up bird dog aircraft within 48 hours notice.

### General Requirements

In addition to the above, for both the Fort Smith Tanker Group and the Yellowknife Tanker Group the Contractors shall:

1. enter into a contract commencing on the date of signature by both parties of the contract and terminating on October 31, 1999 all as described in Part V.
2. comply with the provisions of the GNWT's Commercial Room and Board Directive as provided in Annex "I" while away from home base,
3. provide contract security in the form of a performance bond or clean, irrevocable letter of credit in a form acceptable to the GNWT, in the amount of \$250,000 within five working days of contract signature.
4. provide proof of financial stability regarding ongoing operations by means of a bank operating line of credit in the amount of \$125,000 for each CL-215 aircraft operated.
5. Make available the aircraft and personnel as follows:

<u>Effective Date</u>	<u>Aircraft Status</u>
May 1	Aircraft and crews available upon 48 hours notice
May 15	Aircraft and crews available upon 24 hours notice
May 25	Aircraft and crews located at Main Base of Operation - Fort Smith, NWT
May 31	Aircraft and crews located at Main Base of Operation - Yellowknife, NWT

6. All initial and recurrent training is to be performed at the Contractor's expense.
7. provide insurance coverage as described in Annex "J".
8. operate the aircraft services in other jurisdictions in accordance with Annex "K".

The GNWT is currently negotiating with the Dene Metis Holdings Ltd., of Fort Smith for the provision of a Transport Canada approved maintenance facility. The contractor shall be required to perform maintenance at this facility when it becomes available. The GNWT and the Contractor will enter into negotiations regarding any directly related cost factors.

The GNWT will pay the Contractor for the services on a monthly basis: prorated seasonal charges; flight time charges; reimbursible costs; and any hourly charges.

Proposals which suggest using different bird dog aircraft during the performance of the contract will be considered.

4-5715

## PART III

### PROPOSAL CONTENT GUIDELINES

#### REQUIREMENT A - LAND BASED AIR TANKER GROUP

In order to evaluate of the Contractor's proposals, the Contractor's submission should include as a minimum the following:

1. Proposals should include information on licensing and appropriate Operating Certificate requirements. If the proposer is already in possession of such licence(s), copies of these must be provided with the proposal. Otherwise, the proposer must outline that steps will be taken towards obtaining the required licence.
2. Provide detailed information on the Air Tanker and Birddog aircraft proposed. If available, the proposer should provide the Transport Canada registration identification and state whether the proposed aircraft are owned or leased. Where the proposer intends to provide aircraft that are not presently owned or leased, the proposer should provide appropriate details.
3. Complete operational and maintenance details, as appropriate and applicable, for example:
  - Proposed tanker aircraft including complete performance characteristics. Proposers should address the question of how the proposed aircraft match the operational requirements as represented by Annex "A";
  - Proposed bird dog aircraft including complete performance and operational characteristics;
  - Back-up arrangements for primary flight and maintenance crews;
  - Arrangements for training flight and maintenance crews, prior to the forest normal period of operations and during such seasons;
  - Back-up and/or replacement arrangements for the Birddog aircraft.
4. Proposals should include a description of major projects undertaken in the past. For each project the proposer should provide information on: the customer; the time frame; the area where the work was performed; a short technical description of the service; the approximate value of the work; and provide corporate references if available.
5. Any information related to aerial forest fire management operations and/or the operation, maintenance and servicing of owned aircraft should also be provided.
6. Proposals should include information on the organization, in particular on the following:
  - Ownership and management structure (organization chart to be provided).
  - Experience and expertise of proposed senior and base managers, flight and maintenance personnel with an outline of their respective responsibilities. (Resumes to be provided with information on education, diplomas, degrees, experience and work history, special skills, licences, permits, etc.)
  - Proposed internal and external liaison arrangements.
  - Keeping of records and accounts.
  - Quality assurance and safety arrangements.
  - Technological advancements in the industry

7. Proposal should outline, in detail, all costs associated with the service and provide firm fixed costs for five years. Each cost element is to be provided for each of the contract years as follows:
- a) Lump sum fixed seasonal (basing) charges related to providing the primary Air Tanker.
  - b) Lump sum fixed seasonal (basing) charges related to providing the primary Bird dog.
  - c) Lump sum fixed seasonal or lump sum fixed daily charge related to providing the supplementary Air Tanker on an as required basis.
  - d) Lump sum fixed seasonal or lump sum fixed daily charge related to providing the supplementary Bird dog on an as required basis.
  - e) Stand by per diem charge, if any, for additional days before or after the normal period of operation of May 25 to August 25 in each year.
  - f) Flight Times Hourly Rates for the Primary aircraft:
    - i) During the normal period of operation
    - ii) Before or after the normal period of operation in each year if required and authorized by the GNWT
  - c) Flight Times Hourly Rates for the Supplementary aircraft:
    - i) During the normal period of operation
    - ii) Before or after the normal period of operation in each year if required and authorized by the GNWT
8. Proposers must provide a comprehensive outline of the Northern benefits proposed. Factors that should be addressed include, but are not limited to: corporate ownership; northern investment; value of "own forces"; information relative to sub-contracts and subcontractors; employment of northern residents; training of northern residents; crew accommodations; owned vs lease of aircraft;

It is the intent of the GNWT to establish a Transport Canada approved aircraft maintenance facility within the Northwest Territories and therefore is conducting separate negotiations with Dene Metis Holdings Ltd of Fort Smith. While it is not currently a mandatory term of the contract, the GNWT encourages the Contractor to utilize this facility. Proposers are encouraged to offer any ideas or proactive plans that would facilitate this objective and demonstrate their commitment to the growth of the northern air industry and this will be considered in the proposal evaluation.

## PART III

### PROPOSAL CONTENT GUIDELINES

#### REQUIREMENT B - CL-215 AIR TANKER GROUP

In order to assist in the evaluation of the Contractor's proposals, the Contractor's submission should include as a minimum:

1. Proposals should include information on licensing and operating certificate requirements. If the proposer is already in possession of such licence(s), a copy of it must be provided with the proposal. Otherwise, the proposer outline that steps will be taken towards obtaining the required licence.
2. Provide detailed information on the Birddog aircraft proposed. If available, the proposer should provide the Transport Canada registration identification and state whether the proposed aircraft are owned or leased. Where the proposer intends to provide aircraft that are not presently owned or leased, the proposer should provide appropriate details.
3. Complete operational and maintenance details, as appropriate and applicable, for example:
  - Proposed bird dog aircraft including complete performance characteristics;
  - Back-up arrangements for primary flight and maintenance crews;
  - Proposed arrangements for training flight and maintenance crews, prior to the forest normal period of operations and during such seasons;
  - Back-up and/or replacement arrangements for the Birddog aircraft.
4. Proposals should include a description of major projects undertaken in the past. For each project the proposer should provide information on: the customer; the time frame; the area where the work was performed; a short technical description of the service; the approximate value of the work; and provide corporate references if available.
5. Any information related to aerial forest fire management operations and/or the operation, maintenance and servicing of owned aircraft should also be provided.
6. Proposals should include information on the organization, in particular on the following:
  - Ownership and management structure (organization chart to be provided).
  - Experience and expertise of proposed senior and base managers, flight and maintenance personnel with an outline of their respective responsibilities. (Resumes to be provided with information on education, diplomas, degrees, experience and work history, special skills, licences, permits, etc.)
  - Proposed internal and external liaison arrangements.
  - Keeping of records and accounts.
  - Quality assurance and safety arrangements.
  - Technological advancements in the industry
7. Proposal should outline, in detail, all costs associated with the service and provide firm fixed costs for five years. Costs are to be provided for each aircraft in each of the contract years as

follows:

- a) Lump sum fixed seasonal (basing) charges for the Contractor's flight and maintenance crews as well as management and support personnel for each CL-215 aircraft.
- b) Lump sum fixed seasonal (basing) charges for the Contractor's flight and maintenance crews as well as management and support personnel for each bird dog aircraft.
- c) Per diem Stand by charge, if any, for additional days over and above the normal period of operation for each CL-215 and each Bird dog.
- d) Hourly Flight Times Rates: covering variable costs, direct overhead, risk and profit, related to flying each aircraft.
  - i) During the normal period of operation
  - ii) Outside the normal period of operation in each year if required and authorized by the GNWT:

All flight time rates shall not apply to ferrying the aircraft between the main base of operations during the normal period of operation and the Contractor's maintenance or home base.

- e) For CL-215 Aircraft only, Contractor is to indicate any rebate or cost reduction of annual basing charge that would apply in the event one or more of the CL-215 aircraft are destroyed or rendered permanently inoperable for the remaining part of the contract period.
- f) For CL-215 Aircraft only, Contractor is to indicate the Standard Hourly Labour Rates that would be charged to the GNWT for:
  - i) extra work required as a result of Air Worthiness Directives and Service Bulletins issued by the manufacturer. The actual payment will be based on the total number of person hours estimated in the manufacturer's relevant Air Worthiness Directive or Service Bulletin.
  - ii) repair and overhaul of rotatable assemblies, performed by the Contractor's maintenance personnel, other than its field maintenance personnel, if these assemblies are required for the replenishment of the spares described the Dry Lease Agreement. The labour rate does not apply to the build up or tear down of complete engine units or QEC's. The actual payment will be based on the total number of person hours consumed during the actual overhaul or repair of the rotatable assembly.
  - iii) Parts used in the Contractor's overhaul/repair of rotatable assemblies or components may be invoiced on a cost plus 15 %. There shall be no mark up allowed on sub-contracted repairs or parts replenishment.

It is expected that these rates are an average rate and make no distinction between categories of the Contractor's maintenance personnel.

- 8. Proposers must provide a comprehensive outline of the Northern benefits proposed. Factors that

Y-5715

should be addressed include, but are not limited to: corporate ownership; northern investment; value of "own forces"; information relative to sub-contracts and subcontractors; employment of northern residents; training of northern residents; crew accommodations.

9. Proposers must provide a detailed maintenance plan for the CL-215 aircraft. Information required would include, but not limited to: off season storage; off season maintenance; control and security of spares.

## PART IV

### PROPOSAL EVALUATION

#### REQUIREMENT A: LAND BASED AIR TANKER GROUP

Proposals meeting the specified requirements will be evaluated in accordance with the following criteria and weighting:

Cost	40%
Bird dog and Air Tanker Aircraft and Tank System	25%
Northern Content	20%
Corporate Profile	15%

The Evaluation Committee will include representation from the Departments of Renewable Resources (client), Economic Development & Tourism (ED&T) and Public Works and Services (PW&S).

The detailed results of the evaluations will be confidential except that proponents that were short listed but unsuccessful will be advised by the Committee, on request, of the strengths and weaknesses of their proposal.

For proposals to be considered, proponents must:

- be a qualified, northern fixed wing air operator, registered as an approved Northern Business with the GNWT under the provisions of the Business Incentive Policy;
- have been operating a fixed wing aircraft business in the Northwest Territories for a minimum of one year prior to the closing date for receipt of proposals;
- include in the proposal the minimum information specified described in Part III;
- offer air tankers and Bird Dog aircraft meeting the performance capabilities.

The evaluation criteria are further explained:

#### BIRD DOG, AIR TANKER AIRCRAFT and TANK SYSTEM:

The suitability of the proposed primary and supplementary aircraft to the NWT fire operations will be assessed for:

- expected performance on a number of typical mission profiles;
- proven reliability and performance of the type;
- compatibility of tankers and bird dog aircraft.

#### COST:



All costs to the GNWT over the full term of the contract will be included in the assessment. In addition to the proposed aircraft costs, total costs may include:

- aircraft fuel supplied by the GNWT;
- land based tanker support operations provided by the GNWT, including chemicals and other expenses;
- the costs of the particular aircraft on typical mission profiles will be a significant consideration.

#### **NORTHERN CONTENT:**

The proponent should include as much information as possible to illustrate a maximization of northern content throughout the term of the contract. Preference will be given to northern ownership, the employment and training of northerners, use of northern suppliers and northern ownership and maintenance of the air tankers and Bird Dog aircraft.

The GNWT is negotiating for the establishment of an approved maintenance facility in Fort Smith and the extent to which the proponent offers to utilize this facility, when available, will be a consideration.

#### **CORPORATE PROFILE:**

The proponents will be assessed on their background, experience and general qualifications to deliver the services.

The company history, management, current operations, maintenance and training programs and safety record and other significant contracts, especially in the area of forest fire management, are important considerations and the proposal should include relevant information.

## PART IV

### PROPOSAL EVALUATION

#### REQUIREMENT B: CL 215 AIR TANKER GROUP

Proposals meeting the specified requirements will be evaluated in accordance with the following criteria and weighting:

Cost	50%
Northern Content	25%
Corporate Profile	20%
Bird dog Aircraft	5%

The Evaluation Committee will include representation from the Departments of Renewable Resources (client), Economic Development & Tourism (ED&T) and Public Works and Services (PW&S). Transport Canada, as owners of the CL-215 aircraft must approve the Contractor.

The detailed results of the evaluations will be confidential except that proponents that were short listed but unsuccessful will be advised by the Committee, on request, of the strengths and weaknesses of their proposal.

For proposals to be considered, proponents must:

- be a qualified, northern fixed wing air operator, registered as an approved Northern Business with the GNWT under the provisions of the Business Incentive Policy;
- have been operating a fixed wing aircraft business in the Northwest Territories for a minimum of one year prior to the closing date for receipt of proposals;
- include in the proposal the minimum information specified;
- offer Bird Dog aircraft meeting the performance capabilities.

The evaluation criteria are further explained:

#### COST:

The total cost of the contract over the full term will be considered, in consideration of the proposed rates and previous history on flying time and maintenance. The preference for northern content will be assessed separately in the evaluation.

The cost of insurance provided by the GNWT.

#### NORTHERN CONTENT:

The proponent should include as much information as possible to illustrate the degree of northern content in all areas of the proposal. Preference will be given to northern ownership, the employment and training of northerners, use of northern suppliers and northern ownership and maintenance of the air tankers and Bird Dog aircraft.

The GNWT is negotiating for the establishment of an approved maintenance facility in Fort Smith and the extent to which the proponent offers to utilize this facility, when available, will be a consideration.

### **CORPORATE PROFILE:**

The proponents will be assessed on their background, experience and general qualifications to deliver the services.

The company history, management, current operations, maintenance and training programs and safety record and other significant contracts, especially in the area of forest fire management, are important considerations and the proposal should include relevant information.

**PART V**

**LAND BASED AIR TANKER SERVICES CONTRACT**

The pro-forma contract will be provided to all proponents as soon as possible.

**PART V**

**CL-215 AIR TANKER SERVICES CONTRACT**

The pro-forma contract will be provided to all proponents as soon as possible.

Y-5715

**ANNEX "A"**

**PERFORMANCE SPECIFICATIONS**

**HEAVY LAND BASED**

**AIR TANKER AIRCRAFT**

# PERFORMANCE SPECIFICATIONS - HEAVY LAND BASED AIRTANKER AIRCRAFT

## Introduction

The following material in quotations has been extracted from a report titled Forest Fire Management in the Northwest Territories published by the Minister of Supply and Services Canada in 1981. The material accurately describes the physical geography, forest types and fire behaviour conditions of the forested area of the Northwest Territories. The material is supplied to the proposer as background material to aid in understanding the fire environment.

A discussion of the role of land based air tankers and the job they are required to perform is also included with performance requirements for two acceptable retardant tank delivery systems and performance requirements for an aircraft working in an air tanker capacity.

"The Northwest Territories contains a vast forested area of 1 366 194 square km (527,490 sq. mi.) within the limits of the treeline. The topography, landforms and ground cover vary from the western mountains through the Mackenzie Valley region and the Canadian Shield to the east. The population of the Northwest Territories approximates 46 000 of which about 29 000 live within the forested area in some 24 communities of varied sizes.

The renewable resources include a number of wildlife species of which the single most important is probably the barren ground caribou. In the southwest, moose becomes the major meat producer while throughout the land furbearers are an important cash crop. Timber resources and forest growth potential exists along the major waterways. The relationship between the native people and the land is strongly rooted in cultural tradition. A variety of recreational resources is also present. The development of roads, industries and communities throughout the region add an additional set of values at risk from forest fire.

Vegetative types are virtually all flammable with varying characteristics. The fuels in combination with weather factors, particularly long hours of summer daylight with accompanying high temperatures, lend themselves to fires of rapid spread, high intensity and large size. Fires occur on the tundra, but are not common and apparently soon recover (Wein 1975).

The land is characterized by great distances, variation throughout, substantial land-based activity among the people, and a sparse population located in scattered centres.

The climate within the forested area of the Northwest Territories is relative uniform (Rowe, 1972). The summers tend to be moderately warm sunny and dry, and the winters long and cold. Mean annual precipitation ranges between 25 and 360 mm (10-14 inches) - only slightly above values typical of true deserts. Of this precipitation, a little less than half falls as snow. Mean annual total snowfall is remarkably uniform, varying in depth between 102 and 127 cm (40-50 in.). Rainfall during May-September is only 150-200 mm (6-8 inches). Many lakes and ponds are present - despite limited precipitation - because the brief summers do not permit massive evaporation and because permafrost, which is widespread in the Northwest Territories, greatly inhibits drainage.

Mean annual temperatures in the Mackenzie Valley are a fairly uniform -8 to -4 degrees celsius (17 to 25 degrees fahrenheit). Daily average minimum temperature in January range from -30 to -35 degrees celsius (-24 to -32 degrees fahrenheit). Average July maximum temperature is in the 20-30 degrees celsius range (68 - 86 degrees fahrenheit). Maximum summer temperatures vary only slightly above or below 30 degrees celsius (86 degrees fahrenheit) regardless of whether the location is far north of the Arctic Circle in the Mackenzie Delta or at Yellowknife on Great

Slave Lake. High temperatures and low relative humidities greatly influence fuel drying, ease of ignition and fire intensity.

The growing season is short. In the Northwest Territories the length varies from approximately 80 days in the Mackenzie Delta to between 120 and 140 days in areas approaching latitude 60 degrees. The long hours of daylight during June and July, however, have a great influence on growth in fire size.

The treed area of the Northwest Territories falls entirely within the Boreal Forest Region described by Rowe (1972). Within this region lie parts of seven Forest Sections.

The Boreal Forest of the Northwest Territories consists primarily of open stands of slow-growing black and white spruce (*Picea mariana* and *P. glauca*) and a ground cover of lichens and/ or mosses which becomes quite dense as the stands age. This forest is interspersed with many treeless bogs that are often fringed by larch (*Larix laricina*) and by occasional dense and tall forest stands. In the southern portion of the Northwest Territories jack pine (*Pinus banksiana*) is common on sandy soils and some uplands. The common deciduous trees, often prominent following fire, include trembling aspen (*Populus tremuloides*), balsam poplar (*P. balsamifera*) and white birch (*Betula papyrifera*). To the west of the Mackenzie River, lodgepole pine (*Pinus contorta*) and Alaska birch (*Betula neoalaskana*) are locally prominent.

In the north there is an increasing trend toward domination by black spruce and bogs. The bogs range in composition from rich grass (*Gramineae*) and sedge (*Carex* spp.) through more numerous sphagnum( spp.) mosses. Particularly common are tussock sedge areas with sphagnum moss and many low ericaceous shrubs. Among the more common plants are dwarf birch (*Betula glandulosa*) and Labrador Tea (*Ledum groenlandicum*), both common to bog and upland sites (Rowe 1972). As noted later, these plants are all flammable at times. Several species of willows (*Salix* spp.) occasionally cover large expanses along rivers, around bogs and marshes. These are important for moose.

The Forest Sections described by Rowe (1972) reflect the great variability within the Northwest Territories. Forest and plant associations in each have an affect on fire behaviour. They also have a bearing on wildlife, and on the related cultural values. Some of the major features of each are noted. Descriptions are based on Rowe (1972).

#### B.18b - Hay River

Since this is an extension of the Mixedwood Forest post-fire recovery in mixedwood stands will often favour moose. Some of the sites have superior timber-growing capabilities. The black spruce associations lend themselves to large-fire spread through the continuity of fuels. A few better-drained sites support growth of commercial timber.

#### B.23 - Upper Mackenzie

This area includes some of the best timber-producing land along the major waterways. White spruce and balsam poplar form the main cover types on the alluvial flats bordering the rivers.

The presence of large saw-timber size trees on the riverine sites indicates that these areas as yet have not been particularly fire-prone. The major threat is larger fires moving into these sites from outside. The areas of particular interest to the forest products industry are in this section. The presence of trembling aspen on the upland sites suggests poor-fire recovery potential for moose.

#### B.23b - Lower Mackenzie

Some saw-log size timber has been noted in surveys in this area, especially on some of the well-drained backlands. The presence of willow, particularly along watercourses lends itself to maintaining local moose populations. The



highland areas of black spruce on permafrost are quite flammable. The presence of none-treed lands such as bog areas suggest possibilities for control of large fires by indirect attack using aerial support, taking advantage of the sparse fuels and natural breaks.

#### B.24 - Upper Liard

Good forest growth is found here, particularly on soils of the alluvial flats. Presence of saw-timber size white spruce on alluvial flats suggests sites which are not inherently fire-prone, but vulnerable to fires moving in from upland areas. The presence of lodgepole pine on upland sites indicates possibilities for forest industries based on smaller-wood requirements. It also indicates a history of previous fires. The poplar species common should favour moose.

#### B.27 - Northwestern transition

This largest of the sections leading to the tundra edge shows substantial variation within it reflecting differences in soils and climate. In general, the continuity of vegetation and the flammable nature of the lichen ground cover, shrubs, black spruce throughout and jack pine in the south lend themselves to development of large fires. The presence of numerous lakes and watercourses suggests possibilities for water bombing, and indirect attack on fires using natural barriers. These areas are important barren ground caribou winter ranges. Some woodland caribou range in the southwest. The presence of aspen, and willows along watercourses provides some local moose habitat. The entire area is much used for hunting, trapping and fishing. Forest growth is good on some sheltered deep-soil sites, but access will likely preclude commercial use for some time.

#### B.32 - Forest-tundra

The surface fuels of lichens and shrubs provide continuity for fire development, although fuel densities are lower and fires are generally less intense. The section forms part of the barren ground caribou range, and also supports a few moose, particularly along watercourses supporting heavy stands of willow. Trapping activity is also extended into this section.

#### B.33 - Alpine forest-tundra

Open park-like stands of stunted white spruce, alternating with patches of grassy or shrubby vegetation, or with rocky barrens, are a characteristic of the mountain slopes up to treeline at about 1050-1150 m (3500-3800 ft.). Aerial observation indicates that this section also experiences extensive fires. However, relatively little human activity apparently takes place within it except at higher elevations which sustain big game guiding and outfitting in the early fall. The effect of fire on the major big game species is not clear, but does not appear to be unfavourable.

### **Forest Fire and Their Characteristics in the Northwest Territories**

#### **Introduction**

Although the principles of fire behaviour apply globally, every area has distinctive characteristics of fuels, weather and climate, and topography which in turn give fires distinctive characteristics. Because of these differences no two fires are alike.

In the Northwest Territories lightning generated primarily through airmass and frontal activity ensures chances for ignition. Presence of flammable fuels provide opportunities for fires to start. Periods of summertime drought, high temperature, low relative humidity and long daylight hours provide conditions within which fires can burn with rapid rates of spread, high fire intensity and opportunity to reach large sizes.

Fire is not a recent occurrence in this region. Alexander MacKenzie noted a forest fire on August 14, 1789, apparently along both sides of the Liard River (Johnson & Rowe, 1974). Preliminary analysis of lake sediments near

Norman Wells indicate recurrent fires for about the past 2 800 years ( Rowe et al. 1975).

### **Fuels**

Virtually all vegetation types are flammable at some time during the fire season. In general, poplars, willows, grass and sedge are especially flammable in spring before green-up or in fall after dead foliage has cured. Conifers are especially flammable during summer, and are suspected to be particularly so in late spring as a result of an apparent dip in green foliar moisture content (Stashko and McQueen 1973, Fuglem 1979).

Lichens are particularly flammable. They have no vascular tissue and lend themselves to rapid drying. They may become flammable within hours after a light rain. Many of the dwarf shrubs have resinous evergreen leaves and twigs. Even the deciduous birches and green alder are resinous and burn rapidly early in the year. Some surface fires may burn shrubs and conifer litter but not the lichens (Rowe et al. 1975). Higher relative humidity can result in reduced flammability of lichens while the resinous content of the other species can sustain fire.

Stands of aspen are generally less fire-prone in summer, and may be used to advantage as fuel breaks. However, open areas of grass and sedge may contain sufficient dead material within the green stems to carry fire, even during the summer.

Fire burning in the surface are relatively easy to fight. However, when fires burn into the crowns of standing trees the height of flame activity, fire intensity, and rate of spread all increase substantially. Fire is encouraged to reach into the crowns by the presence of "ladder" fuels which provide a vertical continuity of fuels. Black spruce commonly retains branches to the ground so easily "torches" through a combination of dead twigs and flammable foliage. Both black spruce and jack pine have bark scales and fire will commonly travel into the crowns through them at times of low relative humidity. Arboreal lichens (old man's beard) are common in older stands and is also highly flammable in low humidities. As a result of these factors the development of crown fires is common when surface fires are intense enough to trigger them.

The ability of fire to grow in size is dependent on continuity of fuel. Except in some areas where lakes and rivers are common continuity of fuels in the Northwest Territories is such that large fires may readily develop. In fires of high intensity, "spotting" occurs and glowing or burning embers are carried ahead of the fire and across fuel breaks. Helicopter support for observation and "bucketing" of water is essential.

Fuel characteristics will differ on upland and lowland sites. Upland sites are generally more fire-prone since they dry more quickly and thoroughly. However, in times of deep drought (high Buildup Index) virtually all sites become flammable.

Fuel volume has a tendency to build up with increasing stand age since the rate of biological decomposition in the North is less than the rates of growth. Also associated with age are development of flammable lichen and resinous shrubs. Rowe et al. (1974) wonder, for example, if the very large areas burned over in recent years in the northern part of the Mackenzie Valley may reflect the maturing of vegetation last burned in the 1800's.

### **Rates of Spread and Fire Size**

Conditions in this region are conducive to rapid rates of fire spread. Lanoville (1979) described a spring fire near Wrigley which spread from 2 ha (5ac.) at time of discovery to 1 000 ha (2,500 ac.) in two hours, and after only eight days of drying from the time of snowmelt. The Willowlake River fire in 1979 spread 11 km (7 mi.) in a 4.5 hour run, and travelled 19 km (12 mi.) the next day. The 1979 Pine Point fire ran 8 km (5 mi.) during its first major burning period.

The Forest Fire Weather Index developed by the Canadian Forestry Service (1976) provides a method for calculating relative fire severity based on weather factors. The numerical indices obtained are commonly categorized into descriptive classes. Lanoville described these categories in terms of typical flame height. These are subjective estimates, further work on the FWI relation to northern conditions is warranted.

FWI Class	Flame Height
Low	Intermittent
Moderate	2 - 3 feet (0.6 - 1.0 m)
High	3 - 6 feet (1.0 - 2.0 m)
Very High	6 - 20 feet (2.0 - 6.0 m)
Extreme	to 120 feet + (35.0 m +)

The flame height in the high category was described as the limit at which direct attack with hand tools is possible because of radiant heat. During 1979 the FWI Index remained in the High or greater categories, except for only three short periods during the critical months of July and August.

Rates of spread at times of high FWI point out how critical it is to obtain early detection and launch rapid, hard-hitting initial attack if fires starting during those conditions are to be controlled.

Fire size is related to rate of spread, fuel continuity, days left in the burning season, and effectiveness of fire attack. In their 1975 study, Rowe et al. found that less than 10% of all fires were larger than 4 000 ha (10,000 ac.) but they accounted for about 80% of the total area burned. Fires in this larger size category were found to occur in years of many fire outbreaks, while in years of few fires the sizes were small. This further reinforces the point that where a target level of fire control is desired, it is important to be able to mobilize resources in response to predictors of heavy fire loads.

### **RESISTANCE TO CONTROL**

The term resistance to control describes the difficulty of stopping a fire. Resistance is commonly seen as a combination of fire intensity and physical resistance to stopping the fire itself through clearing fuel breaks or applying water. In general, fuel in the region do not have a high resistance to control except during periods of high to extreme fire hazard. Lanoville (1979) describes spread rates in lichen fuels as extremely explosive and capable of rapid spread. However, since the fuels are light it does not take much effort to stop the fire. On the other hand, fires burning in heavier fuels will generate sufficient heat during high hazard times that direct attack becomes impossible.

A typical behaviour pattern in semi-open black spruce stand is the "line of fire" which is a combination surface fire in woody shrubs, moss and lichens with simultaneous "torching" of individual trees. This gives the appearance of a line or wall of crowning fire behaviour. Direct attack can only take place when fire spread slows so that "torching" is sporadic. This contrasts to the higher-intensity "crown" fire where fire travels within the crown canopy. These, too defy direct attack.

A fuel combination difficult to control is mix of flashy fuels such as lichen, and deep organic fuels. The lichen itself is easily controlled, but fires may hold-over in the deep organic fuels in a smouldering condition during evenings or showery conditions only to reignite the flashy fuels again when they dry out. Fire may burn deeply into the organic fuels giving them a high resistance to control and consuming great time and effort to extinguish. This can result in long mop-up times on larger fires."

The fire environment described above by Canadian experts means that equipment used to control fires, or to limit the rapid spread of fires in a vast, sparsely populated land area, must meet certain requirements.

In the case of land based air tankers the ability to haul a large volume of retardant over relatively long distances in a short time period and apply that load effectively in such a way as to change the forest fuel complex so that forest fire spread is reduced or eliminated is necessary. There are only six airports in the forested area that can handle heavy aircraft capable of meeting this need. The airports are upwards of 150 to 350 miles apart.

Retardant applied to forest fuels ahead of a spreading fire is very effective at stopping the fire. The retardant, valued at \$1.45 per gallon, must be applied in a specific way to maximize its effectiveness on the forest fuels. Retardant tank systems designed and tested specifically for this purpose allow the application of from 900 litres to 11,300 litres of retardant depending on the actual fire conditions as assessed by the Air Attack Officer. In most cases air tankers are dispatched to fires burning in the high to extreme conditions described in the Introduction and usually require the full 11,300 litres of retardant. In multiple fire occurrence situations the capability to apply minimum amounts means that more than one fire can be contained on one mission. Tank systems that do not have multiple drop capability and a large volume capacity cannot achieve these kinds of mission objectives.

The following specifications describe two types of air borne retardant delivery tank systems that will meet the job requirements for control of fires in the NWT fire environment.

### Tank and Gating System

#### General:

The tank/gating system must meet and be certified to Transport Canada, airworthiness requirements that are applicable to the airframe being proposed, in a fire bombing role.

Two separate tank/gating systems will be acceptable in meeting GNWT performance requirements. The contractor may propose either system for consideration by the GNWT.

It is preferred that the primary and supplementary airtanker aircraft have identical systems.

The tank/gating systems proposed may be either a conventional compartmentalized tank or a variable (constant) flow system. The performance specifications for each system will be identified separately.

### Conventional Compartmentalized Tank/Gating System

(note: all volumes are in Imperial Gallons)

1. The tank must have equal size compartments of no less than 200 gallons and no more than 250 gallon capacity with a watertight drop door on each compartment. Capacity must be a minimum of 2500 Imperial gallons of payload (27,000 pounds) plus adequate airspace for expansion of contents. (Minimum 10%)
2. Tank and door seals must be watertight. This will be established by filling the tank with water to the specified full mark (a minimum 2500 gallons). Maximum total allowable leak rate is one gallon per 24 hours.
3. Loading system must be 3 inch kamlock fittings in aft section on both sides. Each loading system must

accept a flow rate of 500 gallons per minute. A non-return valve must be installed to prevent outflow and a cap provided to close the opening on the outside of the kamlock fitting.

4. The tank vent system to allow air to enter tank during drops must be leak-proof on takeoff, landing and during aborted takeoffs.
5. Doors must open and close when aircraft is on the ground in normal ground position. Doors must open and close in flight without adverse effects on aircraft handling up to normal cruise speed.
6. An emergency drop system must be provided. This system must be independent of the normal system, accessible to both pilots and contain no electrical components.
7. Tank compartment door opening must be sequenced by a microcomputer system in an automatic mode as well as manual sequencing by the pilot. Sequencing must be selected by the pilot in any of the following options:
  - 1 compartment x 1 - to total number of compartments available (trail)
  - 2 compartments x 1 - to total number of compartments available in increments of 2 (trail)
  - 4 compartments x 1 - to total number of compartments available in increments of 4 (trail)
  - 6 compartments x 1 - to total number of compartments available in increments of 6 (trail)
  - total compartments x 1 release (salvo)
8. The microcomputer tank compartment door opening system time between door openings in the automatic mode must provide range from 0.00 seconds to 1.00 seconds in increments of 0.05 seconds as selected by the pilot. This must be verified by static tests.
9. Average flow rate from each compartment (door) may not be less than 400 gallon per second and not more than 500 gallons per second. This must be verified by static test.
10. Frontal width of fluid leaving each compartment must be between 8 and 10 inches. The specified average flow rate combined with the specified frontal width of the liquid leaving the tank provide an increase in the time required for breakup of the retardant drop (due to drop speed and drop height) which allows a more concentrated pattern on the ground with less "fringe" area of inadequate coverage. The microcomputer door opening system combined with the specified single compartment flow rates allow the Air Attack Officer to adjust flow rates for multiple compartment releases to meet coverage level requirements particular to an individual forest fires' behaviour and ground fuels.
11. An overflow vent in front and back section must be used to show that the tank is full to specified quantity (a minimum 2500 gallons). This must be readily visible on both sides of the aircraft to the loading crew .
12. Non return valves must be installed on dividing walls between each compartment where fluid passes during filling of tank.
13. An off-load system must be provided to allow a full tank to be emptied using ground pumps to move the fluid.
14. Aircraft and tank must be designed to allow landing at maximum gross aircraft landing weight with the load

intact. Aircraft and tank must be capable of sitting for up to 7 days with full load in the tank.

15. A foam injection system must be installed to allow foam concentrate to be ground loaded and injected in equal volumes into each compartment. The ground load system must be through 1 inch kamlock fittings in the aft section on both sides to allow loading from either side of the aircraft.
16. The tank/gating and drop control system must be capable of producing at a coverage level of 1.65 gallons per 100 square feet a ground drop pattern width of between 30 and 50 feet, at a length ratio of 1.4 gallons per foot of line produced and a total release volume of not less than 2500 gallons. (ie. 2500 gallon trail drop must produce a minimum of 1785 feet of retardant line, 30-50 feet wide at a coverage level of 1.65 gallons per 100 square feet.)
17. The tank/gating and drop control system must be capable of producing at a coverage level of 2.5 gallons per 100 square feet with a ground drop pattern width of between 30 and 50 feet, at a length ratio of 2.0 gallons per foot of line produced and a total release volume of not less than 2500 gallons. (ie. 2500 gallon trail drop must produce a minimum of 1250 feet of retardant line, 30-50 feet wide at a coverage level of 2.5 gallons per 100 square feet.

#### Static Testing

Static Testing if required - will be conducted by the Intermountain Fire Sciences Laboratory at Missoula, Montana. Static tests will be undertaken during the period April 1 - 15, 1995 only. All costs associated with positioning and depositing the aircraft at Missoula, along with all crew costs and attributing testing costs will be the responsibility of the Contractor.

Static testing of the door opening speed, the negative pressure above the load (measured above each compartment during a compartment release), time interval between door openings and peak flow rate of a load leaving each compartment will be conducted.

Specification Verification - all other noted specifications of the Airtanker Fire Bombing System will be measured or tested during the period April 1 - 15, 1995, of the first year of the contract. The aircraft will not be accepted on contract until such time as the performance specifications can be verified and complied with.

#### Non-Conventional Variable Flow (Constant) Tank/Gating System

(Note: all volumes are in Imperial Gallons)

1. The tank must have a design such that the retardant fluid will flow in a continuous specified flow rate for a specified volume. The watertight gating door(s) shall offer a minimal frontal area to exiting fire retardant not to exceed 20 inches.
2. Tank capacity must be a minimum of 2500 imperial gallons of fire retardant (27,000 pounds) plus adequate airspace for expansion of contents. (Minimum 10%).
3. Tank and door seals must be watertight. This will be established by filling the tank with water to the specified full mark ( a minimum 2500 gallons). Maximum total allowable leak rate is one gallon per 24 hours.

4. Loading system must be 3 inch kamlock fittings in aft section on both sides, enabling the aircraft to be loaded from either side. Each loading system must accept a flow rate of 500 gallons per minute. A non-return valve must be installed to prevent outflow and a cap provided to close the opening on the outside of the kamlock fitting.
5. An overflow vent or fill level gauge/indicator is required that shows the tank is full to specified quantity (minimum 2500 gallons). The vent or indicator must be readily visible to the loading crew at the loading ports on both sides of the aircraft.
6. An off-load system must be provided to allow a full tank to be completely emptied using ground pumps to move the fluid.
7. Aircraft and tank/gating system must be designed to allow landing at maximum gross aircraft landing weight with the load intact. Aircraft and tank must be capable of sitting for up to 7 days with a full load in the tank.
8. An emergency drop system must be provided. This system must be independent of the normal system, accessible to both pilots, and contain no electrical components.
9. Vent system to allow air to enter tank during drops must be leak-proof on takeoff, landing and during aborted takeoffs.
10. Doors must open and close when aircraft is on the ground in normal ground position. Doors must open and close in flight without adverse effects on aircraft handling up to normal cruise speed.
11. Any door or combination of doors must not laterally deflect the flow of retardant from the tank. Opposed doors must be mechanically linked to ensure equal opening angles.
12. The drop control system must be capable of providing specified load releases in increments of not less than 200 gallons and not exceeding 250 gallons up to the full capacity of the tank ( minimum 2500 gallons).
13. A door over ride button must be provided to allow manual control of the volume (line length) for the various selected flow rates.
14. The tank/gating system must produce consistent and repeatable drops for the various specified flow rates and drop volumes from 200-250 gallons up to a full load. For each drop selection, the release volumes must not vary by more than 10 percent and the average flow rate must not vary by more than 15 percent.
15. The tank/gating and drop control system must be capable of providing specified flow rates ranging from 200 gallons per second to 2000 gallons per second in 200 gallon per second intervals.
16. The tank/gating and drop control system must be capable of producing at a coverage level of 1.65 gallons per 100 square feet a ground drop pattern width of between 30 and 50 feet, at a length ratio of 1.25 gallons per foot of line produced and a total release volume of not less than 2500 gallons. (ie. 2500 gallons trail drop must produce a minimum of 2000 feet of retardant line, 30 - 5- feet wide at a coverage level of 1.65 gallons per 100 square feet.).

17. The tank/gating and drop control system must be capable of producing at a coverage level of 2.5 gallons per 100 square feet a ground drop pattern width of between 30 and 50 feet at length ratio of 1.75 gallons per foot of line produced and a total release volume of not less than 2500 gallonw. (ie. 2500 gallon trail drop must produce a minimum of 1430 feet of retardant line, 30 - 50 feet wide at a coverage level of 2.5 gallons per 100 square feet.).
18. The drop pattern for each drop selection must be repeatable regardless of the volume remaining in the tank.
19. A foam injection system must be installed to allow foam concentrate to be ground loaded and injected in equal volumes into each compartment. The ground loading system must be through 1 inch kamlock fittings in the aft section on both sides to allow loading from either side of the aircraft.
20. The contractor must provide static test and grid drop data to show compliance with the specifications and performance requirements. Static testing if required will be conducted by the Intermountain Fire Sciences Laboratory at Missoula, Montana. Testing has been tentatively arranged during the period April 1 - 15, 1995.

All costs associated with positioning and depositions of the aircraft at Missoula, along with all crew costs and attributing testing costs will be the responsibility of the Contractor.

21. Performance Verification - Verification of performance requirements and tank/gating system specifications must be completed no later than April 30, 1995. The aircraft will not be accepted on contract until such time that all specifications and performance requirements have met and complied with.

The volume of retardant used in the above specifications weighs 27,000 pounds. Retardant as a chemical mixture in water weighs more than water. Retardant powder when mixed with water creates a "slurry" that is very thick like bottled barbecue sauce. When this material is dropped at specified drop heights and air speeds the retardant wraps around tree trunks and brush thus covering most of the vegetation with the chemical mixture. The mixture changes the fuel from one that is available for combustion to one that is not. This reduces the volume of forest fuels in the path of the fire thus reducing spread rates and changing flame intensity. This in turn permits fire crews on the ground to finish the containment of the fire and ultimately extinguish it.

If the retardant is not applied within certain drop heights and air speeds its effectiveness is lost thus making the use of retardant (\$1.45 per gallon) not cost effective. In addition, the flight circuit of an air tanker around a specific fire requires that aircraft carrying the retardant tank be capable of performing maneuvers in a small air space. The inability to do these required maneuvers means a longer time period between drops thus rendering the first retardant drops less effective. This translates into increased costs and increased possibility of fire escapes.

Attempting to manage smaller air tankers in groups of three or four has similar results in the small air space. The first tanker must be well clear before the second tanker can drop. The time delay can mean the fire has negated the first drop or rendered it less effective. In smoke and poor visibility the increased risk of multiple aircraft circulating around a fire creates additional needs for separation and adds flying charges to the cost effectiveness of the group. In addition, multiple small airtankers utilize approximately 20-25% additional fire retardant when tagging on to build lines down flanks or across the head of a fire in order to ensure there is not gaps in the line. One tanker carrying a larger volume eliminates this operational and expensive problem.



Fire spread takes place over time. In many air tanker missions fires are spreading rapidly (p to 35 metres a minute). The longer the time delay from dispatch to arrival at a fire the greater the size of the fire upon arrival. In addition, the intensity of a fire under extreme burning conditions (150,000 kilowatts per metre of fire line) the larger volume of retardant is needed to stop the fire flame front.

The combination of the requirement for a large volume of material on one aircraft and the need to fly and manoeuvre in the operational fire environment require an aircraft that meets certain carrying capacities, speed and manoeuvring capability.

In order to maximize the utilization and capability of the aircraft as well as provide timely operational capability for the movement of personnel, bulk cargo such as fire retardant, support equipment for fire operations and CL-215 operations, the aircraft are required to be equipped to handle palletized freight and limited passenger seating.

Specifications that meet these operational requirements are as follows. The contractor is to propose an appropriate aircraft platform that meets or exceeds the identified performance requirements.

### Aircraft

- i) Two multi-engine fixed wing aircraft (primary aircraft plus supplementary aircraft).
- ii) Aircraft must have the following performance capability at gross weight in fire bombing configuration:
  - minimum retardant payload of 27,000 pounds with four (4) hours fuel endurance on board;
  - minimum cruise speed (at 5000 feet ASL, ISA) 215 knots;
  - minimum rate of climb (at sea level, ISA) 1,000 feet per minute;
  - minimum rate of climb engine out (at sea level, ISA, load released) 1,000 feet per minute;
  - maximum drop speed, full flaps - 140 knots;
  - maximum runway requirements (paved, sea level, +35 C) 6000 feet;
  - maximum turning radius (at drop speed, all engines/45 degrees of bank) 0.5 nautical mile;
  - maximum turning radius (at drop speed, engine out/30 degrees of bank) 0.5 nautical mile.
- iii) Internal cargo capability for palletized freight with a minimum payload capacity of 27,000 pounds with four (4) hours fuel endurance on board;

Front and rear cargo doors (only required if tank truss system protrudes above cargo floor otherwise one suitable cargo door only), cargo tie downs and nets;

  - cargo door(s) opening must be a minimum of 122" wide x 78" high (one only required) sized to

handle spare CL-215 QEC engine. Second cargo door, if required, must be a minimum of 86" wide x 60" high.

-cargo floor must be of adequate strength and composition to allow use of standard hard wheeled pallet jacks for the movement of palletized bulk cargo. (Metal planked floor preferred.)

- iv) Alternatives for moving cargo under iii may be considered.

Equipment:

The aircraft must be equipped with and Transport Canada Certified for:

- i) Installation and carriage of six (6) passenger seats for GNWT support personnel and two (2) passenger seats for Contractor personnel for movement on base changes;
- ii) Passenger compartment public address system;
- iii) White strobe light visible from all directions;
- iv) IFR capability;
- v) Survival equipment specified for Flight in Sparsely Settled Areas (per A.N.O.V. No. 12);

Radio/Navigation:

Radio/Navigation equipment must include:

- i) Two VHF/AM transceivers with 118MHz to 135.95MHz frequencies and a channel spacing of 25KHz;
- ii) One VHF/FM transceiver with a frequency range of 150 to 174MHz, the control head provision for 20 pilot programable, preset simplex and semi-duplex channels and pilot programable guard frequencies or scanning capabilities. Northern Airborne Technology (NAT) Tac Com CH-201 control head, Wulfsberg C-5000 Control Head, and Technisonic TFM-138 transceiver or equivalent will meet these requirements;
- iii) Two A.D.F.;
- iv) An Emergency Locator Transmitter (ELT);
- v) A DME with both distance and ground speed indication;
- vi) One Global Positioning System (GPS) Trimble Navigation Model TNL-2000 or equivalent;

ANNEX "B"  
SPECIFICATIONS  
BIRD DOG AIRCRAFT

## SPECIFICATIONS - BIRDDOG AIRCRAFT

### a) Aircraft

- i) Pilot and co-pilot (Air Attack Officer) seats are to be located ahead of the engines and props;
- ii) Overhead windows are to be provided above both front seats;
- iii) Aircraft to have the following performance capability at gross weight;
  - cruise speed (at 4000 feet ASL 65 percent power) 200 knots
  - rate of climb (at sea level) 1800 ft/min
  - single engine rate of climb (at sea level) 350 ft/min.
  - four hours fuel endurance.
- iv) Should the proposed airtanker aircraft (annex "A" - ii) have a cruise speed in excess of 220 knots, the Birddog aircraft proposed under annex "B", for the Heavy Land Based Airtanker, shall have a cruise speed (at 4000 feet ASL 65 percent power) of no less than 90 percent of the airtanker aircraft;

### b) Equipment

The aircraft is to be equipped with:

- i) white strobe lights visible from all directions, i.e. on wing tips and tail;
- ii) I.F.R. capability, including propeller de-icing equipment;
- iii) survival equipment as specified for Flight in Sparsely Settled Area (per A.N.O.V. No. 12).

### c) Radio/Navigation Equipment

Radio/Navigation equipment to include:

- i) two panel mount King model KY-196A or equivalent AM/VHF transceivers with 118MHz to 135.95 frequencies and a channel spacing of 25KHz; Each transceiver must be capable of maintaining a standby frequency in storage and displayed on the control head.
- ii) two A.D.F.;
- iii) an Emergency Locator Transmitter (ELT);
- iv) a DME with both distance and ground speed indication;
- v) a panel mount Global Positioning System (GPS) accessible and readable by both front seat positions. Trimble Navigation model TNL-2000 or equivalent.

- vi) a Northern Airborne Technology (NAT) Tac Com CH-201 Control Head with a N.A.T. NT-150VHF-FM transceiver. Equivalent transceivers that are capable of providing 20 pilot programable, preset simplex and semi-duplex channels, pilot programable guard frequencies, scanning capability and tone assignments will be considered. Provision must be made, including appropriate harnesses, to install as required, either a Wulfsberg RT 30 VHF-FM transceiver or N.A.T. NT-403 UHF transceiver into the same control head.
- vii) provision for hook-up to a back-up portable FM radio must be installed;
- viii) an intercom to front seats and two rear seats, with headsets and boom microphones for each position; headsets and microphones to be David Clark type or equivalent; voice actuated or "hot-mikes" to be provided for each position;
- ix) integrated communications mixer box Northern Airborne Technology (NAT) model AMS-44 or equivalent to provide independent access/operation by the Pilot and Air Attack Officer to all radio and communication equipment. This system is to allow both the Pilot or Air Attack Officer to transmit, receive and monitor independently any or all of the radio equipment (2 VHF-AM, VHF/FM, back-up portable FM) at any time and is to have 2 intercom selections so the Pilot and Air Attack Officer can communicate in either the voice actuated/"hot-mike" or "push to talk" modes; side tone and separate volume controls for each side of the mixer box to be provided; transmitting and receiving to be through the headsets and boom mikes for all radios for the front two seats; rear seat positions to be provided with receive/monitoring of all radio and voice actuated/"hot-mike" intercom system access only;
- x) a Whelan Model WS-295-50 siren/PA system with two model SA380 speakers. One speaker is to be mounted into the left side of the aircraft facing in a horizontal direction; the second speaker is to be mounted in the bottom of the aircraft facing down in vertical direction. The controller unit and microphone is to be pilot and air attack officer accessible in the front panel or between the forward seats.

Unserviceable radio and navigation equipment and accessories may be considered as rendering the aircraft unavailable for operational use.

**ANNEX "C"**  
**REQUIREMENTS**  
**AIR CREW FOR**  
**LAND BASED AIR TANKER AIRCRAFT**

## AIR CREW REQUIREMENTS FOR LAND BASED AIRTANKER AIRCRAFT

### 1. Pilots-in-Command:

1.1 The Contractor may not assign a crew member as Pilot-In-Command (PIC) unless that crew member holds an appropriate valid ATR (Airline Transport Licence) with a Class I Instrument Rating under the Air Regulations and is qualified in accordance with Air Navigation Orders, Series VII, Number 2..

1.2 Upon training and prior to the first forest fire season , the PIC must have:

- |       |  |   |                                      |
|-------|--|---|--------------------------------------|
| 1.2.1 | Total PIC with all aircraft types  | - | 4000 hours                           |
| 1.2.2 | Total PIC on multi-engine aircraft   | - | 1000 hours                           |
| 1.2.3 | Forest fire flying environment   | - | 500 hours                            |
| 1.2.4 | PIC on water operations  | - | 500 hours                            |
| 1.2.5 | PIC on aircraft over 12,500 lb<br>(or a combination of 500 hours plus<br>500 hours as First Officer (F/O)) | - | 1000 hours                           |
| 1.2.6 | Time as PIC on fixed-wing land<br>based (retardant) airtanker operations                                   | - | 200 hours and/or<br>two fire seasons |

### 2. Second-In-Command:

2.1 The Contractor may not assign a crew member as Second-In-Command (SIC) unless that crew member holds an appropriate valid ATR (Airline Transport Licence) with a Class I Instrument Rating under the Air Regulations and is qualified in accordance with Air Navigation Orders, Series VII, Number 2.

2.2 Upon training and prior to the first forest fire season , the Second-In-Command (SIC) must have:

- |       |  |   |                               |
|-------|--|---|-------------------------------|
| 2.2.1 | Total PIC with all aircraft types      | - | 3000 hours                    |
| 2.2.2 | Total PIC on multi-engine aircraft     | - | 1000 hours                    |
| 2.2.3 | Total PIC on aircraft over 12,500 lbs. | - | 100 hours or 500 hours as SIC |

### 3. General:

3.1 Flight crews operating in sparsely settled areas should have first aid and survival training.

3.2 Any Airtanker aircraft back-up flight crews must meet the same requirements as stipulated above for the primary flight crews.

**ANNEX "D"**

**REQUIREMENTS**

**MAINTENANCE CREW FOR**

**LAND BASED AIR TANKER AIRCRAFT**



## **AIRCRAFT MAINTENANCE CREW FOR LAND BASED AIRTANKER AIRCRAFT**

1. Aircraft Maintenance Engineer: (one per aircraft group)

- 1.1 Engineer to be licensed "M" and endorsed on large aircraft using Radial or Turbine engines.
- 1.2 Upon training and prior to the first fire season, each engineer must be in possession of the airtanker and birddog aircraft endorsement obtained through DOT or DOT approved company training and endorsement.

2. Aircraft Apprentice Engineer: (one per aircraft group)

Must be an accredited aircraft apprentice engineer and be familiar with the proposed aircraft and their equipment..

3. General:

- 3.1 All Airtanker maintenance personnel must have appropriate licences, endorsements and qualifications in accordance with Transport Canada regulations.
- 3.2 Any Airtanker back-up maintenance personnel must meet the same requirements as stipulated above for the primary maintenance personnel.
- 3.3 The Contractor must have the capability to maintain, in operational condition, all radio and electronic equipment specified or required under the request for proposal and contract.

**ANNEX "E"**  
**PILOT REQUIREMENTS**  
**FOR**  
**BIRD DOG AIRCRAFT**

## PILOT REQUIREMENT FOR THE BIRDDOG AIRCRAFT

### 1. Pilot-in-Command:

1.1 The Contractor may not assign a crew member as Pilot-in-Command (PIC) unless that crew member holds an appropriate valid ATR (Airline Transport Licence) with a Class I Instrument Rating under the Air Regulations and is qualified in accordance with Air Navigation Orders, Series VII, Number 3.

1.2 Upon training and prior to the first forest fire season , the PIC must have:

1.2.1 Total PIC time with all aircraft types - 2000 hours

1.2.2 Total PIC time on multi-engine aircraft - 500 hours

1.2.3 Total PIC time as Birddog pilot or airtanker pilot - 200 hours  
and/or 1  
season

### 2. General:

2.1 Any Birddog pilot must have appropriate licences, endorsements and qualifications in accordance with Transport Canada regulations.

2.2 Flight crew operating in sparsely settled areas should have first aid and survival training.

2.3 Any back-up pilots must meet the same requirements as stipulated above for the primary flight crews.

2.4 The Birddog pilot is subject to approval by the Inspection Authority.

**ANNEX "F"**  
**REQUIREMENTS**  
**MAINTENANCE CREW FOR**  
**BIRD DOG AIRCRAFT**

## AIRCRAFT MAINTENANCE CREW FOR BIRDDOG AIRCRAFT

1. Aircraft Maintenance Engineer:

Any engineer must have the appropriate licence and be endorsed on the proposed birddog aircraft.

This function may be exercised by the Airtanker aircraft engineers if properly licensed and endorsed.

2. General:

Proposers must have the capability to maintain, in operational condition, all radio and electronic equipment required under the contract.

**ANNEX "G"**  
**REQUIREMENTS**  
**AIR CREW FOR**  
**CL-215 AIRCRAFT**

## AIR CREW REQUIREMENTS FOR CL-215 AIR TANKER

### 1. Pilots-in-Command

- 1.1 The Contractor may not assign a crew member as Pilot-in-Command (PIC) unless that crew member holds an appropriate valid ATR (Air Transport Licence) with a Class I Instrument Rating under the Air Regulations and is qualified in accordance with Air Navigation Orders, Series VII, Number 2, including a Class 9 endorsement (single and multi-engine, land and sea).
- 1.2 Upon training and prior to the first forest fire season the PIC must have:
  - 1.2.1 Total PIC with all aircraft types - 4000 hrs
  - 1.2.2 Total PIC on multi-engine aircraft - 1000 hrs
  - 1.2.3 Forest fire flying environment - 500 hrs
  - 1.2.4 PIC on water operations - 500 hrs
  - 1.2.5 PIC on aircraft over 12,500 lbs - 500 hrs  
(or a combination of 250 hrs plus 500 hrs as First Officer (F/O))
  - 1.2.6 Time as PIC on fixed-wing airtanker operations - 200 hrs  
(or 400 hrs as F/O on CL-215 or other amphibious airtanker)

### 2. Second-in-Command:

- 2.1 The Contractor may not assign a crew member as Second-in-Command (SIC) unless that crew member holds an appropriate valid ATR (Airline Transport Licence) with a Class I Instrument Rating under the Air Regulations and is qualified in accordance with Air Navigation Orders, Series VII, Number 2, including a Class 9 endorsement (single and multi-engine, land and sea).
- 2.2 Upon training and prior to the first forest fire season, the Second-in-Command (SIC) must have:
  - 2.2.1 Total PIC with all aircraft types - 2000 hrs
  - 2.2.2 Total PIC on multi-engine aircraft - 500 hrs
  - 2.2.3 PIC on water operations - 500 hrs

### 3. General:

- 3.1 Flight crews operating in sparsely settled areas should have first aid and survival training.
- 3.2 Any CL-215 back-up flight crews must meet the same requirements as stipulated above for the primary flight crews.

**ANNEX "H"**  
**REQUIREMENTS**  
**MAINTENANCE CREW FOR**  
**CL-215 AIRCRAFT**



## AIRCRAFT MAINTENANCE CREW FOR CL-215 AIR TANKER

1. Aircraft Maintenance Engineers: (one per aircraft)

- 1.1 Engineers to be licensed "M" and endorsed on large aircraft using radial engines (preferably R 2800).
- 1.2 Upon training and prior to the first forest fire season , each engineer must be in possession of the CL-215 endorsement obtained through a manufacturer's, Transport Canada approved course.

2. Other Aircraft Maintenance Personnel:

Aircraft maintenance apprentice engineers or helpers must be provided in sufficient number to perform all services in accordance with the terms and conditions of the Provision, Operation, and Maintenance Contract and Dry Lease Agreement.

3. General:

- 3.1 All CL-215 maintenance personnel must have appropriate licences, endorsements and qualifications in accordance with DOT regulations.
- 3.2 Any CL-215 back-up maintenance personnel must meet the same requirements as stipulated above for the primary maintenance personnel.
- 3.3 The Contractor must have the capability to maintain, in operational condition, all radio and electronic equipment specified or required under the POMS contract and the leasing agreement.

**ANNEX "I"**

**GNWT DIRECTIVE**

**COMMERCIAL ROOM AND BOARD**

**No. 20-4**

**December 6, 1994**

No.: 20-4  
Issue: 4  
Date: December 06, 1994.

USE OF COMMERCIAL ROOM AND BOARD

Supersedes: November 27, 1989

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1 STATEMENT OF DPWS POSITION

The Department of Public Works & Services (DPWS), supports and encourages the use of establishments providing commercial room and board and requires Contracting Businesses undertaking works for the DPWS to use these facilities. Therefore, whenever a facility providing commercial room and board is available within the community the GNWT requires that this facility be used and prohibits a Contracting Business from renting or purchasing a private facility or using or importing a trailer, recreational vehicle, tent or similar transportable form of room and board.

This Directive applies to all persons employed for the purpose of this contract who are not residents of the community in which the contract is taking place.

2 AUTHORITIES

None Applicable

3 DEFINITIONS

For the purpose of this directive the following definitions shall apply.

.1 Business

A person or entity which is legally entitled both to enter into contracts and to carry on business in the Northwest Territories.

.2 Commercial Room and Board Facility

means a facility which is:

- operated by an NWT business and is
- licensed by the GNWT under the Travel and Tourist Act as a "tourist establishment ", and is
- licensed by the GNWT under the Eating or Drinking Place Regulation, and
- meets all of the requirements of the Fire Protection Act, the Public Health Act and any other applicable GNWT or federal legislation.
- *Not a Bed & Breakfast Facility*

*Where there is no Commercial Room & Board facility available, the Owner may direct the Contracting Business to use a Bed & Breakfast facility which provides a comparable service and standard to a qualified Commercial Room & Board facility. The utilization of any other room and board facility must be approved by the Deputy Minister of Public Works & Services.*

.3 Supplier:

means a Business providing commercial room and board in accordance with this directive.

.4 Community

means the community in which the work is located as defined in the relevant appendix in a contract between the Owner and a Contracting Business and includes, at least, the entire area within a 20 kilometer radius of the community.

.5 Contracting Business

means any business that is undertaking a Contract in the community.

.6 Standing Offer Agreement for Room and Board

means an agreement between the DPWS and a Supplier which sets out terms and conditions for the provision of commercial room and board by a Supplier to the Contracting Business.

.7 Owner

An owner shall include any organization which has the authority to enter into a contract and shall include any Government of the Northwest Territories department, agency and corporation, as well as any community and other organization when 51 percent or more of the organization's total funding or when 51 percent or more of the funding received for a specific project is obtained directly or indirectly from the Government of the Northwest Territories.

4 SCOPE

- .1 On contracts between an Owner and a Contracting Business where a commercial room and board facility exists within the Community, the Contracting Business is required to use a Commercial Room and Board Facility to house and feed all workers directly employed by the Contracting Business and by any subcontractor or agent or any other business working on the project; except:

workers who maintain their primary residence in the community or stay in their primary residence and commute to the project location by road, land, boat or air on a daily basis.

5. PROVISIONS

- .1 The Contracting Business, or any subcontractor if the subcontractor is responsible for the provision of its own room and board, shall enter into a written contract with a Supplier who shall incorporate into the written contract, as minimum standards for Room and Board, the terms and conditions of the Standing Offer Agreement for Room and Board. If requested by the Owner, the Contracting Business shall provide a copy of the contract(s) to the Owner.

6. EXEMPTIONS

.1 Owned Facility

*On any specific Tender Call or Request for Proposal, a Contracting Business may be specifically exempted from the requirements of this directive if the Contracting Business is a Business whose principle administrative office is located in the community in which the Contract is taking place or as defined by the Contract, and has owned a permanent facility, in the community, (other than a commercial room and or commercial board facility ) for a minimum and continuous period of six (6) months prior to the closing of the Tender Call/Request for Proposal. If a Contracting Business is exempted from the requirements of this Directive under the provisions of this Clause 6.1, the Contracting Business may use its owned facility to provide room and board to persons while those persons are in the direct employ of the Contracting Business and are persons working on the contract. The business shall not make its owned facility available to any other employee including any subcontractor's employee engaged on the project. The facility must comply with all federal, territorial and municipal statutory requirements in order to receive an exemption under Clause 6.1 the Contracting Business must apply in writing to the Senior Management Preference Committee prior to the close of the Request for Proposal.*

*Exemptions under this Clause 6.1 will only apply to those Contracting Businesses who have owned their own local accommodations on or before December 31, 1994. No exemptions under Clause 6.1 will be considered to any Contracting Business after December 31, 1995.*

.2 Willingness

The Contracting Business may be exempted from the provisions of this Directive if the Contracting Business and all Suppliers in the community are not willing or able agree to the terms to be contained in the contract for room and board between the Supplier and the Contracting Business as set out in the Standing Offer Agreement.

If the Contracting Business wishes to be exempted under Clause 6.2 a request in writing must be made jointly by both parties to the Owner.

3 Location

A Contracting Business may be exempted from this agreement if the project is located more than 20 kilometers away from the location of the commercial room board facility or if the commercial room board facility can only be reached from the project by plane or boat. The Contracting Business may be exempted under this clause 6.3 only if the exemption is stated in the tender documents by the Owner.

4 Reasonable Rates

The rates charged by the commercial room and board facility must not exceed the rates agreed to in the Standing Offer Agreement for Room and Board. If a Contracting Business wishes to be exempted under this clause a request in writing must be made by the Contracting Business directly to the Owner stating the basis upon which an exemption under this Clause 6.6 is requested.

5 Authority

Unless otherwise noted herein, only the Deputy Minister of the Department of Public Works & Services may approve exceptions to this Directive.

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Deputy Minister  
Public Works and Services

**ANNEX "J"**

**INSURANCE REQUIREMENTS**

**AIR TANKER SERVICES**



## INSURANCE REQUIREMENTS

The Contractors shall be responsible for provision of insurance requirements during the term of the contract as outlined in this Annex.

For each Air Tanker Aircraft, aircraft liability coverage for not less than \$100,000,000.00, combined single limit for loss of life, bodily injury and/or property damage, including passenger liability.

For each Birdog Aircraft, aircraft liability coverage for not less than \$10,000,000.00 combined single limit for loss of life, bodily injury and/or property damage including passenger liability.

The Contractor operating the Crown owned CL-215 aircraft should be aware that the GNWT shall obtain and keep in force insurance coverage on the CL-215 aircraft related to Aircraft Liability, Aircraft Hull and Breach of Warranty.

### Other Insurance Provisions:

- The Contractor shall obtain and maintain comprehensive general liability insurance coverage in the amount not less than two million (\$2,000,000.00) dollars inclusive for each occurrence or accident for bodily injury, death and property damage including loss of use thereof, covering all operations of the Contractor and including but not limited to:
  - i) Blanket Contractual Liability;
  - ii) Personal Injury Liability;
  - iii) Medical Payments;
  - iv) Employee As Named Insured;
  - v) Broad From Property Damage; and
  - vi) Cross Liability.
- Motor vehicle, water craft and snow craft standard liability insurance covering all vehicles and/or craft owned or non-owned, operated and/or licensed by the Contractor and used by the Contractor in the performance of this Agreement in an amount not less than one million (\$1,000,000.00) dollars per occurrence for bodily injury, death and damage to property; and with respect to busses limits of not less that two million (\$2,000,000.00) dollars for vehicle passenger hazards.
- Workers' Compensation Insurance covering all employees engaged in the work in accordance with the statutory requirements of the territory or province having such jurisdiction over such employees. If the contractor is assessed any additional levy, extra assessment or super-assessment by a Workers' Compensation Board as a result of an accident causing injury or death to the employee of the contractor or subcontractor, or due to unsafe working conditions, then levy or assessment shall be paid by the contractor at its sole cost and not reimbursed by the GNWT.
- Employer's Liability Insurance with limits not less that \$500,000 for each accidental injury to or death of the contractor's employee engaged in the work. If Workers' Compensation insurance exists, then in such event, the aforementioned employer's liability insurance shall not be required but the comprehensive general liability insurance policy referred to in item 7.6.3.5 herein shall contain an endorsement providing for contingent employer's liability insurance.

All policies shall provide thirty (30) days written notice be given to the GNWT prior to any material changes or cancellations of such policies. The policies shall name the GNWT as additional insured, except on Workers' Compensation Insurance. The Contractor shall have its insurers waive subrogation rights against the GNWT and its employees. The Contractor shall be responsible for any deductibles, exclusions and any insufficiencies of coverage relating to all insurance policies required.

The Contractor shall deposit with the GNWT prior to commencing the work certificates of insurance evidencing the insurances required by this agreement are in a form satisfactory to the GNWT and with insurance companies satisfactory to the GNWT.

Where any suit is instituted against the GNWT which the Insurer/Contractor (i.e. be named) would, but for this clause, have the right to defend on behalf of the GNWT as a co-insured under the required contract for insurance, the Insurer/Contractor shall promptly contact the GNWT for instruction by sending written notice to:

The GNWT

Manager, Risk Management & Insurance  
Department of Finance  
P.O. Box 1320  
Yellowknife, N.W.T. X1A 2L9

Clause to this effect shall be stipulated in all the insurance policies required.

The foregoing provisions shall not limit the insurance coverage required by municipal, provincial or federal law.

**ANNEX "K"**

**MUTUAL AID RESOURCES**

**SHARING AGREEMENT**

**(MARS)**

## MUTUAL AID RESOURCES SHARING (MARS) AGREEMENT

The Contractor may be required to perform services in support of the MARS Agreement within the jurisdiction of any signatory to the Agreement. These locations are: all National Parks, the Yukon Territory and the Northwest Territories, and the Ten Provinces of Canada. The Contractor may also be required to perform services in support of the Canada/U.S. Cooperative Agreement and must be able to ensure the insurance coverage, as stipulated herein, can be obtained and validated with 24 hours notice, for operations in the continental U.S. and Alaska. Additional costs for the specified insurance will be reimbursable.

The User Authority may, pursuant to the provisions of the MARS Agreement, assign the aircraft to perform forest fire management services for the benefit of any, or all, signatories to the MARS Agreement. All services shall be performed in accordance with the term, conditions, specifications and provisions of the contract, and all services shall be paid for in accordance with the terms of the contract. Additional shipping charges sustained in relationship to the MARS shall be paid to the contractor by the GNWT.

For the purposes of dispatching control, the User Authority may designate a qualified representative of the recipient organization's jurisdiction.

Any aircraft assigned to MARS support work is subject to immediate recall by the User Authority, and the Contractor will be obligated to follow this authority's instructions at all times.

The Contractor will be responsible for ensuring the insurance coverage as stipulated herein is valid for operation in all regions of Canada.

The cost of ferrying the aircraft to and from the location of the MARS support work shall be paid for at the rate per flying hour stipulated in the contract.