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PROJECT MANAGEMENT - MILITARY LIGHT ARMoured
VEHICLE - GENERAL

Project Management - General
Thyssen/Bear Head Correspondence

(non traduit)

CLOSED
FERMÉ

[illegible]

National Defence

Defense nationale

Deputy Minister

Sous-ministre

National Defence Headquarters,
Ottawa, Canada
K1A 0K2

Quartier général de la Défense nationale
Ottawa, Canada
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As a footnote, I advised company representatives that it was regrettable and intolerable that this need for a disciplined departmental process to scrutinize future defence equipment requirements had been misconstrued in some circles as self-serving, military tribalism. I stressed that such allegations questioning the integrity of senior DND officials and military officers were unfounded, unproductive and unacceptable.

With regard to the need for military vehicles, you will note from the enclosed record of discussion that the company was given an overview of the Canadian Forces' future requirements. Officials stressed that the army, whatever its future structure and role, would need a range of armoured vehicles but that there are no plans to acquire any soon. Specifically, no decisions on future armoured vehicle procurement could be anticipated within the next three to four years and no production envisaged within the next five to six years. Further, government officials stressed that any potential Canadian military vehicle requirement - armoured or otherwise - would be small by international standards. //

I also emphasized that the Canadian Government would welcome Thyssen investment in Canada. Officials acknowledged Thyssen's strong reputation as producer of an extensive range of excellent, albeit expensive, equipment product lines. At the same time, the group reminded company representatives that international competition among such equipment suppliers would become far more fierce in the future. Further, Thyssen representatives were told that officials believed that no Government would issue a carte blanche on export permits. Officials concluded that the Government would no doubt welcome a decision by Thyssen to set up a manufacturing plant in Canada on the basis of a full understanding of these realities.

Sincerely,



Robert R. Fowler

Enclosure: 1

→ c.c.: Mr. Harry Webster, Director General Aerospace
Marine and Electronics Systems

8 Feb 90

SUMMARY RECORD OF DISCUSSION
MEETING WITH THYSSEN/BEAR HEAD INDUSTRIES OFFICIALS
HELD IN CONFERENCE ROOM A
MAJOR GENERAL PEARKES BUILDING
NDHQ, OTTAWA ONTARIO
AT 0930-1200 HRS 5 FEBRUARY 1990

Attendees

Thyssen/Bear Head Industries

Mr. Karlheinz Schreiber
Mr. Jurgen Massman
Mr. Greg Alford
Mr. Ian Reid
Lieutenant-General (Ret'd)
Jack Vance, CMM, CD

Chairman
President
Senior Vice President
Director of Marketing

Defence Advisor

Government of Canada

Department of National Defence

Mr. Robert R. Fowler
General A. John G.D. de Chastelain
Vice-Admiral Charles M. Thomas

Lieutenant-General David Huddleston

Mr. Eldon J. Healey

Major-General John L. Sharpe

Major-General Gordon M. Reay

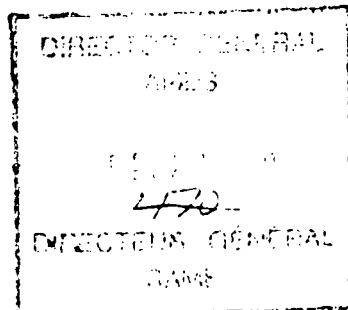
Mr. Raymond Sturgeon

Deputy Minister
Chief of the Defence Staff
Vice Chief of the Defence Staff
Deputy Chief of the Defence Staff
Assistant Deputy Minister (Materiel)
Chief Operational Planning and Force Development
Chief Land Doctrine and Operations
Acting/Chief of Supply

Privy Council Office

Mr. Ronald Bilodeau

Assistant Secretary to the Cabinet, Economic and Regional Development Policy



.../2

Industry, Science and Technology Canada

Mr. Cliff Mackay
Mr. Yves Moisan

ADM(Industry and Technology)
Director Marine and Land
Defence Systems

Department of External Affairs

Mr. Ted Gibson

DG Defence Programs and
Advance Technology Bureau

Supply and Services Canada

Mr. Harry Webster

DG Aerospace, Marine and
Electronics Systems

Finance

Mr. Michael Francino

DG Economic Development Branch

Atlantic Canada Opportunities Agency

Mr. Norm Moyer

Vice President Corporate
Strategy

- 3 -

SUMMARY RECORD OF DISCUSSION MEETING WITH
THYSSEN/BEAR HEAD INDUSTRIES OFFICIALS - 5 FEB 90

ITEM	SUBJECT	OPI
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I INTRODUCTION

1. The DM opened the meeting by welcoming the representatives from Thyssen and Bear Head Industries, as well as the officials from other government departments and agencies. He stated that the meeting was being held at the request of the Ministers of National Defence, Public Works, and the Atlantic Canada Opportunities Agency, as well as Mr. Hartt, Chief of Staff to the Prime Minister. He added that all these officials were aware of what he was about to say at the meeting and the position he would present on behalf of the Government of Canada.

II OPENING REMARKS

2. The DM stated that the government, and DND in particular, is sensitive to Thyssen's interest in coming to Canada. Thyssen's reputation is well known and the prospect of Thyssen opening a facility in Canada is enticing - but this facility cannot and will not be gained at any price. The DM added that he was aware that Thyssen has tried to obtain a prior commitment from the government regarding military purchases in order to build such a facility, but he offered the personal view that such a commitment was unlikely. Further, the DM emphasized that no commitment of any kind would be given at this meeting. Because of cuts in defence spending in Canada, as well as the West in general, DND must ensure that it gets the most for the limited defence dollars available. Accordingly, competitiveness must be maintained and encouraged in all purchasing policies.

3. The DM opined that there are a considerable number of sometimes conflicting rumours suggesting various forms of DND bias against the Thyssen proposal. He stressed that DND is interested in one thing alone - the best method of equipping the Canadian Forces. The DM acknowledged Thyssen's expertise in the production of armoured vehicles and tanks but underscored the fact that Canada has no plans now, or in the foreseeable future to purchase tanks. DND does have plans to purchase Light Armoured Vehicles (LAV), but these plans are well in

.../4

ITEM

SUBJECT

OPI

the future, and will depend on available funding. The DM added that the government had still to receive Thyssen's investment strategy and business plan. In this vein, the DM pointed out that it would be futile for Thyssen to anticipate unrealistic undertakings from any Canadian Government on issues such as export permits to Third World countries. Canada will not give investors a "carte blanche" on exports.

4. The DM remarked that the changing geo-political situation is having a marked impact on DND's planning and ability to obtain funding. As in all Allied countries, our defence industries are facing restructuring and an uncertain future. International competition, already intense, in the defence sales business is bound to further intensify. In spite of these uncertainties, DND is preparing a new planning framework spanning the next fifteen years. The DM stressed that these are plans, and plans only, and as such, no commitments could be made; particularly with regard to the outer ten years; that is, the period in which we hope to be able to launch a modest program of armoured vehicle acquisition.

III THYSSEN REMARKS

5. Mr. Schreiber thanked the DM for his candid remarks and readily agreed that a great deal of uncertainty exists in the geo-political situation. He reminded officials that it was Thyssen who was approached by the Canadian Ambassador with a request to investigate the possibility of investing in Canada. Thyssen already has plants in the U.S. and it would be quite easy for production to be expanded in these facilities. Notwithstanding, Thyssen sees opportunities in Canada and Mr. Schreiber encouraged officials to work together to see what could be done for Canada, especially the Maritimes. He emphasized that Thyssen does not have the feeling that it is dealing with opponents, and that Thyssen has never reacted to the type of rumours referred to earlier by the DM. He added that Thyssen has never asked for government grants and in fact has considerable capital funds available for investment in Canada but needs DND support to commit these funds. It does not make sense to establish a plant in Canada that will not provide equipment to Canadian customers.

.../5

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ITEM

SUBJECT

OPI

6. Mr. Schreiber stated that despite the changing geo-political situation, there will always be a need for basic armoured vehicles. He agreed that competition is necessary, but in Canada there is not another manufacturer that makes tracked vehicles similar to the Thyssen produced vehicles. Thus, it would be in Canada's interest to initiate production of a vehicle that could be used by other countries, especially those involved in peacekeeping missions. Mr. Schreiber noted that the U.S. had experienced problems with the LAV during operations in Panama. (NOTE: There does not appear to be any substance to this claim; indications from the U.S. Department of Defence are that the GM vehicles met all expectations). Mr. Schreiber added that the issue of export permits had merely been brought up as a point of clarification during initial discussions when the Canadian government was hesitant to commit to any firm orders. Subsequently, this question was taken out of context and was blown out of proportion.

7. Mr. Schreiber concluded by emphasizing that a commitment to an order that would permit production of vehicles for at least one year would be sufficient as this would allow Thyssen the time necessary to configure the plant for diversification into other product lines. In this way Canada would get the best equipment for its soldiers as well as a production facility for the Maritimes. A competitive price would also be ensured because Thyssen's books are open to audit by government officials.

IV DND REMARKS

8. The Deputy Chief of the Defence Staff introduced the Chief Operational Planning and Force Development who provided a short briefing on operational requirements in general. His briefing is attached to these minutes. The CLDO then provided a briefing on specific army requirements in which he emphasized that while some equipment requirements are foreseen in the medium and long term, none are planned within the next few years. A copy of his briefing is attached to these minutes.

(Not included)
54.

.../6

ITEM	SUBJECT	OPI
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9. The ADM (Materiel) then described the government procurement activities and emphasized that DND was bound by these policies as well as the established DND acquisition process. He added that in all procurement endeavours, competition is paramount. The rules to ensure competition are complex and apply to all government departments. A copy of the ADM (Materiel)'s briefing is attached to these minutes. (NIT 10111 1 2

V ISTC REMARKS

10. The ISTC representative, Mr. Mackay, stated that his department has been in discussions with Thyssen for five years. He indicated that the main objective of ISTC was to work with Thyssen to try to find a business opportunity that maximizes the probability of success for Canadian industry. He emphasized that this industrial expansion must be done within the procurement policy framework. In addition, he noted that there is some urgency to a decision on this proposal as the applicable tax credits have a statutory limitation of 1992. As this time approaches, it is difficult for an investor to make appropriate business plans.

VI ACOA REMARKS

11. The ACOA representative, Mr. Moyer, agreed that the Thyssen proposal was enticing in that it provided an opportunity for the development of Cape Breton; few other proposals have the same potential benefits. He was also encouraged by Thyssen and Bear Head's Industries intention to expand into other product lines besides military vehicles. He stressed that while competition must be maintained in the procurement process, due attention must also be paid to the government's commitment, as enunciated in the Speech from the Throne, to foster regional development. He added that ACOA is prepared to assist in preparing and/or reviewing the proposal, and can be especially helpful once and if a decision is made to go ahead.

VII DEA REMARKS

12. The DEA representative, Mr. Gibson, acknowledged that the German government has been

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ITEM

SUBJECT

OPI

very supportive of Thyssen. However, because of the cutbacks in government spending, the DEA has made no commitments to Thyssen in any previous meetings. He also agreed with the DM concerning exports, that Canada is not prepared to give a "blank cheque" to investors but rather that each request is judged on a case by case basis.

VIII GENERAL DISCUSSION

13. Mr. Schreiber stated that he agreed with all that had been said; competition in the procurement process is normal procedure. He reiterated his desire for all officials to work together toward a common goal so that all concerned would be satisfied with the results. He indicated that Thyssen has \$60-100 million to spend on a facility but must have some basis upon which to make an investment. The DM replied that as budgets decrease, spending will be put under increased scrutiny. He opined that specifically designed Canadian vehicles may be cost prohibitive. As well, the number of vehicles Canada would be interested in acquiring would be comparatively small. Mr. Schreiber stated that once Canadian requirements were known, it is possible that a suitable vehicle may be available on the market, or alternatively, Thyssen is ready to investigate the design of a competitively priced Canadian vehicle. Mr. Massman added that vehicles are produced for the German military in the same numbers that Canada would require. Thyssen's cost effective production methods allow them to produce vehicles in relatively small numbers. In addition, Mr. Massman assured the DM that Thyssen could produce a vehicle for Canada at a competitive price.

14. LGen (Ret'd) Vance opined that the major problem seemed to be one of timing. He asked when the requirement for vehicles would be more specifically defined. The Chief of the Defence Staff replied that a great deal would depend on the forthcoming budget, but that even after the budget announcement there would be a need for further Force Development analysis. LGen (Ret'd) Vance pointed out that it is difficult for Thyssen to proceed without knowing the number of vehicles required or the timing of the requirement.

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ITEM

SUBJECT

OPI

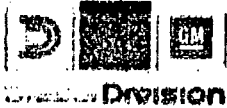
The DM stressed that at the present time no firm commitments can be made. Commitments cannot be made within the next few years; commitments after that will depend on the level of DND's budget. The Chief of the Defence Staff emphasized that DND cannot give Thyssen the type of guarantees it needs to build a plant; the competitive process demands that other manufacturers be brought in to the procurement process. Mr. Schreiber cautioned that Thyssen could not keep the proposal active for two or three years awaiting a Canadian decision. He assured officials that this was not intended as a threat, but he wished to indicate that he is under increasing pressure to invest in the U.S. The DM stated that he appreciated Mr. Schreiber's position but could give him no encouragement at this time. The DM acknowledged the Deputy Chief of the Defence Staff's comment that the requirements for the Multi-Role Combat Vehicle are still being defined and it is unlikely that the definition of these requirements will proceed much beyond the initial stage within the next few years. |||

XI CONCLUDING REMARKS

15. The DM concluded by thanking the Thyssen representatives for the opportunity to meet with them. Once again, he emphasized that no commitments could be made at this time. He apologized for the fact that he, the Chief of the Defence Staff, and the Vice Chief of the Defence Staff had to leave the meeting, however he felt that the proposed briefing by Thyssen on their capabilities would be beneficial to those remaining.

M.W. Drapeau

M.W. Drapeau
Col
D NDHQ Sec
992-6333



3

PA on

THYSEN HENSEL
BEAR HEAD INDUSTRIES
FILE
General Motors of Canada Limited

32460-100-009.

FAX MESSAGE FROM GENERAL MOTORS, DIESEL DIVISION, OTTAWA
1510-55 Metcalfe Street, Ottawa, Ontario K1P 6L5

DATE: 5 JAN 90

TIME: 0945 HRS.

Total number of pages transmitted 3 (including cover sheet)

Please deliver the following pages to:

TED CHAPMAN MILLAN
LEON HYTTEN RALCO PMO

MESSAGE:

FOR INFO.

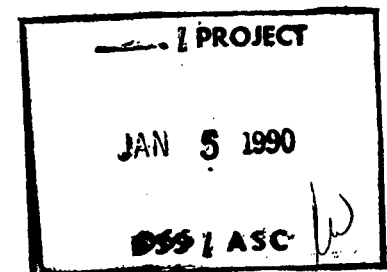
FROM: BILL PETTIPAI

If you do not receive all of the pages, please call
(613)235-1385.

GMDD FAX: (613)236-3372
General Motors Diesel Division

Phone: (613)235-1385
FAX: (613)236-3372

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WO BIGRAS
PIS PA as indicated.
PM MILLAN
15 JAN 90



001096

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Inside The Army
December 18, 1989

Copy to [unclear]
LEB
C. Luck
S. Myers
J. Law
[unclear]

EASING OF EAST/WEST TENSIONS, BUDGET CUTS MAY LEAVE MARK ON NBC VEHICLE PLAN

The lessening tensions between the Superpowers and the recent move by Army officials to cut back the procurement numbers in the \$500-million Nuclear Biological Chemical (NBC) Reconnaissance Vehicle competition has launched widespread speculation that the Army may be reconsidering its support for the program. The Army cut the total buy from 289 vehicles to 208, a cut of almost 10%, as part of last minute guidance on the eve of the best and final offer (BAFO) portion of the competition, which is expected to be conducted over the next three weeks.

Positive { The cut has triggered speculation by program observers that the Army may be reconsidering its plan to buy 48 NBC vehicles quickly to meet what has been advertised as an "urgent" requirement by U.S. commanders in Europe. They assert that this "urgent" requirement -- to give U.S. forces the capability to operate in the event of NBC attack by the Soviets -- may have been overcome by the recent dramatic relaxation of tensions between the Western and the Soviet Union. The elimination of the urgent buy requirement could allow the Army time to redirect the program towards the longer term requirements for NBC vehicles, these sources say.

The Army is already focused on the need to develop an NBC vehicle in the long term, sources say. They note that the current Army acquisition plan envisions a quick product improvement phase after the urgent buy of 48 vehicles in order to develop a vehicle that better meets long-term Army NBC vehicle goals. These goals include higher speed data links, improved communications, optical sensors and meteorological devices, among other systems, according to sources. After the improved version is developed, the Army plans to procure 210 vehicles, a number cut from original plans of 231, and then to retrofit the original 48 to the product improved version. Said one source: "The Army is jumping through a lot of hoops to get a capability on the battlefield quickly. If the urgency is not needed, the program might be restructured to save some money."

Positive { Another reason to restructure the program, sources say, is growing Army interest in a wheeled armored vehicle. The NBC vehicle will be the first wheeled armor vehicle in the Army inventory. Sources say that when the acquisition plan was first drawn up in 1988, the Army envisioned the NBC vehicle as its only wheeled vehicle. Now, the Army is considering Marine versions of a wheeled air defense gun and of an 105mm assault gun for its light forces, as well as the possibility of an armored High Mobility Multipurpose Wheeled Vehicle. Thus, the Army may want to broaden the NBC procurement to make it the fundamental step for an Army wheeled armored vehicle family, one supporter of the program suggested.

Program proponents are very worried that an Army restructuring will doom the effort because of rising pressures on the Army budget. Currently, there is approximately \$10-million in FY-89 R&D funding for the program already earmarked, plus an additional \$30-million in FY-90 that is not earmarked; \$26-million in FY-90 procurement funding and \$36-million in FY-91 money. In the case of a program restructuring, any or all of this money might be diverted to other higher priority Army programs. One source asserted that proponents of the Heavy Forces Modernization (HFM) program "are very hungry for money" in FY-91 and are already eyeing NBC vehicle money. The \$10-million in R&D funds in FY-89 and \$26-million in procurement funds in FY-90 are particularly vulnerable, since this money only stays allocated to the program until October 1990, according to sources.

The NBC vehicle competition has been hotly contested by two teams -- General Dynamics/Thyssen Henschel versus TRW/GM Canada. The procurement has been controversial on a number of accounts, including a flap in the FY-89 congressional authorization about an Army decision to award the NBC contract to Thyssen Henschel without a competition. The current competition is a result of the congressional direction in the program. The West German government lobbied strongly on behalf of Thyssen

Positive { Henschel in Spring 1988, according to sources, and received a commitment from then-Army Undersecretary James Ambrose that the Army would buy the GD-Thyssen vehicle. But sources speculate that the West German interest in the program may have diminished if not disappeared given the dramatic lessening of tensions between the Superpowers.

*Majority of comments
favorable to GM/TRW
[unclear]*

001097

Record number 12
CBO Issue: 1/2/1990
KEYWORD: DIESEL ENGINE

Doc 1/2/90

A -- SURVEY FOR DEVELOPMENT OF ARMORED Linda Layton, 313 574-8578. Market Survey for Armored Gun System (AGS). The AGS will support three light contingency forces mission by providing necessary mobile, rapid fire, kinetic energy and chemical energy capability against the full range of targets likely to be encountered. Requirements for the vehicle are: A. Wheeled or tracked, B. 15-20 Tons (US), reducable to 17.5 Tons (US), C. Mobility characteristics similar to the Bradley Fighting Vehicle, D. Armor protection for the crew and ammunition, E. (DIESEL ENGINE), F. Integrated laser range finder, G. Primary sight must incorporate flir channel, H. Transportability - Air - C130, Roll on/Roll off, Low velocity Air Drop. Point of contact: TACOM, ATTN: AMSTA-138A, Linda Layton, 313 574-8578, Warren, MI 48397-5000. All responsible sources may submit an offer which will be consider. (341)

US Army Tank Automotive Command, Dir of P and P (AMSTA-IPDD), Warren, MI 48397-5000

PA → 2442-1-12

89 1620

CONFIDENTIAL

AIDE-MÉMOIRE

FOR THE MINISTER

PMO	-
pm	SECTION
JUL 21 1989	
P.A. TO FILE NO:	2442-1-12
	OR 32460-100-1200
DISCARD	<input type="checkbox"/>

SUBJECT: Thyssen/Bear Head Industries (BHI) Letter of 19 Jul 89.

PROPOSAL

1. The subject "proposal" is: to provide over 200 tracked vehicles produced in Canada at a cost of approximately \$250 million Cdn. The letter is general in nature and does not represent an offer for acceptance or negotiation.

ISSUES

2. General

- The information on Thyssen/BHI provided in a 12 Jun 89 aide-mémoire still pertains. For example, procuring from Thyssen/BHI would not contribute to maintaining the defence industrial base and would result in vehicles lacking any commonality with in-service vehicles.
- With regard to the latest "proposal", the following additional points pertain.

3. Operational Requirement

- The company speaks in terms of providing a tracked vehicle but provides no supporting technical information on it.
- The company recommends that its vehicles replace DND's M113s overseas and thus permit the release of in-service vehicles for the Reserve training role.
- However, such an approach would be inconsistent with current policy of maintaining the status quo in Europe.

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CONFIDENTIAL

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4. Cost

- BHI states that the cost for "over 200 vehicles" would be "approximately \$250 million Cdn".
- The company does not indicate whether this amount includes inflation and logistics support elements such as spares, training and publications.
- Nevertheless, the amount confirms DND's previous assessment that procurement from Thyssen/BHI would involve a substantial premium.

5. Other

- The company lacks an approved business plan and is therefore not in a position yet to receive any federal assistance for set-up.

CONCLUSION

6. Thyssen/BHI's 19 Jul 89 letter does not present any information to warrant changing the proposed procurement strategy for the Militia Light Armoured Vehicle Project in the Memorandum to Cabinet, which other concerned departments still support.

CONFIDENTIAL

**Pages 1101 to / à 1104
are withheld pursuant to section
sont retenues en vertu de l'article**

20(1)

**of the Access to Information Act
de la Loi sur l'accès à l'information**

2.
COMPARISON OF THYSSEN, FMC
AND GENERAL MOTORS PROCUREMENT
OPTIONS

THYSSEN/BEAR HEAD

FMC

GENERAL MOTORS

1. Background

- Interest since mid-85 in creating a manufacturing plan in Cape Breton (initially to produce armoured vehicles for export but scope expanded to heavy industry equipment generally).
- On 27 Sep 88, the Crown signed an Understanding in Principle with Bear Head Industries Ltd (BHI), a wholly-owned subsidiary of Thyssen, whereby the Crown would consider assistance in establishing a Cape Breton facility. MND will "consider the participation of the company in the Light Armoured Vehicle Procurement Program envisaged to occur in the early-to-mid 1990's provided the Company" meets certain obligations. Note: MILLAV is not part of that program.
- In Feb 89, a COA directed BHI to produce an acceptable long term business plan, which has not been submitted yet.

- FMC submitted Formal price and availability in Jul 88.
- Since learning that DND will propose acquisition primarily of GM wheeled vehicles, FMC proposed in Jan 89 a teaming arrangement with GM for production of tracked vehicles.
- As GM showed no interest, FMC will probably now propose an assembly arrangement with a Western Canadian company.

- In Aug 88, GM submitted an unsolicited proposal to MND indicating: lack of orders for 1989 & 1990 and likely plant closure.
- In Oct 88, MND indicated by letter to GM he would seek approval of his colleagues for procurement of GM vehicles.

Operational
Considerations

- Suitability. It is not known whether Thyssen has a vehicle suitable for the requirement. Certainly, the Fox (a nuclear, chemical reconnaissance vehicle displayed at ARMX) is not suitable as an infantry section corner.
- Commonality. Procuring any of Thyssen's armoured vehicles would result in an orphan fleet.

- Suitability. Wide tracked vehicles are the primary vehicle in CFE and Canada at the present time, the primary thrust of Militia training will be territorial defence, for which wheeled vehicles are better suited.
- Commonality. Procuring M113s would result in commonality with our existing fleet.

- Suitability. Wheeled vehicles are ideal for territorial defence as they can be deployed quickly over long distances by road.
- Commonality. Procuring GM vehicles would result in commonality with our existing wheeled armoured vehicle fleet.

3. Industrial Base

- Manufacture by BHI could well result in GM closure.
- FMC manufacture at a plant other than GM's could well result in closure of the latter.
- Procurement from GM would mean continued operation of its armoured vehicle plant over the next two years until sound prospects for export sales result in production.
- Without export order, it is doubtful whether a BHI plant would survive based on DND's business.
- GM has rejected manufacture of M113s as impractical.
- After MILLAV, there is the distinct possibility of no further significant armoured vehicle orders.
- It is doubtful whether a plant other than GM's would survive based on DND's business. After MILLAV, there is the distinct possibility of no further significant armoured vehicle orders.

4. Industrial & Regional Benefits

- Relatively small quantity would probably mean Canadian content significantly less than 50%.
- FMC has never specified a realistic set of specific industrial & regional benefits.
- GM is committed to:
 - 60% Canadian content
 - 40% foreign content entirely offset by indirect benefits
 - placing direct & indirect benefits amounting to 15% of total contract value in Atlantic Canada and 15% in Western Canada
 - 1,400 person-years of direct employment over 3 years.

5. Price
- To date, neither Thyssen nor BHI have provided any cost data.
 - For a relatively small order the premium for any Canadian production would likely be very high, since BHI has no existing facility.
6. Schedule
- BHI draft business plan indicated production could not commence until 1992, which is questionable as facility construction has not begun.
7. Follow-On Buys
- Significant future acquisitions of light armoured vehicles over the next 15 years are problematic in view of budgetary constraint. However, subject to Cabinet consideration, procurement strategy would be competitive.
- i.e. Procurement of vehicles from GM is not anticipated to impact selection for future acquisitions.
- Capital Cost
- U.S. production would be about \$40M (\$ 89/90) cheaper than GM option.
 - Canadian production would involve at least a \$30M premium over U.S. production.
 - Life Cycle Costs (Capital costs plus operating & maintenance costs). Based on a minimum 20-year life, 221 M113s would be at least \$10M more expensive than the proposed 199 wheeled + 22 tracked vehicles.
- N.B. Operating & Maintenance costs based on actual DND data on wheeled and tracked vehicles.
- If FMC manufactured at a facility other than GM's, the schedule impact is not known.
 - As per column 1.
- Capital Cost. GM has quoted a firm fixed price valid to 31 Jul 89.
- Life Cycle Costs. Based on a minimum 20-year life, 199 wheeled + 22 tracked vehicles would be at least \$10M cheaper than 221 M113s.
- GM could begin production commencing shortly after contract award with deliveries commencing in FY 90/91 and extending to 92/93.
- As per column 1.

SECRET

32460-100-009

MEMORANDUM

3136-5-2460 (DPSL)

12 Jun 89

Distribution List

INFORMATION PACKAGE FOR
THE MINISTERS ON THE
MILITIA LIGHT ARMoured
VEHICLE PROJECT

1. Enclosed is the subject package that you requested. It has been prepared in conjunction with the PM and PD.
2. I would like you to note that negotiations have now been successfully completed with General Motors. DSS will be contacting you, CEM or ADM (Mat) on this fact. Also, officials have prepared the contract submission.
3. The contract will be for \$90 million plus \$2.5 million for U.S. non-recurring cost recovery charges. It includes an initial logistics support package as well as vehicles.
4. The contract amount is about half the \$175M (\$BY) budgeted for the GM portion of the project. The remainder of the GM budget for ILS elements will be contracted during the next year.
5. With regard to U.S. non-recurring cost recovery charges, the company has agreed, in writing to absorb anything over \$2.5 million. In the meantime, DSS will pursue a full waiver and the company a reduction of the amount.
6. I recommend we now seek all the necessary approvals as soon as the opportunity presents itself. This is important in view of:
 - a. the offer being only valid to 31 Jul 89; and
 - b. General Motors still indicates closure without an early contract award.

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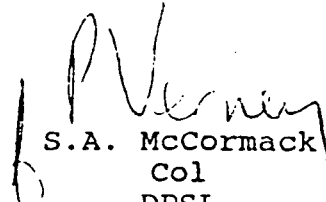
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- 2 -

7. Also, for the tracked vehicle portion of the project, the opportunity to take advantage of Invar's existing production line for installing TOW Under Armour Turrets expires 20 Sep 89. The eight vehicles would be provided from existing stocks and replaced when the MILLAV project obtains tracked vehicles from FMC Corporation.


S.A. McCormack
Col
DPSL
994-9416

Enclosure: (1)

DISTRIBUTION LIST

<u>Action</u>	<u>Information</u>
CS	CEM CLDO DG Proc S PD ASI PM MILLAV PD LRMP D Cabinet Ln

SECRET

001109

SECRET
(Unclassified w/o Enclosures)

MEMORANDUM

3136-5-2460 (PM MILLAV)

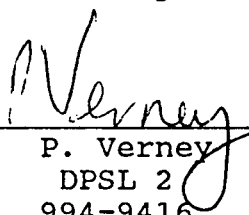
12 Jun 89

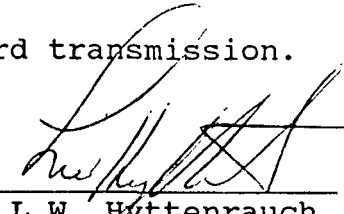
CS (thru CEM) 12/6

INFORMATION PACKAGE FOR
THE MINISTERS ON MILLAV PROJECT

Ref: Telecon CS/CEM, 12 Jun 89

1. As per Ref, enclosed is the subject information package that has been reviewed.
2. For your consideration and onward transmission.


P. Verney
DPSL 2
994-9416


L.W. Hyttenrauch
LCol
PM MILLAV
995-2194

SECRET
(Unclassified w/o Enclosures)

SECRET
(Unclassified w/o Enclosure)

MEMORANDUM

3136-5-2460 (CS)

12 Jun 89

MSO

INFORMATION PACKAGE
FOR THE MINISTERS ON
THE MILITIA LIGHT
ARMOURED VEHICLE PROJECT

1. As requested by the Minister's Executive Assistant, Mr. Moorcroft, enclosed is an information package on the Militia Light Armoured Vehicle Project dealing with:
 - a. background on the various interested companies in the project; and
 - b. information on ministerial and departmental positions according to their respective Project Office contacts.
2. The information should be placed with MND by this evening so that he can review it at his earliest opportunity.


E.J. Healey
ADM (Mat)
992-6622

Enclosure: 1

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AIDE-MÉMOIRE FOR
THE MINISTERS

SUBJECT: Militia Light Armoured Vehicle (MILLAV) Project

BACKGROUND:

1. This aide-mémoire and attached information has been prepared at the request of your Executive Assistant, Mr. Moorcroft, to provide background on the various interested parties in the MILLAV Project and information on ministerial and departmental positions.
2. The project involves the acquisition of 221 light armoured vehicles for Militia training.
3. The procurement strategy agreed to by the Interdepartmental Senior Review Board calls for acquiring:
 - a. 199 wheeled vehicles from Diesel Division of General Motors, London, Ontario; and
 - b. 22 tracked vehicles from FMC Corporation of California, whose vehicles are better suited for the field engineering and anti-armour training roles.
4. The procurement strategy is based on consideration of all relevant factors including: operational requirement, maintaining the defence industrial base, industrial and regional benefits, and life cycle costs.
5. Probably as a result of the budget announcement and the fact that there will be no further buys of light armoured vehicles for at least five years, Thyssen Industries AG of West Germany and its wholly owned subsidiary Bear Head Industries Ltd (BHI) appear to be expressing strong, renewed interest in the MILLAV Project.
6. Annex A provides a synopsis on the situation with regard to General Motors, FMC Corporation and Thyssen.

POSITIONS OF MINISTERS AND OTHER
GOVERNMENT DEPARTMENTS

7. The table below summarizes the positions of Ministers and their departments according to their respective Project Office contacts.

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	<u>Ministerial</u>	<u>Departmental</u>
ISTC	Supportive	Supportive
External Affairs	Apparently has reservations but details are unknown.	Supportive
ACOA	With no future buys of light armoured vehicles for at least five years, the Minister could have reservations about Thyssen/Bear Head not having the opportunity to participate in this project.	Supportive. Note that ACOA agreed to remove reference to Thyssen/Bear Head and future light armoured vehicle acquisitions because there will be no such acquisitions for at least five years.
WDO	Could support any attempt by FMC Corp. to put assembly in Western Canada if tracked vehicles were procured for the whole requirement.	Supportive
Supply and Services	May question why DND proposes to purchase primarily wheeled rather than tracked vehicles.	Supportive
Finance	Reservations about: - advisability of announcing another major procurement soon after the budget, - adequate basis for the project in view of the fact that the Defence Review process is not complete.	As per Ministerial concerns.

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Possible support in view of the fact that procurement from Thyssen/Bear Head (rather than GM) would be more expensive because of potentially significant Government investment for

facilitization (50 to 85% of the cost) and foregone revenue (in tax credits). By the terms of the Understanding in Principle with Bear Head, the Government has agreed to consider such assistance.

8. The support of Ministers and their departments is based on:

- a. recognition of the operational requirement;
- b. the proposed acquisition of 199 vehicles from GM would mean continued operation of the company's London, Ontario, armoured vehicle facility until production resumes for export sales in 1991; and
- c. major industrial and regional benefits associated with this purchase from GM (details in Annex A) and future export sales.

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SUMMARY COMPARISON OF
GENERAL MOTORS, FMC AND THYSSEN

Comfort Level
Rating System

- 1 = Low
2 = Medium
3 = High

	<u>General Motors</u> (ISRB agreed strategy)	<u>FMC</u>	<u>Thyssen/Bear Head</u>
1 Operational Consideration			
- Suitability	3	2	1
- Commonality	3	3	1
2 Industrial Base	3	1(See Note 1)	1(See Note 2)
3 Industrial & Regional Benefits	3	1(See Note 3)	1(See Note 4)
4 Price			
- Capital Cost	2(See Note 5)	3	1(See Note 6)
- Life Cycle Cost	3	2	1(See Note 6)
5 Schedule	3	2	1
6 Overall	20	14	7

- Notes: 1. Low rating based on the fact that: assembly by FMC's Canadian partner (as yet undesignated) could well result in closure of GM's plant, FMC has not indicated any prospects for participation of a Canadian partner in export sales, and DND business alone is insufficient to sustain a partner.
2. Low rating based on the fact that: manufacture by Thyssen/BHI could well result in closure of GM's plant, BHI has indicated no prospects for export sales, and DND business alone is insufficient to sustain BHI.
3. Low rating based on FMC's indication that Canadian participation would be for assembly only.
4. Low rating based on Canadian content for a small order would probably be less than 40% and involve assembly only.
5. Although capital costs for GM vehicles are higher than for FMC vehicles, the in-service costs more than compensate, hence, lower life cycle cost.
6. Thyssen/BHI have not been requested to submit price information, but the set-up costs would be very high, thus driving up capital and life cycle costs.

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ANNEX A
TO AIDE-MÉMOIRE
FOR THE MINISTERS

COMPARISON OF GENERAL MOTORS, FMC
AND THYSSEN

GENERAL MOTORS

FMC

THYSSEN

1. Background

- | | | |
|--|--|---|
| <ul style="list-style-type: none">- In Aug 88, GM submitted an unsolicited proposal to MND indicating: lack of orders for 1989 & 1990 and likely plant closure.
- In Oct 88, MND indicated by letter to GM he would seek approval of his colleagues for procurement of GM vehicles. | <ul style="list-style-type: none">- FMC submitted price and availability in Jul 88.
- Since learning that DND will propose acquisition primarily of GM wheeled vehicles, FMC proposed in Jan 89 a teaming arrangement with GM for production of tracked vehicles.
- Teaming arrangement with GM did not materialize, | <ul style="list-style-type: none">- Interest since mid-85 in creating a manufacturing plant in Cape Breton (Phase I to produce armoured vehicles for export, Phase II to expand in to commercial equipment).
- On 27 Sep 88, the Crown signed an Understanding in Principle with Bear Head Industries Ltd (BHI), a wholly-owned subsidiary of Thyssen, where by the Crown would consider assistance in establishing a Cape Breton facility. MND to "consider the participation of the company in the Light Armoured Vehicle Procurement Program envisaged to occur in the early-to-mid 1990's provided the Company" meets certain obligations. Note: MILLAV <u>not</u> part of that program. |
|--|--|---|

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ANNEX A
TO AIDE-MÉMOIRE
FOR THE MINISTERS

and FMC may now propose an assembly arrangement with a Western Canadian company

- In Feb 89, ACOA directed BHI to produce an acceptable long term business plan, which has not been submitted yet

2. Operational Considerations

- Suitability. The purpose of the project is to provide the Militia with vehicles for training in territorial defence, peacekeeping, and NATO readiness. The vehicles themselves may also be used for territorial defence and aid to the civil power, roles for which wheeled vehicles are better suited.

- Suitability. As per column 1.

- Suitability. Discussions at ARMX indicate that Thyssen does not currently have an infantry section carrier that would meet DND's requirements. Certainly, the Fox (a nuclear, chemical reconnaissance vehicle displayed at ARMX) is not suitable as a section carrier.

- Commonality. Procuring GM vehicles would result in commonality with the Militia's existing wheeled armoured vehicle fleet.

- Commonality. Procuring M113s would result in commonality with DND's existing fleet of tracked vehicles used by the Regular Force.

- Commonality. Procuring any of Thyssen's armoured vehicles would result in an orphan fleet with respect to operations, training and support.

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ANNEX A
TO AIDE-MÉMOIRE.
FOR THE MINISTERS

3. Industrial Base

- Procurement from GM would mean continued operation of its armoured vehicle plant over the next two years until sound prospects for export sales result in production.
- FMC manufacture at a plant other than GM's could well result in closure of the latter.
- Manufacture by BHI could well result in GM closure.
- The Crown has already invested \$34.5M in establishing GM facility.
- GM has studied and rejected manufacture of M113s as impractical.
- Without export orders, a BHI plant would probably not survive based on DND's business alone.
- A plant other than GM's would probably not survive based on DND's business alone.

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ANNEX A
TO AIDE-MÉMOIRE
FOR THE MINISTERS

4. Industrial &
Regional Benefits

- GM is committed to:
 - 60% Canadian content
 - 40% foreign content entirely offset by indirect benefits
 - placing direct & indirect benefits amounting to 15% of total contract value in Atlantic Canada and 15% in Western Canada
 - 1,400 person-years of direct employment over 3 years
 - No contract would result in laying off 350 people.
- FMC has never specified a set of industrial & regional benefits.
- Relatively small quantity would probably result in Canadian content of less than 40% (principally assembly).

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ANNEX A
TO AIDE-MÉMOIRE
FOR THE MINISTERS

5. Price

Life Cycle Costs

- Based on actual DND data for wheeled and tracked vehicles, the former are considerably cheaper to operate and maintain. Therefore, their life cycle costs are lower.
- Capital Cost. GM has quoted a firm fixed price valid to 31 Jul 89.

Life Cycle Costs

- As per column 1.

Capital Cost

- U.S. production would be about \$40M (\$ 89/90) less than GM option.
- Canadian production would involve at least a \$30M premium.

6. Schedule

GM deliveries would commence in FY 90/91 and extend to 92/93.

- If FMC produced at a Canadian plant, there would probably be no delivery until 1991 because of facilitization time.

- No cost data submitted or requested. (It was not required for support of the approved procurement strategy.)
- For a relatively small order the premium for any Canadian production would likely be very high, since BHI has no existing facility.
- By the terms of the Understanding in Principle with BHI, the Government has agreed to consider significant financial assistance. Impact on this project could mean covering 50 to 85% of facilities and machinery plus tax credits.
- BHI draft business plan indicated production would commence 1992, which is questionable as facility construction has not begun.

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ANNEX A
TO AIDE-MÉMOIRE
FOR THE MINISTERS

7. Follow-On Buys

- Significant future acquisitions of light armoured vehicles over the next 15 years are problematic in view of budgetary constraint. However, subject to Cabinet consideration, procurement strategy for any future acquisition would be competitive. i.e. The proposed procurement of vehicles from GM is not anticipated to impact selection for future acquisitions.

- As per column 1.

- As per column 1.

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BEAR HEAD INDUSTRIES LTD.

THYSSEN INDUSTRIE AG

- THYSSEN INDUSTRIE AG IS A WHOLLY-OWNED SUBSIDIARY OF THYSSEN AG
- THYSSEN INDUSTRIE AG HOLDINGS IN NORTH AMERICA

CANADA

BUDD CANADA INC.
GREENING DONALD CO. LTD.
THYSSEN CANADA LTD.
NORTHERN ELEVATORS
THYSSEN MARATHON CANADA LTD.
BEAR HEAD INDUSTRIES LTD.
(WHOLLY-OWNED SUBSIDIARY OF
THYSSEN INDUSTRIE AG)

KITCHENER, ONT.
HAMILTON, ONT.
REXDALE, ONT.
SCARBOROUGH, ONT.
MISSISSAUGA, ONT.
OTTAWA, ONT.

EMPLOYS

1750
448
24
200
42
4

6026 ALFORD
FORMERLY WITH GCI
MAJ (RET.) TIM REID
2 FULL TIME
OTHERS PART TIME

U.S.

THE BUDD COMPANY
THYSSEN SPECIALTY STEEL
HUELLER HILLE CORPORATION

TROY, MI
NEW YORK, NY
TROY, MI

11353 - MANF.
156 - SALES
173 - SALES

- MID 1985, MINISTER STEVENS DRIE COMMENCES DISCUSSIONS WITH THYSSEN ON BEAR HEAD PROPOSAL
- OTTAWA REPS AND RESPONSIBLE FOR PAPERWORK IS GCI OTTAWA
- INITIAL PROPOSAL WAS TO MANUFACTURE ARMoured VEHICLES FOR EXPORT TO MIDDLE EAST AND ETC COUNTRIES
- INITIAL PROPOSAL SCUTTLED AFTER EXPOSURE TO MEDIA
- CURRENT STATUS - FEBRUARY 89 COMPANY INFORMED TO PRODUCE LONG TERM BUSINESS PLAN (MARKET PROJECTIONS)

BUSINESS PROJECTIONS, CAPITAL COSTS)

- NO SUCH LONG TERM BUSINESS PLAN HAS BEEN SUBMITTED TO DATE.

- GERMAN COMPANY OFFICIALS OF THE OPINION PROJECT IS
KEPUTT.

32460-150-009

BEAR HEAD INDUSTRIES LTD.

- PROPOSED SITE - THE BEAR HEAD, STRAIGHT OF CANSO, CAPE BRETON, N.S.
- UNDERSTANDING IN PRINCIPLE *(SIGNED BY UND, DRIE & ALOA)*
 - 2 PHASE APPROACH
 - PHASE 1, 250 LAV'S TO COMMENCE PROJECT
 - PHASE 2, COMMERCIAL ACTIVITIES
 - PHASE 1, COMPANY AGREES TO
 - PROCEED WITH CONSTRUCTION OF FACILITY
 - SUBMIT APPLICATION(S) TO ENTERPRISE CAPE BRETON
 - SUBMIT BUSINESS PLAN & DIPP APPLICATION(S)
 - PHASE 1, GOVERNMENT OF CANADA AGREES TO
 - CONSIDER UP TO 50%*OF PROJECT COSTS (CBE) **MINIMUM*
 - CONSIDER DEVELOP, DESIGN & MANUFACTURE LAV'S AT THE BEAR HEAD (DND) — *TO DND REQUIREMENTS*
 - CONSIDER DIPP, CA ELEMENT (IS&T)
- INITIAL COSTS TOTAL

- SITE PREPARATION & INFRASTRUCTURE	\$122.2
- FACILITIES & MACHINERY	\$ 27.2
	\$ 95.0
- COMPANY CONTRIBUTION MAXIMUM *CBE*

	\$ 47.5
--	---------
- WITH ¹ TOPPING UP PROVISIONS, COMPANY CONTRIBUTION MINIMUM

	\$ 9.5
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- 7 -

BEAR HEAD INDUSTRIES LTD.

° MARKETS

- INITIAL ORDER FOR 250 LAV'S TO COMMENCE PROJECT
- CANADA'S TANK & LAV 95 PROJECTS
- CANADA'S VEHICLE R&D PROJECTS
- PRODUCTION SHARING AGREEMENT WITH LAVALIN AND KRAUSS MAFEI (TANKS & LAVS)

° CANADIAN CONTENT

- COMPANY PROPOSES UP TO 50 PERCENT IN-VEHICLE CANADIAN CONTENT (FOR MILLARV CONSIDERABLY LESS, NO ECONOMIES OF SCALE)
- FOREIGN CONTENT COMPRISES
 - ARMAMENTS
 - POWER PACK (ENGINES AND TRANSMISSIONS)
 - STEERING COMPONENTS
 - SUSPENSION COMPONENTS (INCLUDING TRACK)
 - ELECTRONIC GEAR
 - ELECTRICAL HARNESSSES
 - BATTERIES, AUXILIARY GENERATORS, ETC.
 - ARMoured STEEL, ARMoured STEEL CASTINGS, ETC.



THYSSEN HENSCHEL

HENSCHEL DEFENSE TECHNOLOGY

TPz1 FOX ARMORED VEHICLE NBC



TPz FOX Armored System

The FOX meets battlefield demand for a high-performance armored wheeled command vehicle and is equally suitable for use as a personnel carrier, as an armored equipment carrier and as an NBC-reconnaissance vehicle.

Its key features are:

- High mobility and maneuverability both on land and in water,
- Maximum road speed of 105 km per hour,
- Excellent amphibious safety with a speed of up to 10 km per hour,
- Large operating range,
- Low out-put,
- Crew protection up to 7.62 cal. small arms level,
- NBC-protected interior,
- Equipped with an emergency tire repair system.

The FOX is based on a current and next generation NATO standard range of medium-class wheeled vehicles. As such, an advantage of common maintenance and repair parts for the European theater can be realized.

The FOX is available in four different versions:

Basic vehicle
Command & Control System
Electronic warfare System
Nuclear Biological Chemical-Reconnaissance System

Its NBC-protected compartment, and its high payload accommodate a total of

12 Conversion or Installation Kits

enabling it to perform a wide range of military tasks, as well as movement of troops, supplies and equipment.



TPZ 1 FOX as nuclear biological chemical reconnaissance vehicle.



NBC Reconnaissance units must conduct activity over a wide area in order to provide requisite warnings for defense and to identify „safe areas” for the conduct of operations. This task requires:

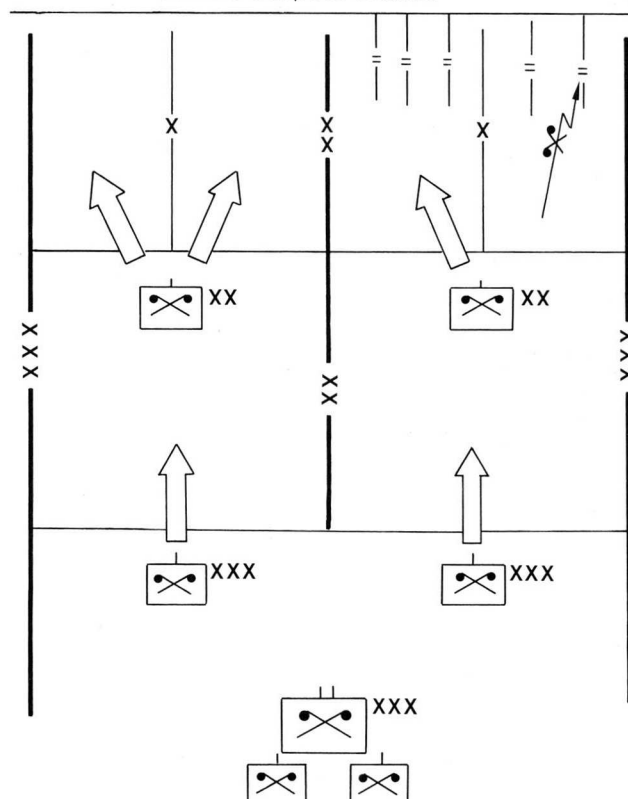
- Rapid deployment of NBC reconnaissance forces and,
- Special equipment for accurate measurement of battlefield contamination of air, land, and water.

To do this, NBC defense companies, organic to divisions, and NBC defense battalions, organic to corps, must be equipped with sufficient NBC-R vehicles to „blanket” the operational area with contamination measurement and subsequent communication of results to commanders.

The concept of system employment envisions NBC reconnaissance support provided down to troops in contact.

The FOX armored detection vehicle was tailored to the tactical and operational deployment requirements of NBC defense units.

the FOX NBC-R version differs from the other versions by virtue of its tail section, the so-called „NBC tail”.



Tacticle
Concept

Installation Kit – Radiation Detection Equipment

The „NBC tail” was developed specifically for NBC reconnaissance. It permits direct sampling and terrain marking activities conducted from within the vehicle under collective NBC protection.

The NBC reconnaissance crew consists of a commander, driver and 2 equipment operators.

Installation Kit

The installation kit consists of specific holders for accommodating the equipment belonging to the NBC kit and includes the detection man's seat and the conversion kit batteries.

Radiation Detection Equipment ASG 1



Gamma radiation
dose rate meter

The automatic nuclear detection unit (ADU) is a Gamma radiation dose rate meter. It determines nuclear radiation within a measuring range from 10^2 to 10^3 rad/h (cGy/h).

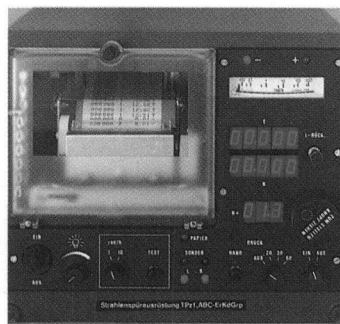
The equipment consists of the following assemblies:

- probes are attached to the vehicles exterior to register terrain radiation while at the same time suppressing vehicles radiation which otherwise

would falsify measurements. The probes are located to the left and right of the fire shield flaps on the armored detection vehicle's side windows. Probes are energy-compensated Geiger-Mueller meters which are screened for exclusive detection of a specific angle in space.

The Geiger-Mueller meters detect the low dose rate range from 0.02 to 5 rad/h (cGy/h) and the high dose rate range from 3 to 1000 rad/h (cGy/h).

- the ADU operator control, display and recording unit is installed in the electronics cabinet with the chemical detection equipment.

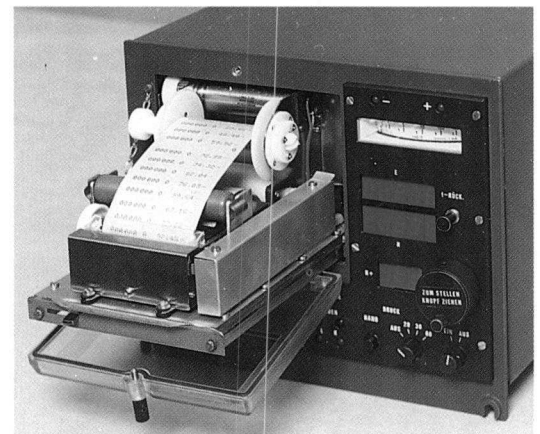


The pulse arriving from the probes are processed electronically. The operator can read the dose rate off the analog instrument. A built-in time computer converts dose rate values to the reference time H + 1 within a period from 1 to 48 hours.

The operator can always check the measured dose rate by referring to the analog indicator.

Only the time-compensated dose rates are printed out.

Printouts are produced on metallized printer paper either by triggering the printer manually or at preselected intervals. Detection location coordinates are printed out together with the detection data by feeding the values of the Vehicle Orientation System into the ADU.



Printer

The probes operational status is constantly monitored during operation and is displayed on the probe status indicator. If a probe fails, „red” is signalled for the appropriate side. At the same time, measurements of the remaining functioning probe are doubled to ensure consistent detection readings.

Electronic circuitry of the radiation detection equipment (ADU) can be checked by a built-in test device.

Orientation System – Warfare Agent Detection Equipment

Vehicle Orientation System (VOS)

The VOS (land navigation system) ensures timely communication of detection results by furnishing coordinates of battlefield contamination locations. This automatic location determination shortens the required stay on radiated terrain thus reducing soldiers exposure to radiation.

- The East/West and North/South distance from the pre-designated reference points

- the direction of travel on a compass (resolution 200 degrees – with an option for an LCD digital display with a selected resolution of 1° or 0.1° degrees.

Navigation data are made available as digital electrical signals through an interface between the VOS and MM1.

Directional Gyro KK 25

During vehicle travel, the KK 25 continuously determines all changes in direction, and passes these changes on to the map unit as a digital signal together with the information from the EWG 50. Determined directional changes are not influenced by magnetic fields.



Directional Gyro KK 25

Map Unit KG 25



Map Unit KG 25

This unit indicates:

- The vehicle's current grid location shown by a reticle on a UTM map and, on an LCD digital display with a selected resolution of 10 m or 1 m.
- The direction and distance from predesignated destinations (up to 50 destinations)

In the FOX armored NBC-Reconnaissance vehicle, the map unit is located to the right of troop leader/commander's seat.

Map Unit Holder KH 50

the KH 50 serves to hold the map unit while travelling.

Electrical Distance Sensor EWG 50

The EWG 50 is linked mechanically to the gear box of the FOX. It determines the distances covered in both forward and reverse and passes this information on as an electrical signal to the directional gyro.

Four pulses are generated per revolution, corresponding to a covered distance of 1 meter.

Chemical Warfare Agent Detection Equipment

This equipment consists of the detection system MM1 (mobile mass spectrometer) with a detection probe for detecting and identifying chemical agents where they occur. The types and quantities of all known warfare agents can be detected in the air, on surfaces and in water. Unknown substances can also be detected after a short time.

Combat Agent Detection Equipment with Probe, Sensor, Electronic Circuit and Double Wheel Sampling Unit

Background substances on the battlefield do not influence detection.

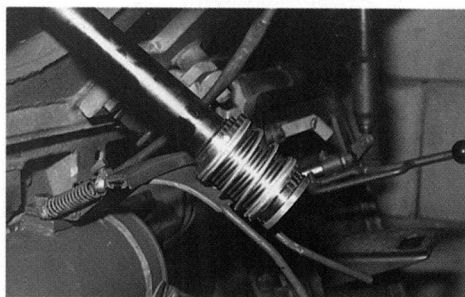
The MM1 is principally used to search for a specific quantity of preselected substances, whose occurrence is already suspected. This mode of operation is referred to as „Detection mode“. The unit is in its most sensitive state during this mode of operation. Detection mode is subdivided into air detection, point detection and wheel detection. Between 12 and 22 substances can be searched for and analyzed simultaneously.

The MM1 has the following main components:

1. The Detection Probe with Detection Head and the Temperature-controlled Probe Lead



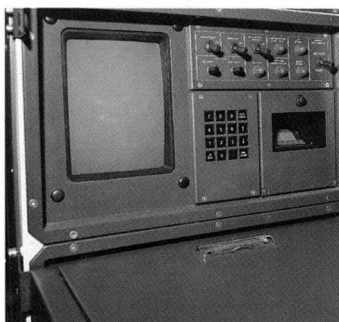
Ground probe and storage for spare detector wheels



Ground probe

The ambient air to be analyzed is used as the carrier gas for the detection probe. This gas carries the combat agent, which evaporates on contact with the probe surface, to the MM1 through the probe lead, which simultaneously acts as the separation system.

2. The Sensor Unit and the Electronic Control and Evaluation Circuitry



This unit consists of the actual mobile mass spectrometer and an electronic unit with keyboard, display, screen and printer as an input/output unit.

With the mobile mass spectrometer, organic substances in the air can be detected and reliably identified at concentrations of a few milligrams per cube meter of air, and ground contaminations of 10 milligrams of warfare agent per square meter.

Unknown substances can be analyzed with the MM1 by recording a mass spectrum of the substance. Based on the spectrum, the substance can then be assigned automatically to the appropriate detection process and also identified.

Detection mode takes place automatically when the detection wheels are in operation. The results of measurement are displayed in edited form on the screen and are printed out either by triggering the printer manually or at preselected intervals.

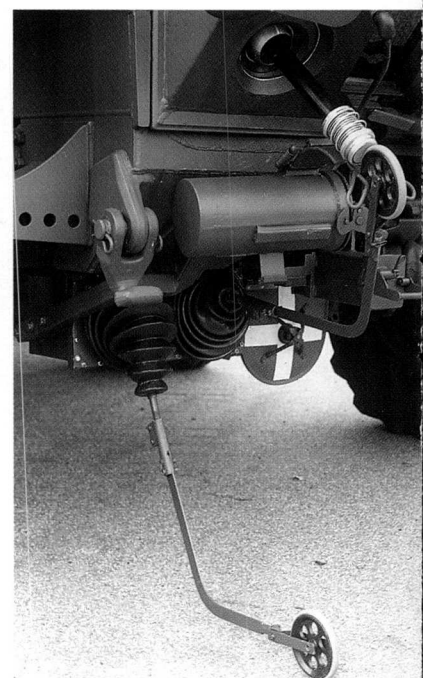
3. The Double Wheel Sampling Unit

this is a detection wheel mechanism with an electronically controlled drive and sampling wheels with silicone tires.

The aim of the controllable sampling wheels is to register settled warfare agents while the vehicle is moving.

The detection wheels are connected alternately to the detection probe of the MM1. Adhering contamination is passed through the detection

Wheel detector



THYSSEN HENSCHEL
Defense Technology

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HENSCHEL DEFENSE TECHNOLOGY

TPz1 FOX Armored Vehicle



FOX, NBC 1000 6/88 E H O Printed in West-Germany

The individual details given in this publication are to be regarded as guaranteed qualities if they are, individually and in each case, expressly confirmed to be so in writing.

Sampling Device Marking Equipment Warfare Agent Warning Unit

probe into the mass spectrometer and is detected.

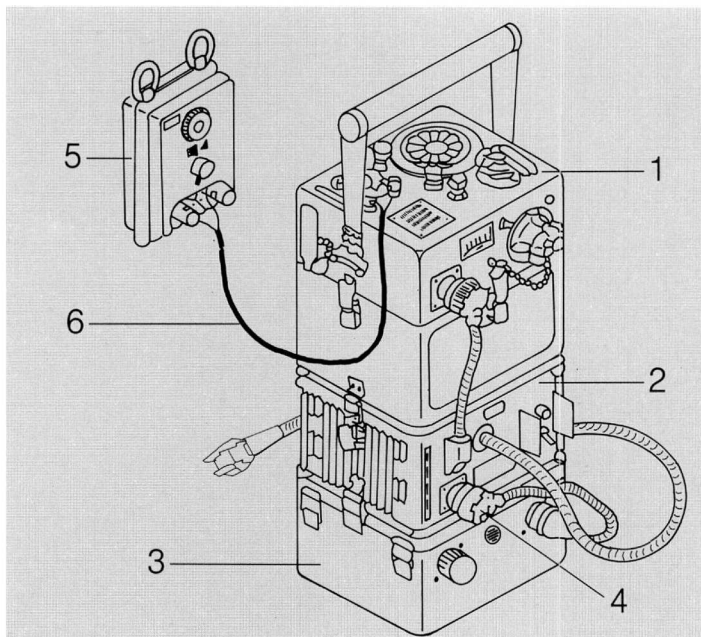
When required, detection wheels are replaced from the glove port in the tail of the armored detection vehicle. The replacement of the wheels is conducted from the interior of the NBC protected vehicle. The procedure is similar to the sampling procedure discussed below.

NBC Sampling Device

The sampling device consists of the sampling receptacle with gripper arm for picking up and transporting samples. Sampling is conducted while maintaining collective NBC protection.



Using a special glove, samples are taken through the work opening on the NBC tail. These samples serve for later analyses.



The Warfare Agent Unit consists of:

1. Detector unit M 43
2. Power Supply M 10
3. Battery Storage BB 501/U
4. Cable Assembly M 68
5. Alarm Unit M 42
6. Cable Harness Wires

NBC Marking Equipment

This equipment serves to mark contaminated terrain and other danger zones. The marking system consists of marking film, a securing rod and the self-uprighting marking buoy. These are ejected through the work opening in the NBC tail.

Chemical Warfare Agents Warning Unit

the warning unit is fastened on the inside of the NBC tail. Through an air flow system, air samples are sucked in from outside the vehicle, evaluated by the warning unit, and finally passed back to the outside. This unit can be deployed both inside and outside of the vehicle.

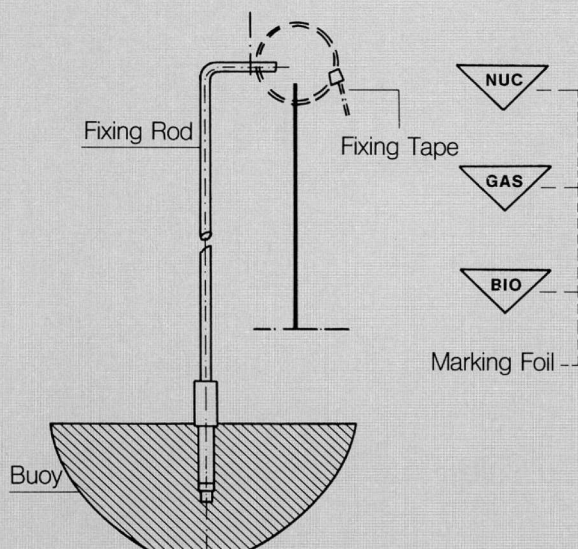
In the field of NBC reconnaissance, the FOX armored detection vehicle affords an essential increase in performance by

- shortening reconnaissance time.

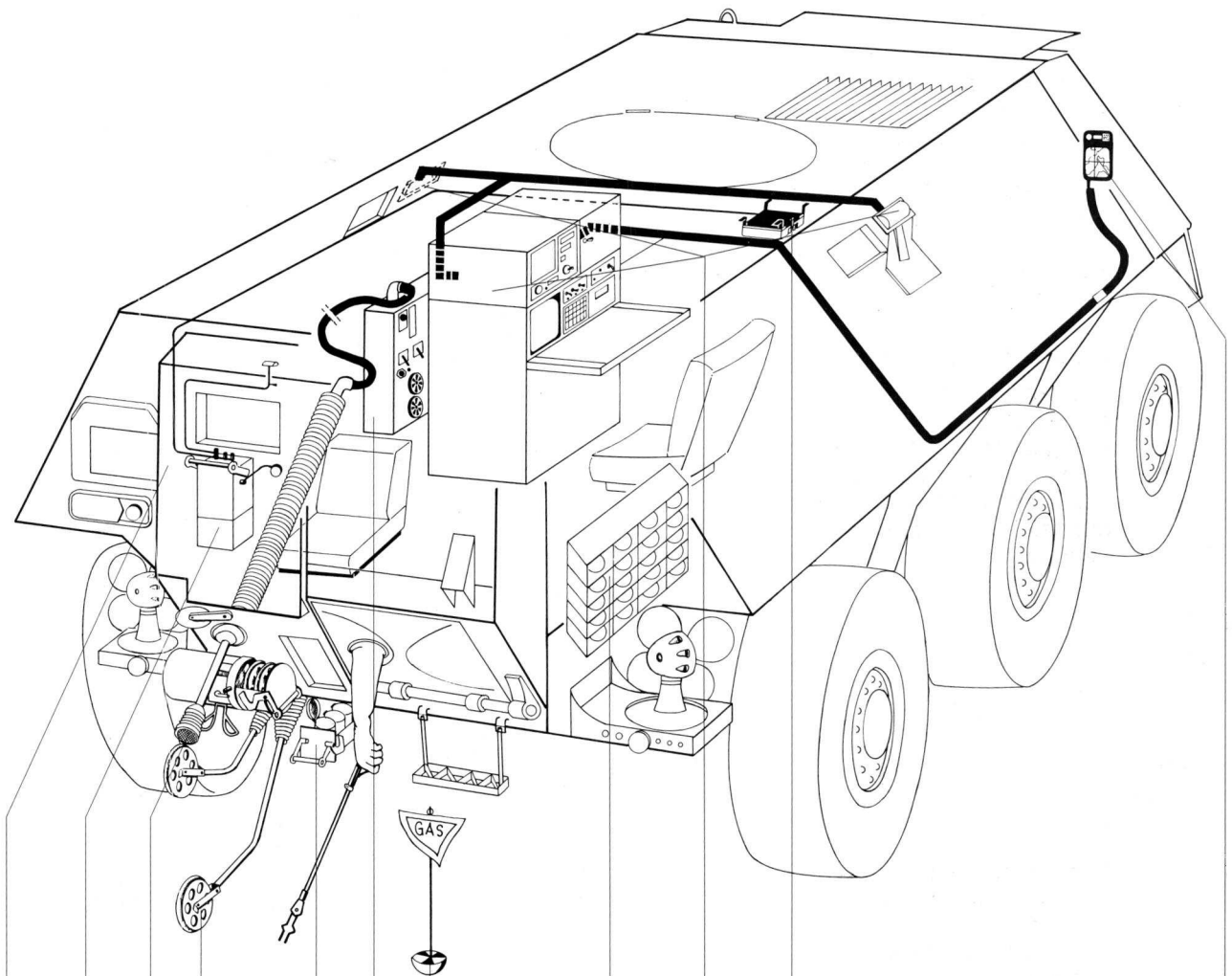
- obtaining precise and informative results including battlefield data.
- winning time for warning friendly troops.
- significantly improving protection of reconnaissance forces during detection work.

In total, the military command is provided with large-scale operational freedom in battle situations under NBC conditions.

Marking System



NBC Detection Equipment



NBC Tail

Alarm-system for nerve agents

Ground Probe

Double-wheel-Sampling Unit

NBC Sampling set

Mobile Mass Spectrometer

Radiation Detection Set and Probe

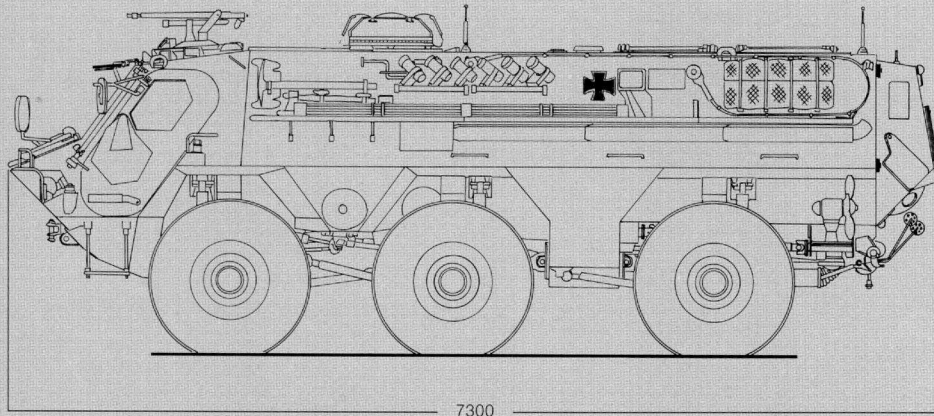
NBC Marking Set Storage

Radiation Detection Set and Probe

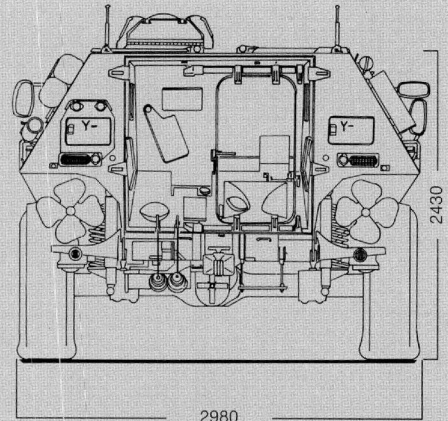
Remote Alarm Horn (Chemical Agents)

Vehicle navigation system

Technical Data

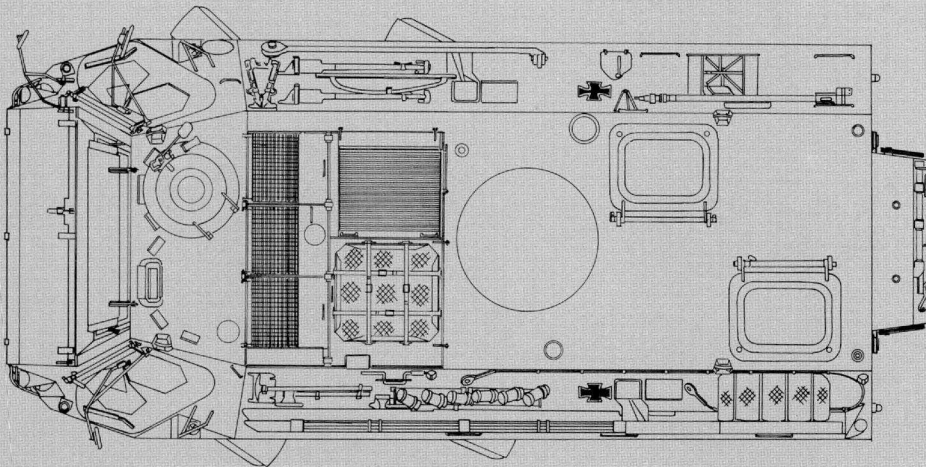


7300



2980

2430



Military weight (Unloaded)	15.3 t
Payload	1.7 t
Total weight	17.0 t
Engine output	235 kW/320 PS
Power-to-weight ratio	13.8 kW/t
Range	ca. 800 km
Climbability	60%
Climbing height	600 mm
Trench fordability	1080 mm
NBC filtered air capacity	180 m ³ /hr

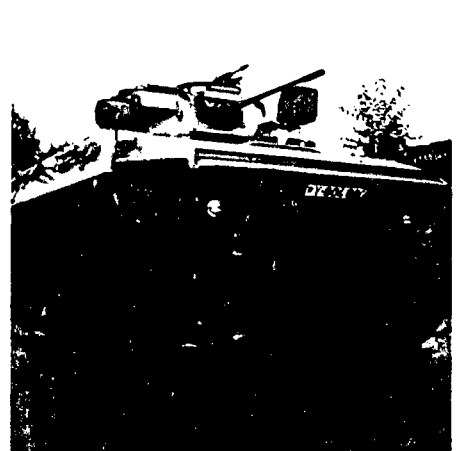
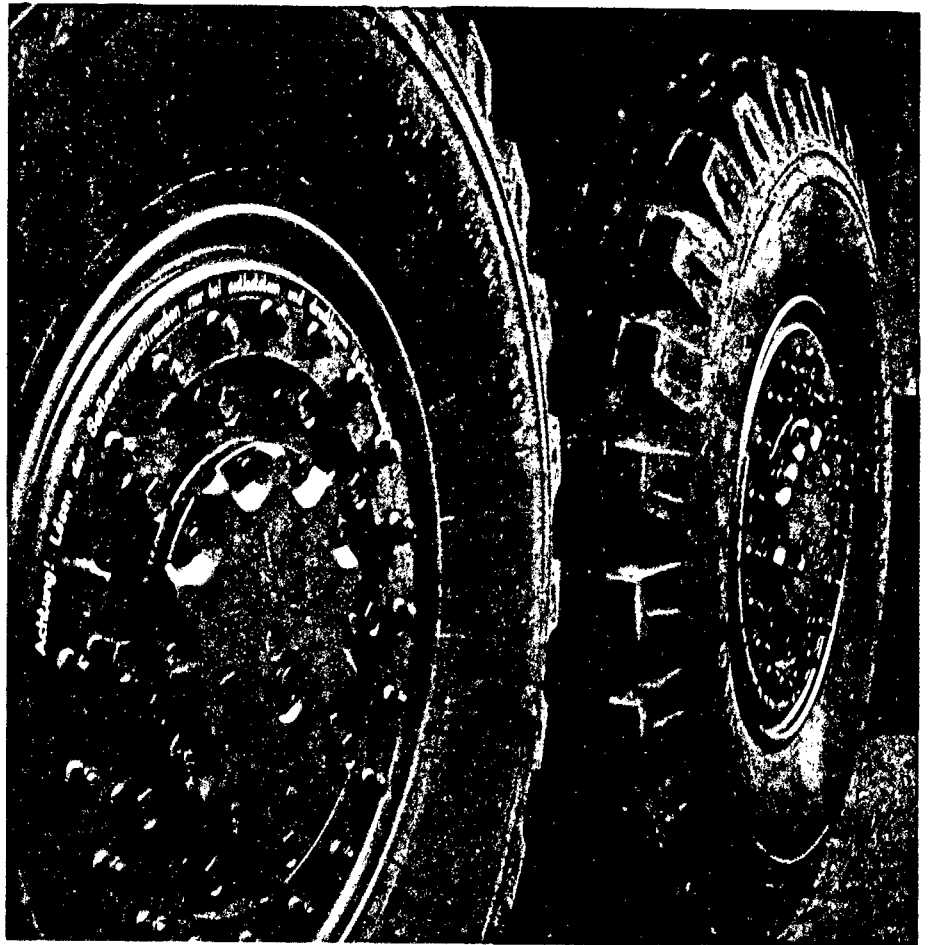
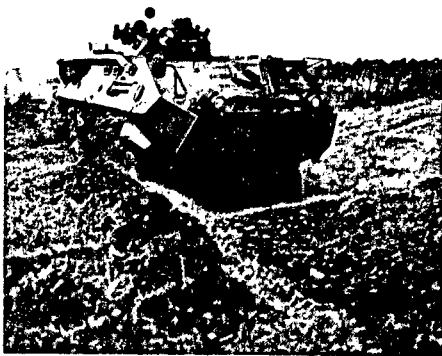


THYSSEN HENSCHEL

OBTAINED FROM ARMEX 89

HENSCHEL Defence Technology

HENSCHEL Wheeled Vehicle Family



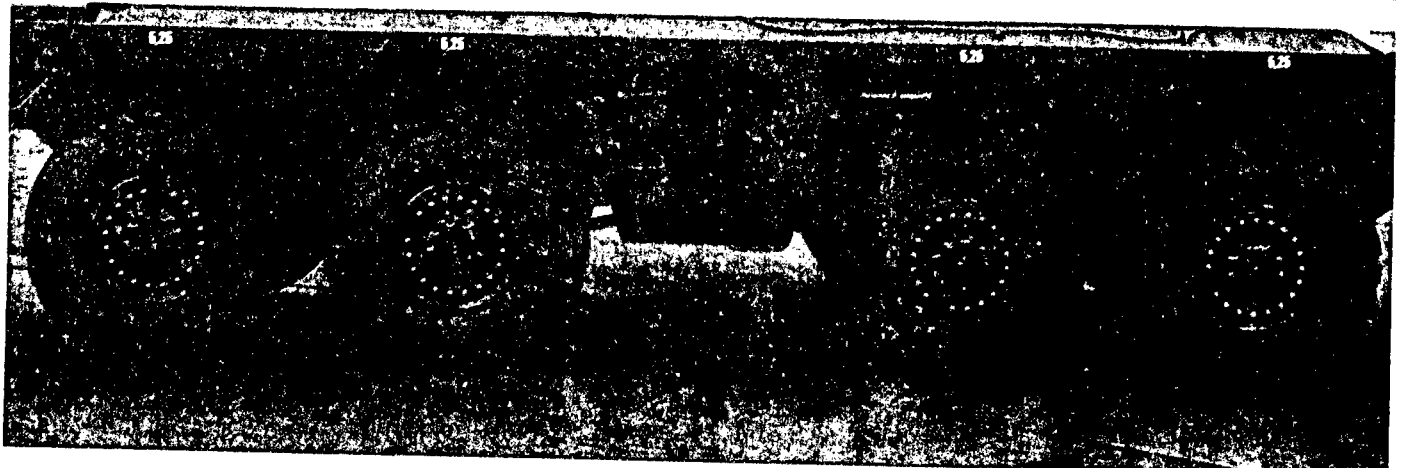
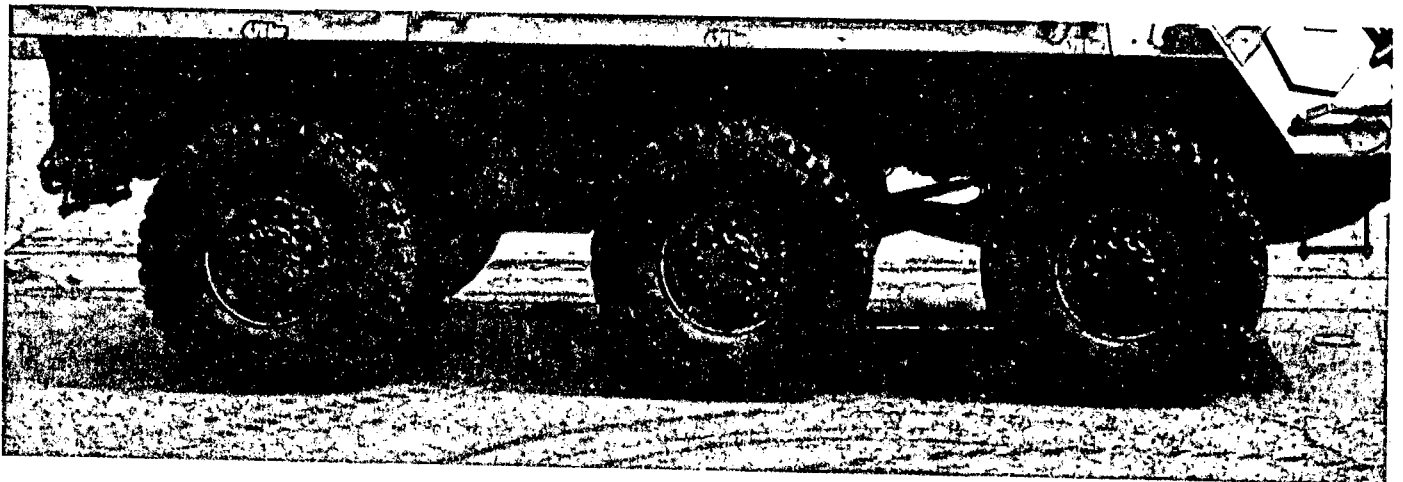
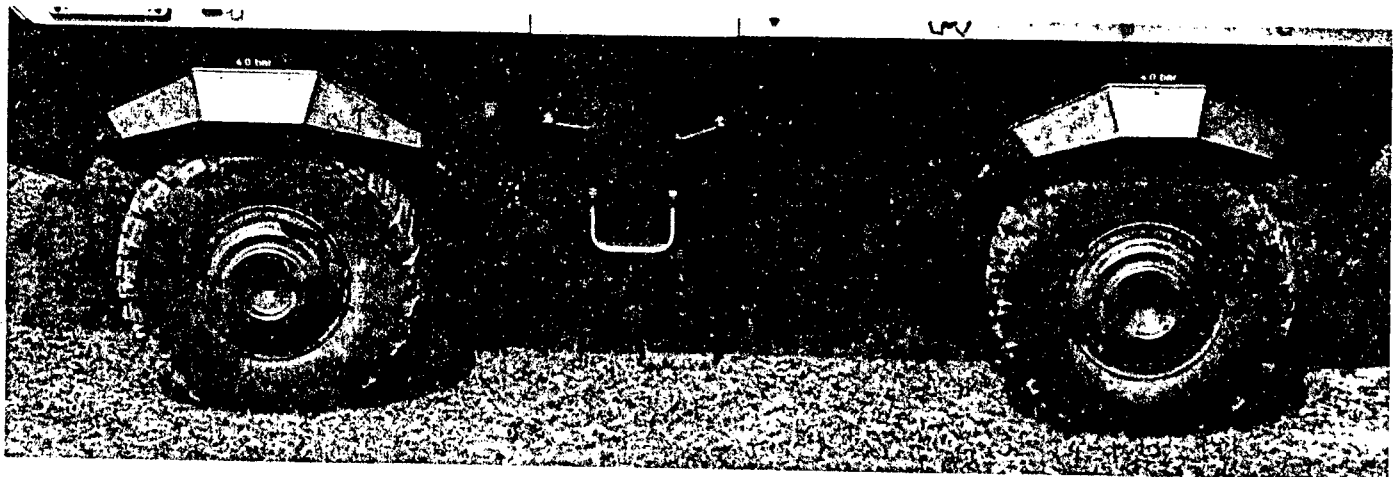
All statements as to the properties or utilization of the products mentioned in the following papers are only for the purposes of description. Guarantees in respect of the existence of certain properties of utilization of the products mentioned are only valid if agreed upon in writing.

HENSCHEL Wheeled Vehicle Family

Modern Forces, as well as today's Police and Border Patrol have to use for their various tasks armoured, all-terrain wheeled vehicles of different load classes. APC's, armoured support vehicles or reconnaissance vehicles, the wheeled vehicle

family of THYssen HENSCHEL offers a full scale of light 7,6 tons 4 x 4 up to a 19,5 tons 8 x 8 reconnaissance vehicles. More than four decades' experience and know-how in the development and manufacturing of armoured wheeled and tracked vehicles are the basis for future orientated technology of THYssen HENSCHEL.

All major components of assemblies are of civil production, available all over the world, which do not pose any problems to the user with regard to spare parts and maintenance. THYssen HENSCHEL supplies with the vehicles complete documentation and gives support by sending qualified training personnel for use of THYssen HENSCHEL wheeled vehicles.



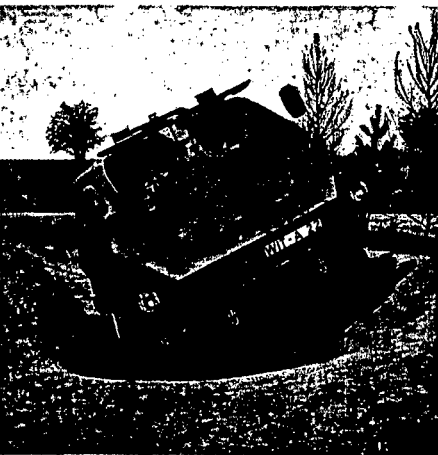
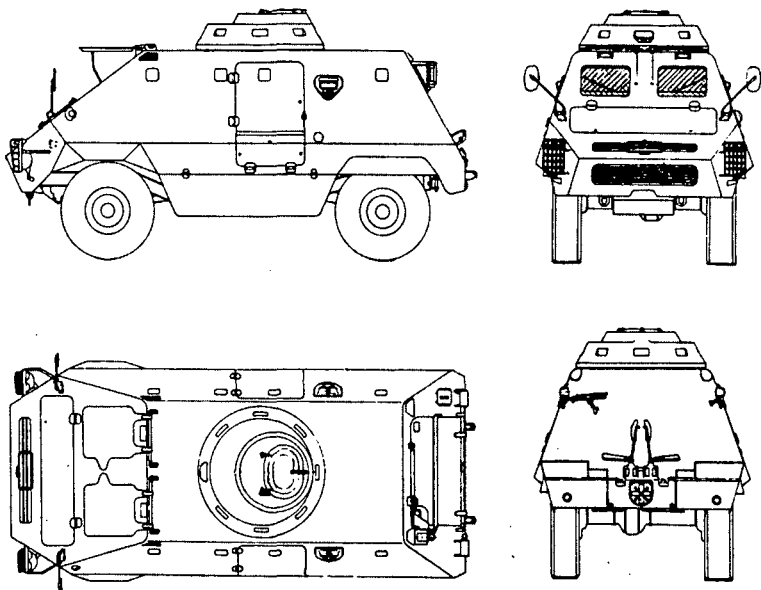
UR 416 (4 x 4)

A Product of THYSSEN Maschinenbau, Witten-Annen

The armoured personnel carrier UR 416 is a modern construction with outstanding characteristics on road and terrain, suitable as transport vehicle for mechanized infantry, police and border patrol operations. The superstructure is of welded armoured steel plates and is safe against 7,62 mm ball rounds and grenade fragments. The spacious interior can take a crew of 10. Biported doors each in the lateral walls and in the rear guarantee quick embarking and disembarking. Observing and firing from the vehicle is possible through the firing ports in the side walls.

The armoured superstructure can be hoisted off the all-wheel driven and all-terrain chassis (4 x 4) of the UNIMOG series. The OM 352 Diesel engine has an output of 81 kW (110 HP/DIN) and a torque of 320 Nm at 1600 r.p.m. Due to the low fuel consumption the UR 416 has an operating range of approx. 700 km on roads. Water can be crossed up to 1,40 metres deep.

Ramps of 70% takes the UR 416 without any problem. Simple and easy in operation and maintenance, the UR 416 is the ideal vehicle for light armoured units.



Crew		10 (driver, commander + 8 men)
Dimensions	Length	5210 mm
	Width	2300 mm
	Height (without armament)	2225 mm
	Ground clearance	400 mm
Weights	Empty weight	6000 kp
	Total weight	7600 kp
Performance	Engine output	81 kW (110 HP/DIN) at 2800 r.p.m.
	Max. Speed	85 km/h
	Operational range approx.	700 km
Armament (optional)		Gun mount for 1 machine gun Monoplace turret for twin machine gun Monoplace turret with 2 cm rapid fire gun Observation cupola
Communication system		according to customer's requirement

TM 170 (4x4)

A Product of THYSSEN Maschinen Witten-Annen

The TM 170 is the latest armoured police vehicle development. It is specially designed for internal security, police and border patrol operations.

Its spacious interior provides comfortable seating for a crew of up to 12 men. The armoured steel superstructure provides ballistic protection against small arms, rifle fire (7.62 cal. AP and 5.56 cal.

The supercharged Diesel engine of 124 kW (168 HP/ DIN) and a torque of 491 Nm at 1500 r.p.m. offer sufficient power output for this vehicle.

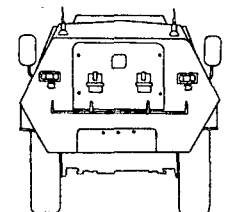
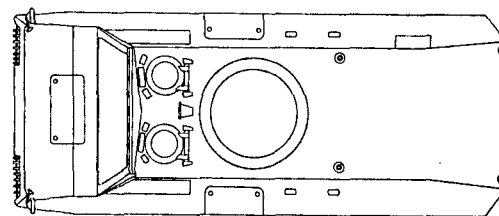
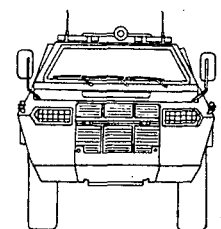
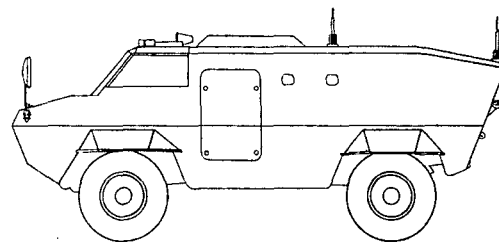


ball rounds) and molotov-cocktails.

The TM 170 is fully amphibious. Propulsion is provided by use of two independent power units reaching a maximum speed in water of up to 10 km/h.

The interior can be fitted with a special „comfort package” offering airconditioning, comfortable seating, inside walls fully insulated and covered, remote controlled rear view mirrors.

The large bulletproof windows give excellent view. Upon special request, protection flaps for the windows can be supplied. In this case, the commander and driver have sight through angular periscopes. The two doors in the side walls and a ramp at the rear guarantee quick embarking and disembarking.



Crew		12 (driver, commander + 10 men)
Dimensions	Length	6120 mm
	Width	2450 mm
	Height (without armament)	2320 mm
	Ground clearance	480 mm
Weights	Empty weight	8800 kp
	total weight	11200 kp
Performance	Engine output	124 kW (168 HP/DIN) at 2800 r.p.m.
	Max. Speed	100 km/h
	Max. speed in water	10 km/h
	Operational range on road approx.	700 km
Armament (optional)		Gun mount for 1 machine gun Monoplace turret for twin machine gun Monoplace turret with 2 cm rapid fire gun Observation cupola NBC protection possible upon request
Communication system		According to customer's requirement

CONDOR (4 x 4)

The Radpanzer CONDOR (4 x 4) is a modern amphibious armoured wheeled vehicle. It is used for various tasks, such as:

- Armoured Personnel Carrier
- Reconnaissance operations
- Weapon carrier.

Other variants such as ambulance, command post and fitters are also available.

The requirement of modern armies for an all-wheel drive amphibious combat vehicle was realized by using as many standard parts as possible. The selfsupported armoured steel hull provides ballistic protection against 7.62 cal. AP and 5.56 cal. ball rounds from any distance at horizontal attack.

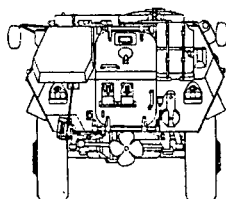
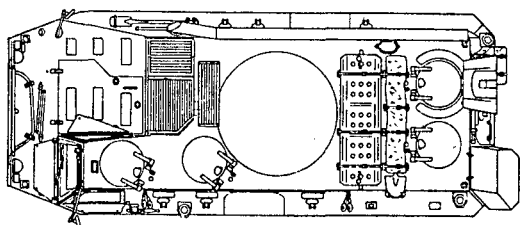
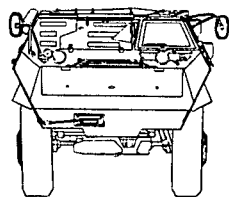
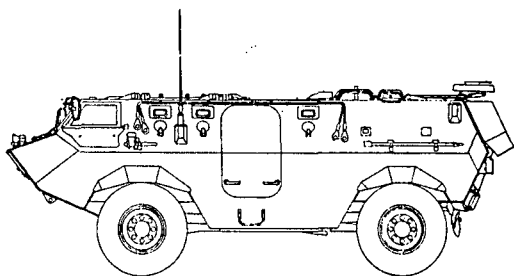
The driver's windshields and vision blocks provide the same ballistic protection as the hull. Its voluminous interior provides ample space for a crew of up to 14 men when used as APC.

One sliding door on each side and a biported rear door allow quick embarking and disembarking.

Maximum speed on road is 100 km/h, whereas speed in water is up to 10 km/h. The water propulsion is gained by a 360° round pivoting active rudder-propeller, remote controlled by the driver, always indicating the propeller direction.

The hydraulic winch with a 50 metre cable can be operated through the front or rear.

The combat tires allow a speed of 50 km/h for more than 30 km after being punctured and deflated. Much higher range is possible with deflated tires at lower speed.



Crew		Up to 14 (driver, commander + 12 men)
Dimensions	Length	6050 mm
	Width	2470 mm
	Height (without armament)	2080 mm
	Ground clearance	475 mm
Weights	Empty weight	9500 kp
	Total weight	12000 kp
Performance	Engine output	124 kW (168 HP/DIN) at 2800 r.p.m.
	Max. speed	100 km/h
	max. speed in water	10 km/h
	Operational range approx.	900 km
Armament (optional)		Gun mount for one machine gun Monoplace turret for twin machine gun Monoplace turret with 2 cm rapid fire gun Missile launching unit NBC protection possible upon request
Communication system		According to customer's requirement

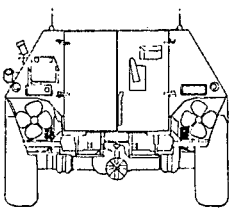
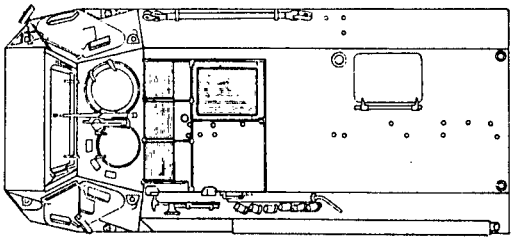
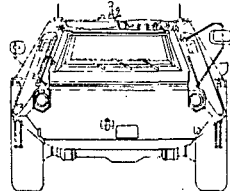
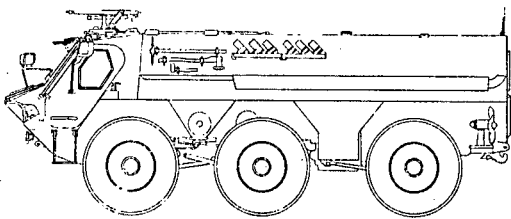
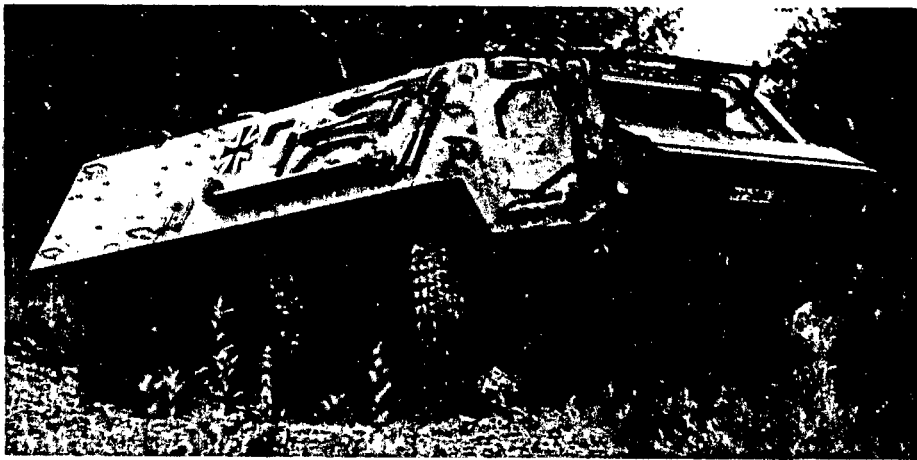
TPz 1 FUCHS (6 x 6)

The TPz 1 FUCHS is a amphibious armoured wheeled vehicle, reliable and economical in operation. Extremely mobile, the TPz 1 FUCHS has a top speed of 105 km/h on roads. The engine output of 235 kW (320 HP/DIN) is transferred to the ground via the 6 wheels. In water, the FUCHS is driven by 2 rudder-propellers, pivoting round 360° and reaches a speed of 10 km/h. The vehicle can be used for transport of up to 12 fully equipped men (including commander and driver) and manifold tasks by installing special kits.

The cargo compartment has up to 6 m³, space depending on the vehicle version. Access is through the large biported rear door. The welded selfsupporting armoured steel hull is gas- and water-tight. NBC-protection system, heaters, batteries and radio equipment are fitted on top of the wheel housing to save space.

The windows are bulletproof with supplementary protection of flaps. When installing the appropriate kits, the TPz 1 can be used as:

- Ambulance
- Armoured engineering vehicle
- NBC detection and decontaminating vehicle
- Radio command post
- Radar support vehicle
- Vehicle for electronic warfare.



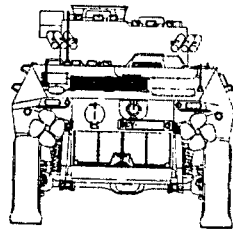
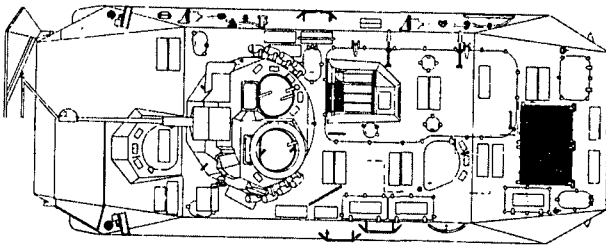
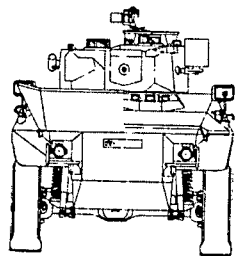
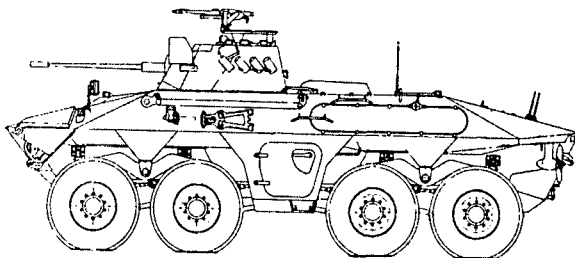
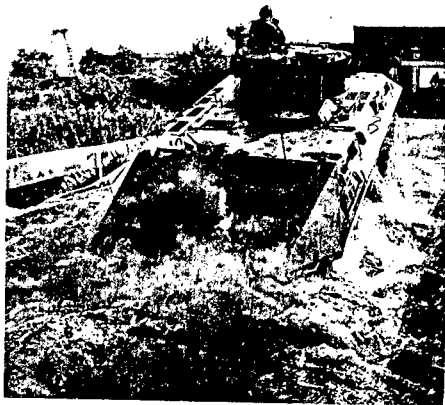
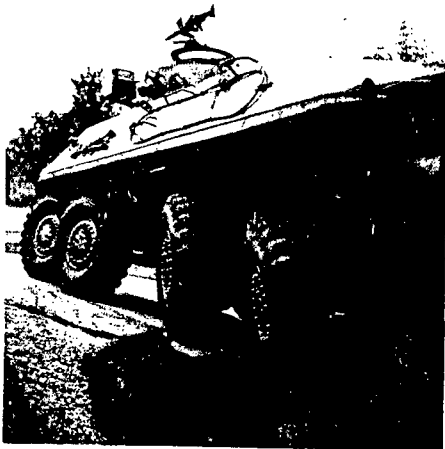
Crew		up to 12 (driver, commander + 10 men)
Dimensions	Length	6760 mm
	Width	2980 mm
	Height	2300 mm
	Ground clearance max.	406 mm
Weights	Empty weight	14000 kp
	total weight	16200 kp
Performance	Engine output	235 kW (320 HP/DIN) at 2500 r.p.m.
	Max. speed	105 km/h
	Constant speed	90 km/h
	Max. speed in water	10 km/h
	Operational range approx.	800 km
Armament (optional)		1 machine gun Mono- or biplace turret with twin machine gun Mono- or biplace turret with 2 cm rapid fire gun Missile launching unit
Communication system		According to customer's requirement

SPAEPz LUCHS (8 · 3)

Pertaining to a new generation of reconnaissance vehicles, the SPAEPz LUCHS is fully amphibious with an operational range of 800 km. Due to special installations, the LUCHS has a low noise output – important for reconnaissance – „what the enemy does not hear, he cannot locate”. The welded armoured steel hull is gas- and water - tight with NBC protection. The engine compartment, cooling and exhaust system are separated from the fighting compartment by bulkheads. From front the FUCHS is safe against 7,62 mm AP ammunition. All gratings are bullet-proof. When driving with closed hatches, angular periscopes can be used. The powerful 286 kW (390 HP/DIN) supercharged multi-

fuel engine gives the 19,5 tons vehicle a max. speed of 90 km/h. All 8 wheels are steerable. The turning circle is therefore only 11.5 m ø; when steering 4 wheels 19.4 m ø. Driver and rear driver, – the latter – being also the radio operator, have the same controls for direction, brakes and for the twin-directional automatic transmission with 4 speeds and torque converter.

Commander and gunner are located in the turret armed with a 20 mm rapid fire gun, rotating 360°, aiming range in elevation from – 15° to + 80°. Also a 2 x 4 smoke grenade launcher is fitted to the turret.



Crew		4 (driver, commander, radio operator, rear driver)
Dimensions	Length	7743 mm
	Width	2980 mm
	Height (up to MG rail)	2905 mm
	Ground clearance	440 mm
Weights	Combat weight approx.	19500 kp
Performance	Engine output	286 kW (390 HP/DIN) at 2500 r.p.m. Diesel operated 220 kW (300 HP/DIN) at 2500 r.p.m. Gasoline operated
	Max. speed	90 km/h
	Constant speed	80 km/h
	Approx. speed in water	9 km/h
	Operational range approx.	800 km
Armament		Bi-place turret with 2 cm rapid fire gun Anti-aircraft machine gun
Communication system		According to customer's requirement

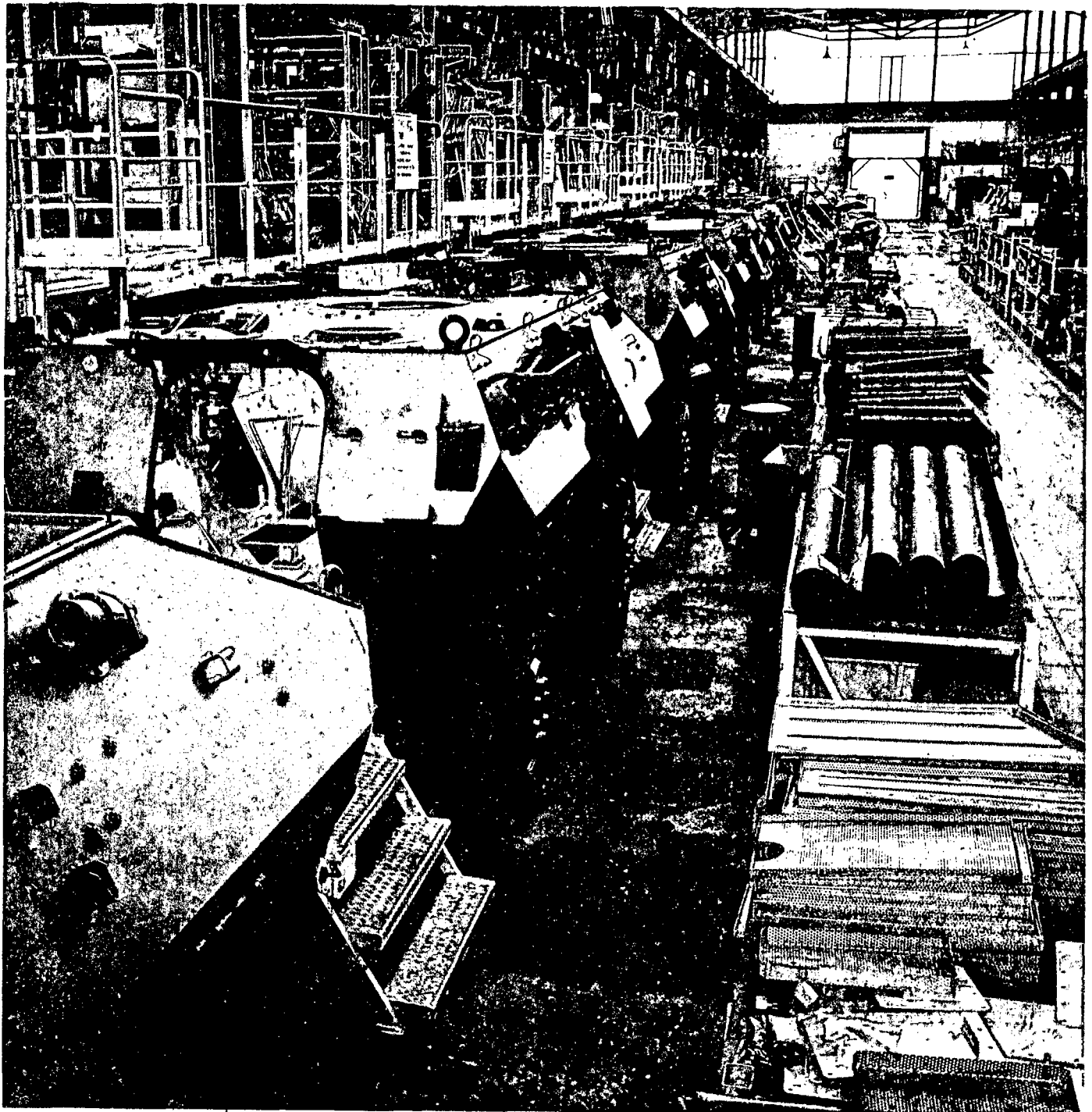
HENSCHEL Defence Technology

HENSCHEL Wheeled Vehicle Family

THYSSEN HENSCHEL
HENSCHEL Wehrtechnik

✉ 102 969, Henschelplatz 1
D-3500 Kassel

☎ (0561) 80 11 **Tx** 99750



Modifications due to further technical development are subject to reserve

E BO Printed in West-Germany

Wehrtechnik Radfahrzeuge

MEMORANDUM

3136-5-2460 (DPSL)

22 Jun 89

CS

INFORMATION ON THYSSEN
AND U.S. ARMY NUCLEAR,
BIOLOGICAL AND CHEMICAL
RECONNAISSANCE VEHICLES

1. At the 20 Jun 89 briefing on the Militia Light Armoured Vehicle Project, the Minister asked for the subject information.
2. Enclosed, therefore, is an Aide-Mémoire providing the information.
3. I request you sign the transmitting memo to ADM (Mat).

P. Verney
P. Verney
DPSL 2
994-9435


Enclosure: 1

DISTRIBUTION LIST

Action

Information

CS

CEM
DG Proc S
DPSL
PM MILLAV 
PD LRMP
D Cab Ln

MEMORANDUM

3136-5-2460 (DPSL)

Jun 89

ADM (Mat)

INFORMATION ON THYSSEN
AND U.S. ARMY NUCLEAR,
BIOLOGICAL AND CHEMICAL
RECONNAISSANCE VEHICLES

1. At the 20 Jun 89 briefing on the Militia Light Armoured Vehicle Project, the Minister asked for the subject information. Enclosed, therefore, is an Aide-Mémoire providing it.

2. I request you sign the covering memo to the MSO.

R.D. Gillespie
CS
992-6523

Enclosure: 1

MEMORANDUM

3136-5-2460 (DPSL)

Jun 89

MSO

INFORMATION ON THYSSEN
AND U.S. ARMY NUCLEAR,
BIOLOGICAL AND CHEMICAL
RECONNAISSANCE VEHICLES

1. At the 20 Jun 89 briefing on the Militia Light Armoured Vehicle Project, the Minister asked for information on Thyssen and the U.S. Army acquisition of Nuclear, Biological and Chemical Reconnaissance Vehicles.
2. Enclosed is an Aide-Mémoire providing that information.

E.J. Healey
ADM (Mat)
992-6622

Enclosure: 1

AIDE-MÉMOIRE
FOR THE MINISTERS

SUBJECT: Nuclear, Biological, and Chemical
Reconnaissance (NBCR) Vehicles for the U.S.
Army

BACKGROUND:

1. On 20 Jun 89, MND asked for information regarding Thyssen's involvement with the U.S. Army acquisition of NBCR vehicles and the possible implications for Bear Head Industries Ltd. (BHI).

2. Participants

- Thyssen and General Dynamics in a teaming arrangement;
- TRW of Los Angeles, with General Motors of Canada as a sub-contractor for the vehicles.

In addition to being prime contractor, TRW would provide the electronic equipment to be mounted in the vehicles.

3. Scope of Project

- Two vehicles from each participant for side-by-side trials;
- an initial acquisition of 58 vehicles phased as follows:
 - 3rd quarter of 1990 - 10 vehicles
 - 2nd quarter of 1991 - 8
 - 2nd quarter of 1992 - 6
 - 3rd quarter of 1992 - 14
 - 4th quarter of 1992 - 15
 - 1st quarter of 1993 - 5
58
- options for up to 231 additional vehicles from the last quarter of 1993 to the last quarter of 1998.

4. Due to budget constraints, the scope of the project has been reduced from the original requirement for over 600 vehicles.

5. Events Leading to Contract Award

- | | |
|---|--------------|
| - Conclusion of Trials | - Jul 89 |
| - Issue of Request for "Best and Final" Proposals | - Jul/Aug 89 |
| - Competitors respond | - Aug/Sep 89 |
| - Contract Award | - 29 Sep 89 |

- 2 -

DISCUSSION:

6. Direct Canadian Involvement. There appears to be no potential for any direct Canadian industrial participation if Thyssen and General Dynamics were successful. BHI's draft business plan indicated that if Thyssen and General Dynamics obtained the contract, "Thyssen would endeavour to place hull fabrication of some 200 units in BHI". However, the limited quantity and long delivery schedule preclude such a course:

- for the small firm quantity (58), delivery would be spread over nearly three years (i.e. from the third quarter of 1990 to the first quarter of 1993); and
- for the options, delivery would occur over five years (from 1993 to 1998).

7. Such relatively small quantities over a long period require an existing production line satisfying other orders.

8. The enclosed letter to ACOA clearly indicates that the initial vehicles would come from Germany and the follow-on vehicles from a U.S. production line.

9. Indirect Canadian Involvement. There is no evidence to indicate that General Dynamics would place future business with Bear Head as an offset for producing NBCR vehicles. In addition:

- with the reduction in U.S. tank orders, General Dynamics will probably keep as much production as possible for itself to utilize fully its own capacity; and
- with DND's Tank Replacement project on hold, there is no foreseeable prospect for BHI to be a sub-contractor to General Dynamics in production of Abrams tanks.

CONCLUSIONS:

10. There does not appear to be any opportunity for Bear Head Industries to initiate or sustain a facility in Cape Breton if Thyssen and General Dynamics were to obtain the U.S. contract for NBCR vehicles.

Canadian Embassy



Ambassade du Canada

501 Pennsylvania Ave., NW
Washington, D.C. 20001
Tel.: (202)-682-1740

May 11, 1989

Mr. John McDowell
Atlantic Canada Opportunities Agency
P.O. Box 3442
Ottawa, Ontario
Canada K1P 6N8

Dear John

I'm looking forward to meeting with you when I'm in Ottawa/Hull for the upcoming HITEC'89 and ARMX events. It will give us a good opportunity to bring each other 'up to speed' on the current situation regarding the Nuclear, Biological and Chemical Reconnaissance System procurement by the U.S. Army.

I am attaching a photostat of an excerpt from the May '89 issue of a magazine entitled "Military Forum. The Magazine for Defense Acquisition, Logistics & Training". The article addresses several methods that the Department of Defense can employ to increase the level of international (NATO) teaming for the production of defense materiel. It uses, as an example, the procurement of the NBCRS vehicle.

Please note the quote from Bob Lusardi, Director of Business Development of General Dynamic's Land Systems Division, "...If the German vehicle wins the prototype trials, now scheduled to start late this spring, interim production vehicles would come from Germany. But by the time full-rate assembly rolled around, the Fox would be a U.S. vehicle coming off a U.S. line". Other reliable sources tell me that GD has made arrangements to lease production facilities in Detroit to manufacture these vehicles.

So much for the company's stated intention to manufacture the vehicle in Cape Breton!

I hope this information is useful in your ongoing dialogue with Thyssen Henschel Fuchs. Once again, I look forward to seeing you in The Nation's Capital later this month.

Sincerely,

R.J. Mahar
Commercial Officer (Defence)

traditional. It has long been the way in which an aggressive defense company breaks into the market of a nation where it has no experience or circumvents "buy domestic" political pressure.

The Fox nuclear-biological-chemical reconnaissance vehicle involves a classic "push" case. Developed by Thyssen Henschel Fuchs, a West German company, the Fox represents a capability the U.S. Army desperately wants. It currently has no vehicle specially equipped or dedicated to the demanding role of detecting fallout and poison gas. "I've got a pin-up of one in my bedroom," jokes an Army chemical officer.

However, concerned about U.S. jobs, Congress directed the Army to hold a competition between prototype vehicles from a number of manufacturers, rather than just buying the German product. A team of General Motors/TRW swung into action to ready a test vehicle for the "sniff-off."

Thyssen responded by obtaining its own U.S. partner—GD. In fact, the way the team has arranged its bid to the U.S. government, Thyssen would at least initially be a subcontractor to GD's prime. If the German vehicle wins the prototype trials, now scheduled to start late this spring, interim production vehicles would come from Germany. But by the time full-rate assembly rolled around, the Fox "would be a U.S. vehicle coming off a U.S. line," says Bob Lusardi, director of business development at GD's Land Systems division.

GD, in turn, has used teaming on another project as a way of getting its nose under the tent of a U.S. program it

...so much
for a plant
in Atlantic
Canada...

To:

VA Ste: t@DG Proc S@DG Proc S LST
RN Stui, son@DG Proc S@DG Proc S LS.
Col SA McCormack@DP@L@DG Proc S LSTL

Cc:

CEM

Bcc:

From:

RD Gillespie@CS@CS 101

Subject:

MILLAV

Date:

Wednesday, May 24, 1989 at 6:17:08 pm EDT

Attach:

Certify:

Y

Forwarded by:

SPOKE TO CEM THEN MAT WHO HAS CLEARED WITH DCDS AND MND. GO. AMEND MC TO
DEAL WITH BUDGET IMPACT - ONE PARA? - AND PREPARE FOR FINAL SIGNOFF.
CLEAR FIRST WITH DCABL. UNDERSTAND THYSSSEN IS TRYING AGAIN. WE'LL HAVE TO PREPARE A COPREHENSIVE
DEFENCE ASAP IN FORM OF AN AIDE MEMOIRE TO MND/ASSOC MND. PD ALREADY
ALERTED BY MAT I THINK.

CEM
② DGSPDI

Info.

May
30/65
25.5.89

W. Bear Head

1992 earliest prod.

|||-----

in previous business plan

Cost - no info solicited
- industrial base.

~~RCB figures 0 25 70~~
~~paras 14 & 15~~
~~Recommendation~~
~~+ para on affordability~~
~~+ TB eff approval date Sep 89.~~

CONFIDENTIAL

AIDE-MEMOIRE

FOR ADM(MAT)

SUBJECT: Militia Light Armoured Vehicle (MILLAV) Project

BACKGROUND:

1. The MILLAV Project proposes to acquire up to 221 light armoured vehicles for the Land Reserves, (199 DDGM 8x8s) infantry section carriers (ISCs), and 22 vehicles from FMC as engineering and TOW under armour vehicles.
2. Cost is not to exceed \$200M BY.
3. Deliveries were expected in 90/91 timeframe.
4. DDGM, as the only current Canadian manufacturer of light armoured vehicles needs an order of this magnitude to maintain the defence industrial base for the next two years.

DISCUSSION:

5. Thyssen Henschel displayed a TPZ1 FOX Armoured Vehicle Nuclear Biological Chemical (NBC) Reconnaissance Vehicle at ARMX (brochure attached).
6. This vehicle has been designed primarily as an NBC reconnaissance vehicle. The sales brochures indicates there are 12 conversion or installation kits enabling it to perform a wide range of military tasks, as well as movement of troops, supplies and equipment. Although the West German Army have over 1,000 vehicles of this type, none to our knowledge are infantry section carriers (ISCs).
7. As indicated, the major requirement for the MILLAV Project is for an infantry section carrier. An ISC transports a section of infantry (10 soldiers) around the battlefield.
8. The FOX ISC therefore has the following significant disadvantages if it were to be considered for the MILLAV Project.
 - a. orphan ISC vehicle in Canadian Army for operations, training and logistic support;
 - b. orphan ISC vehicle with Canadian allies;
 - c. unknown performance as an ISC; and

.../2

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- 2 -

- d. major engineering redesign would be required to allow troops to disembark (i.e. doors too high off the ground and no ramp).
9. Manufacture of the FOX in Canada could be done at Bear Head Industries in the proposed plant in Cape Breton, Nova Scotia but this has the following three draw backs (copy of "Understanding in Principle" between Government and Bear Head Industries attached):
- a. Bear Head's previous business plan indicates production not possible prior to 1992 (i.e. not in the timeframe envisaged for the MILLAV Project);
 - b. the existing industrial base for light armoured vehicles at DDGM may be lost if they are not awarded a contract; and
 - c. costs are unknown.
10. Thyssen Henschel produce other light armoured vehicles as indicated in the attached brochures. The FUCHS 8x8 does not appear to be developed as an ISC. The 4x4 is in-service with the Malaysian Government, however, being a 4x4 would lack the mobility resident in Canadian light armoured vehicles.

CONCLUSION:

11. Thyssen Henschel produce light armoured vehicles which should be considered for future acquisition, however, they have significant shortcomings with respect to the MILLAV Project.
12. Time, cost and industrial base considerations appear to be such that the involvement of Bear Head Industries in the MILLAV Project does not appear warranted.

Prepared By: LCol L.W. Hyttenrauch, PM MILLAV, 995-2194

Date Prepared: 26 Mar 89

CONFIDENTIAL

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filed for 10/1/88



*but
much 2' copy
for H.C.H. 10/1/88*



Atlantic Canada
Opportunities Agency

Agence de promotion économique
du Canada atlantique

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September 28, 1988

Mr. Harry Webster
Director General
Aerospace, Marine and Electronics
Systems Directorate
7th Floor, Tower C, Wing 1
Place du Portage
11 Laurier Street
Hull, Quebec

Harry
Dear Mr. Webster:

I am attaching for your consideration the following documents concerning the Bear Head heavy-industry proposal for Cape Breton:

- (1) a copy of the "Understanding in Principle" which has been signed by the Company, the ACOA Minister, the DRIE Minister, and the Minister of National Defence;
- (2) the press release to be issued by the Bear Head Industries; and
- (3) various "questions and answers":
 - (a) Part I, general issues, and
 - (b) Part II, specific issues prepared primarily for the use of the Company.

The announcement is scheduled for 4:00 p.m. (Atlantic time) and will consist of the simultaneous release by Bear Head Industries of the press release, in Ottawa, Halifax and West Germany.

*I think this will be self-explanatory.
Thanks for your help.*

John McDowell
John McDowell

Attachments

Canada

DIRECTOR GENERAL AMES
SEP 28 1988 2164
DIRECTEUR GÉNÉRAL SAME
001155

UNDERSTANDING IN PRINCIPLE

This document signed this 27 day of September, 1988,
between:

THE GOVERNMENT OF CANADA, as
represented by:

i) the Minister responsible for
the Atlantic Canada Opportunities
Agency (hereinafter called "the
ACOA Minister"),

ii) the Minister of Regional
Industrial Expansion (hereinafter
called "the DRIE Minister"), and

iii) the Minister of National
Defence (hereinafter called "the
National Defence Minister"); and

BEAR HEAD INDUSTRIES LTD., a
company incorporated under the
laws of Nova Scotia, a subsidiary
which is one hundred (100%)
percent owned by Thyssen
Industries A.G. of the Federal
Republic of Germany (hereinafter
called "the Company").

WHEREAS the Government of Canada desires
to foster the economic expansion and industrial
development of Cape Breton;

WHEREAS the Company must have in place a
North American heavy-industry manufacturing facility on
an urgent basis, and desires to establish such a
facility in the Bear Head peninsula region of Cape
Breton;

WHEREAS the Government of Canada
recognizes that the proposed Bear Head facility
represents an important economic development and
diversification of the industrial base of Cape Breton;
and

- 2 -

WHEREAS the Company is preparing financial details on its proposal, to meet the information requirements of the Government's established regional development capital contribution, and other assistance programs.

1. In accordance with this Understanding in Principle, the Company shall establish a diversified heavy-industry manufacturing facility in the Bear Head region of Cape Breton, Nova Scotia, which will:

(a) create in Cape Breton a new and diversified activity in the Canadian civilian and defence industrial base, with access to the North American defence markets, under the Canada U.S. Defence Production Sharing Agreement;

(b) transfer to the facility, all technology necessary for the construction of light armoured vehicles, and other heavy-industry products; //

(c) source its requirements co-operatively from, and implement arrangements for joint-venture activities with, the Lavalin (UTDC) heavy-industry facility, in Trenton, Nova Scotia, in accordance with existing agreements between the Company and Lavalin;

(d) to the greatest extent possible, source its requirements from, and promote the establishment of, small business enterprises located in Atlantic Canada;

(e) implement arrangements for co-production with Krauss Maffei, in accordance with existing agreements between the Company and Krauss Maffei, if, under the Main Battle Tank project envisaged by the Government of Canada, Krauss Maffei is selected to manufacture Canada's replacement battlefield tanks; and

(f) employ a minimum of 500 people on a permanent, full-time basis and, where necessary, train these individuals in required skills and knowledge, utilizing, where appropriate, local educational facilities.

* 2. In accordance with this Understanding in Principle, the Government of Canada, in order to facilitate the establishment of the Company's heavy-industry manufacturing activity in Cape Breton, will:

- 3 -

(a) enter into negotiations with the Province of Nova Scotia, in accordance with existing letters to the Company from the Premier of Nova Scotia, to put in place financial arrangements for the co-funding of required physical infrastructure, up to a maximum value of \$27 million, and to use the Strait of Canso Industrial Development Subagreement as a source of funding;

(b) entertain an application by the Company to the Minister of National Revenue for assistance based on eligible project costs up to a maximum of \$68 million, under the provisions of the Cape Breton Investment Tax Credit, in accordance with the formal application for such assistance filed by the Company prior to June 30, 1988;

(c) entertain an application by the Company to the Minister of National Revenue for duty remission on the importation of machinery, parts, and components for the manufacturing of vehicles, under the Machinery and Equipment Tariff Program, consistent with this program at the time of such importation; and

(d) entertain an application by the Company to the Minister of Employment and Immigration for government participatory funding, for initial employee training.

3. In recognition of the need to proceed urgently, the Government of Canada and the Company agree to adopt a two-phased approach to the establishment of the Bear Head facility.

PHASE I

4. The Government of Canada and Company agree that in Phase I, the respective parties will undertake the following:

(a) the Company:

(i) the Company will proceed forthwith with the construction of an initial plant, as described in the document submitted to ACOA in March 1988, requiring an initial capital investment of \$58 million, to manufacture defence products for the North American markets;

- 4 -

(ii) the Company will have submitted a formal application to Enterprise Cape Breton, in advance of June 30, 1988, seeking assistance under the Cape Breton Investment Tax Credit (CBITC); and

(iii) the Company will provide by October 21, 1988, financial and other details associated with Phase I, and, in the shortest time possible thereafter, the remaining information required in order to qualify for assistance under the Defence Industries Productivity Program (DIPP), and other government assistance programs, under which funding is sought.

(b) the Government of Canada:

(i) the ACOA Minister, and the DRIE Minister, will consider assistance to the Company, up to a maximum of fifty (50) percent of eligible project costs, under programs delivered by Enterprise Cape Breton, consistent with these programs at the time the Bear Head project becomes eligible for such assistance.

* (ii) The Minister of National Defence, in recognition of the excellent international reputation for quality and performance earned by Thyssen Industries A.G. in the military vehicle sector, and in the context of the major acquisition program for the upgrading of the Canadian Forces envisaged in the Defence White Paper, will consider the participation of the Company in the Light Armoured Vehicle Procurement Program, envisaged to occur in the early-to-mid 1990's, provided the Company:

(a) develops, designs, and manufactures, in its Cape Breton facility, these vehicles from its entire technology range according to the operational requirements of the Government of Canada,

(b) meets the Government's requirements for quality, delivery, and logistic support, including personnel training,

(c) delivers and performs at internationally competitive prices, and

(d) provides acceptable regional and industrial benefits; and

- 5 -

(iii) the DRIE Minister will consider capital establishment assistance to the Company, under the Defence Industries Productivity Program (DIPP), consistent with this program at the time the Bear Head project becomes eligible for such assistance.

PHASE II

5. The Government of Canada and Company further agree that in Phase II, the respective parties will undertake the following:

(a) the Company:

(i) the Company will proceed not later than twelve (12) months after the commencement of production under Phase I, with diversification into heavy civilian manufacturing production targeted at Canadian and international markets;

(ii) the Company will provide within six (6) months after the commencement of production under Phase I, financial details including product and market projections associated with Phase II; and

(iii) should Phase II not be proceeded with, the Company will reimburse the Government of Canada for:

- (1) assistance as is provided by the ACOA and DRIE Ministers under paragraph 4 b(i) above, and
- (2) a portion, to be determined in subsequent negotiations, of the infrastructure assistance provided under paragraph 2 (a) above, in the event that the planned employment level of 400 people for Phase I is not sustained for 5 years.

(b) the Government of Canada:

the ACOA Minister, and the DRIE Minister, will consider assistance to the Company, under established regional and industrial development programming, consistent with such programs at the time the Bear Head project becomes eligible for such assistance.

6. This Understanding in Principle may be complemented by future Memoranda of Understanding.

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PRESS RELEASE

Bear Head Industries Ltd., a wholly-owned subsidiary of Thyssen Industrie AG of West Germany, one of Germany's largest industrial concerns, is pleased to announce that it will establish Thyssen Industrie AG's major North American base for heavy, high-technology industrial manufacturing in Port Hawkesbury, Nova Scotia.

This new facility in Port Hawkesbury, with a projected initial capital investment by Bear Head Industries of \$58 million, will play an important role in Thyssen's strategy to increase substantially its North American investments and activities. Thyssen is already a major employer in Canada. Bear Head Industries is pleased to make this long-term commitment to the workforce of Eastern Nova Scotia through the establishment of a versatile, state-of-the-art manufacturing facility serving the North American market. This facility will hold North American product mandates for selected Thyssen technologies.

Construction of the new facility will begin in the Spring of 1989, and is expected to be completed by the Fall of 1990. When full production is reached, this facility will employ a minimum of 500 people in the manufacturing of a mix of sophisticated, high-value equipment as North American market opportunities demand. Evaluation of personnel, sub-contractors and training facilities will begin immediately.

Principal products of Thyssen's Bear Head Industries will include:

- environmental plants and processes, including fluidized bed combustion, metal scrappers and waste-water recycling;
- industrial conveyor and transport systems;
- light military vehicles for the Canadian and United States markets; and
- machine tooling, involving the fabrication of Thyssen-developed technology.

This modern, diversified manufacturing facility will bring new strength to the economy of Eastern Nova Scotia. In addition to the 500 full-time employees, it is anticipated that the facility will generate over 800 indirect jobs and encourage new activities and skills among potential sub-contractors. Production will involve the

FINAL

transfer to Canada of many of the internationally-competitive technologies held by Thyssen Industrie AG. The company expects to co-operate actively with industrial training facilities in Eastern Nova Scotia.

Bear Head Industries Ltd. expects that environmental protection equipment will be among the products of the facility most in demand. Bear Head Industries Ltd. hopes to participate in the production of the next generation of light armoured vehicles for the Canadian Forces in the early to mid-1990s. Through an agreement with Lavalin Inc., a portion of the work on any production of light-armoured vehicles for the Canadian Forces obtained by Bear Head Industries would be carried out at the Trenton Works plants in Trenton, Nova Scotia. This will involve important transfers of technology to and diversification of the Trenton Works.

Bear Head Industries also expects to enter the American market for light military vehicles and to perform ongoing upgrading and maintenance work. An immediate opportunity to bid on such an American contract prompts the announcement of these plans at this time. While Bear Head will have full access to U.S. defence markets under the Canada U.S. Defence Production Sharing Agreement, all exports by Bear Head Industries, including those outside of North American, will of course be in full accordance with the Government's policy on export controls.

Thyssen Industrie AG has chosen to base its North American heavy manufacturing capability in Port Hawkesbury because of its excellent location, transportation facilities, workforce and training facilities.

The Corporation began serious consideration of this project in 1985. One year ago, ACOA took on the co-ordination and lead role on the part of the Canadian Government. The result is today's decision to proceed with the project. The assistance and co-operation by the Government of Nova Scotia has contributed throughout to the success of this project.

-30-

For Information
Charles McGuire
(902) 429-7460

27.09.88

ANNOUNCEMENT BY BEAR HEAD INDUSTRIES LIMITED

QUESTIONS AND ANSWERS

PART I

CREDIBILITY OF THE PROJECT?

- West-German-based Thyssen, the parent company of Bear Head Industries, enjoys an excellent reputation, has annual sales exceeding \$30 billion, and employs 130,000 employees world-wide;
- the company is already an excellent corporate citizen in Canada - employing some 2,500 Canadians, mostly in Ontario, and in the steel/metal fabrication industry;
- the proposed heavy-industry facility, would substantially increase the company's presence in Canada; and
- by announcing its intent to come to Cape Breton, Bear Head Industries has taken an important first step towards the establishment of its planned heavy-industry facility.

BENEFITS TO CANADA?

- when the Bear Head project proceeds, 400 full-time, skilled manufacturing jobs will be created right away in Cape Breton. Employment will grow to at least 500 when the diversification into civilian production occurs;
- the Cape Breton heavy-industry project plans to build on the region's existing industrial strengths: Lavalin (at Trenton Works); the Port Hawkesbury vocational institute, and would contribute towards meeting the industrial requirements of Hibernia development; and

.../2

- 2 -

- Bear Head will provide:
 - . access to state-of-the-art German technology,
 - . training and skills development, and
 - . strengthening of Canada's heavy-industry and defence industrial base; and
- the planned project also reaffirms the Government's commitment to meaningful long-term regional development.

FUNDING: HOW MUCH MONEY HAS BEEN PROMISED TO BEAR HEAD INDUSTRIES?

- None. The company understands that once it submits a formal business plan and application for assistance for its heavy-industry facility -- in accordance with established commercial practices, and the Government's policy on major industrial projects -- that its application will be reviewed, and the Government will take a decision; and
- work by the company to assemble the business plan is well underway, and is expected to be available in the fall.

EXPORT CONTROLS?

- while Bear Head will diversify into civilian heavy-industry production, initially the Cape Breton facility expects to produce armoured vehicles for the U.S., Canadian (and possibly NATO) markets; and
- all exports will be in full accordance with the Government's policy on export controls.

.../3

- 3 -

RELATIONSHIP WITH UPCOMING CANADIAN DEFENCE CONTRACTS?

- by coming to Canada, Bear Head Industries will, of course, have the opportunity -- as will other qualified companies -- to compete to participate in meeting the needs of the Canadian Forces;
- the Government will encourage the Bear Head heavy-industry facility to bid on defence projects, in the same manner that the Government welcomes bids from other Canadian and international qualifiers in the Government's competitive procurement process; and
- while the Government is delighted that the Bear Head project is moving forward, there has, of course, been no special treatment promised Bear Head Industries.

WHY DID THYSSEN CHOOSE TO LOCATE IN CANADA?

- excellent access to North American marketplace; and
- based in Canada, the company can participate in the U.S. defence markets under the "Canada-U.S. Defence Production Sharing Agreement".

WHY CAPE BRETON?

- excellent transportation facilities, including access to world trade routes;
- excellent workforce and training facilities;

.../4

- 4 -

- existing industrial and regional development assistance programs; and
- support from Government of Nova Scotia.

WHY IS THE ANNOUNCEMENT BEING MADE NOW?

- Bear Head Industries entered into discussions with the Government three years ago;
- the heavy-industry proposal for Cape Breton was submitted to ACOA in March 1988, and the company and the Government have now reached an understanding on how to proceed; and
- Thyssen must increase its North American presence now, in order to bid for an upcoming U.S. military vehicle contract.

NEXT STEPS?

- Bear Head Industries will develop a formal business plan and application as required prior to being considered under the Government's existing regional development programming; and
- upon receiving Thyssen's application, the Government will reach a decision on funding for the heavy-industry facility, in accordance with existing program guidelines, as it would for any other first-class major industrial proposal.

ANNOUNCEMENT BY BEAR HEAD INDUSTRIES LTD.

QUESTIONS AND ANSWERS

PART II

QUESTIONS TO BE ANTICIPATED:

Question One

a) How solid is the project?

A. Construction of the facility will proceed unless there are major unforeseen circumstances that we do not visualize at this time.

b) Is the commencement of this facility dependent on the successful passage of the free trade agreement?

A. Construction is not dependant on passage of the free trade agreement although the company presumes that future sales to the U.S. would be enhanced by that measure.

c) What product for what market will provide the most work for this facility?

A. It is intended to achieve a balance of commercial and military sales through production and marketing diversification. We will focus in those areas listed in our press release.

Question Two

a) Among products to be produced at this facility, what will be the mix in terms of civilian and military products?

A. Any product mix will always be dependant on market forces. In the initial stages, a 50% percentage would be desirable.

b) Is the future of this facility dependent on military orders?

A. No.

c) Do you foresee that this facility will still be in operation in 10 years if no military orders are obtained?

A. Yes

Question Three

a) Has the Department of National Defence given any guarantees or commitments of any type that it will order vehicles from this facility?

A. There is no guarantee of a DND vehicle order. The company, however, clearly anticipates that the establishment

of a production facility which can draw directly Thyssen-Henschel's internationally recognized capability will make Bear Head Industries a significant player in any DND armoured vehicle program. //

Question Four

a) How significant to the future of this facility are potential US orders for military vehicles?

A. Given the size of projected US military vehicles programs, Bear Head is very interested in the potential of that market. Participation would likely be through production-sharing with a US-based partner.

b) Are potential American orders more significant than potential Canadian orders?

A. No. We hope Canadian orders will be as significant as American ones.

Question Five

a) Are there any plans to export military vehicles outside North America and in particular, to the Middle East?

A. There are NO plans to export military vehicles to the Middle East from Bear Head Industries production nor are there presently any other export intentions outside North America. Should opportunities develop later to supply vehicles to overseas customers, then the Canadian government would be advised through the normal procedures. We should point out that most foreign sales are done on a government to government basis, and all foreign sales are subject to Canadian Export Controls..

b) What is the attitude of the Department of External Affairs towards the establishment of your company in Canada?

A. To the best of our knowledge, External Affairs has not indicated any objection to the establishment of the Bear Head Industries facility.

Question Six

a) Why is this announcement being made now with the federal election announcement being made soon?

A. Bear Head Industries has been pursuing this initiative for several years and has filed an application to ACOA in March 1988. A decision has now been taken, purely on

commercial grounds. No political pressure has been applied at any time. The overriding decision for the establishment of Bear Head Industries are civil and military product opportunities in North America. Among other opportunities, a U.S. military vehicle opportunity is pending. It was these factors which led to the corporate decision to establish in Canada.

Question Seven

- a) Why is the government not participating in this announcement?
- b) Does the government not wish to take credit for this project at this point?
- c) Does this announcement not represent interference in Canadian politics by a foreign multinational?
- d) Is this not a pre-election barrel project to hold Lawrence O'Neil's seat?

A. to the above - Thyssen cannot speak for the government nor usefully speculate on their intention. As previously stated, this is a commercially driven initiative.

Question Eight

- a) Why did the company choose to locate this facility in Cape Breton?

A. Port Hawkesbury was selected because of its prime location - a deep harbour facility and existing adjacent infrastructure - and also because of the various government incentive programs that are applicable to this part of the country.
- b) Is the labour force in Port Hawkesbury large enough to staff this facility?

A. A study of available data indicated that an appropriate labour force can be drawn from Port Hawkesbury and neighbouring areas.

Question Nine

- a) Will this facility create new work for Sydney Steel?

A. If Sydney Steel is capable of producing the materials required by Bear Head Industries production, then they will be in an advantageous position to become a regular and

preferred supplier. The normal commercial considerations of quality and price will, of course, apply.

Question Ten

a) Why has the company made a work-sharing agreement with Lavalin and what has Lavalin offered in return?

A. We wished to have a first class Canadian partner and Lavalin fitted that objective. The work-sharing agreement has the objective of maintaining employment stability at both Bear Head and Trenton through co-production and sub-contractual arrangements.

Question Eleven

a) What is the attitude of the company toward the labour unions of Cape Breton and will the facility be unionized and if so, by whom?

A. Thyssen recognizes the great importance of sound and harmonious employee-management relations and intends to establish a working environment based on mutual benefit and respect.

Question Twelve

a) Are there presently any firm orders for products to be manufactured at the facility?

A. Obviously, it is not possible to have firm orders before a decision is first made to establish a manufacturing facility. That decision has now been taken, and we are confident, based upon our knowledge of market opportunities and our manufacturing experience, that this venture will be a success.

Question Thirteen

a) What government programs have Thyssen availed of and for what amounts?

A. No money has been promised to Bear Head Industries. Bear Head will be proceeding with formal applications for government assistance in accordance with existing programs.

b) What is the potential maximum total contribution of the

government?

A. That cannot be established until conclusion of the application process.

c) What is the maximum and minimum potential contribution of the company?

A. The minimum is estimated at 58 Million. There is no maximum.

d) Does this location make sense purely in economic terms or is it dependent on high levels of regional government financing?

A. Both the commercially strategic location and the existing programmes make the site attractive.

Question Fourteen

a) Did Thyssen retain Government Consultants International and what role did they play?

A. GCI was one of many consultants hired by Bear Head on this project. They, along with others, have provided Bear Head with advice and research. Occasionally, upon instruction by Bear Head, they have communicated the company's position to Canadian business persons as well as provincial and federal officials. At all important times, Bear Head made its own representations.

318 ARMoured PERSONNEL CARRIERS / Germany (Federal)

Armoured Combat Vehicle Family

Development

Details of this range of armoured vehicles, developed as a private venture by Krauss-Maffei and Diehl and shown for the first time in mid-1986, are given in the *Armoured fighting vehicles families* section.

Transportpanzer 1 (Fuchs) Armoured Personnel Carrier

Development

In 1964 the West German Ministry of Defence examined its requirements for a new generation of military vehicles for the 1970s. This generation was to have included an 8 x 8 armoured amphibious reconnaissance vehicle, 4 x 4 and 6 x 6 armoured amphibious load carriers and a complete range of 4 x 4, 6 x 6 and 8 x 8 tactical cargo trucks, some of which were to be amphibious. All were to share many common components which would, where possible, be from commercial sources both to reduce costs and simplify procurement of spare parts.

In 1964 a Joint Project Office was formed to undertake development of the complete range of vehicles. Companies in the Joint Project Office were Büssing, Klöckner-Humbolt-Deutz, Friedrich Krupp, MAN and Rhein Stahl-Henschel. Daimler-Benz did not join the Joint Project Office but went ahead on its own to develop a similar range of vehicles which were finally chosen.

After severe and extensive trials the 8 x 8 armoured amphibious reconnaissance vehicle became the Spähpanzer Luchs and 408 vehicles were built by Rhein Stahl Wehrtechnik between 1975 and 1978. The 4 x 4, 6 x 6 and 8 x 8 tactical trucks were built by MAN and all were delivered to the Federal German Army by 1980. The 4 x 4 armoured amphibious load carrier became the Transportpanzer 2 and the 6 x 6 armoured amphibious load carrier became the Transportpanzer 1. The Transportpanzer 2 was not placed in production but further development was undertaken by EWK and the eventual result was the APE Amphibious Engineer Reconnaissance Vehicle described in *Jane's Armour and Artillery* 1985-86 pages 186 to 187.

In 1977 Rhein Stahl Wehrtechnik (now Thyssen Henschel), under licence from Daimler-Benz, was awarded a production contract for 996 Transportpanzer 1 vehicles for delivery from 1979 at the rate of 160 vehicles per year. The first production vehicle was handed over to the West German Army, which also calls the vehicle the Fuchs, in December 1979. Deliveries of the Transportpanzer were completed in late 1986. Major sub-contractors to the company were Daimler-Benz (axles, engine and steering), Jung (hull) and Zahnradfabrik Friedrichshafen (transmission).

The Transportpanzer is used by the West German Army in the following roles:

RASIT Radar

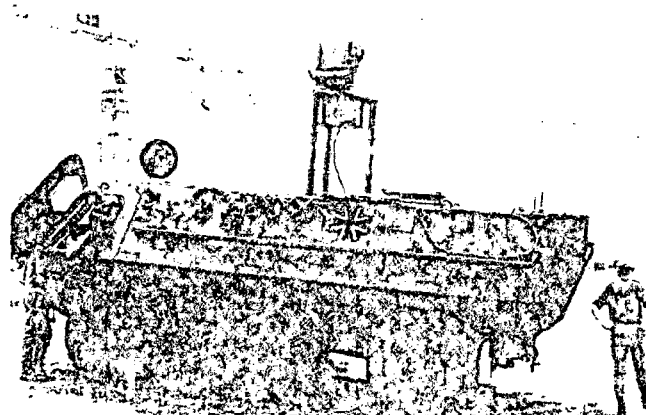
This model is fitted with the RASIT battlefield surveillance radar (radar unit, target tracking and locating unit and radio) manufactured by LMT of France. The radar is mounted in the forward part of the hull and when operating is raised hydraulically to a maximum height of 1.8 metres above the vehicle's roof. A 30-metre cable allows remote operation of the system. This model is known in the West German Army as the Panzer aufklärungsradargerät, or PARA for short, and 110 were built.

Command and Communications Vehicle

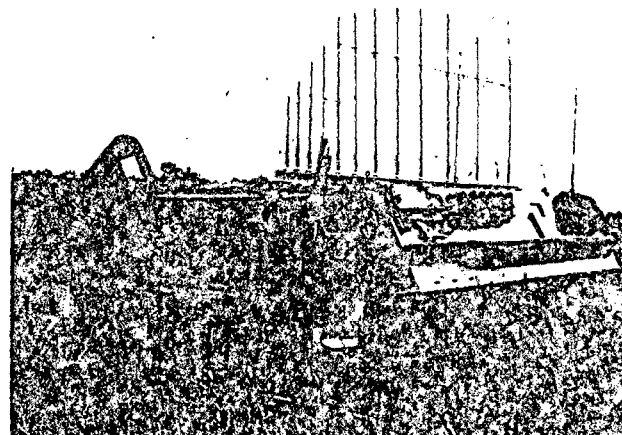
One hundred and thirty-four of these were built under the designation of Fufu. This model has a 5 kW generator in the left wing of the rear door, fuel being supplied from the main tank, communications equipment, map board, two folding tables with personnel lamps, three folding seats and a box with a padded seat. Up to four antennas can be fitted, including a very high one at the right rear of the hull.

NBC Reconnaissance Vehicle

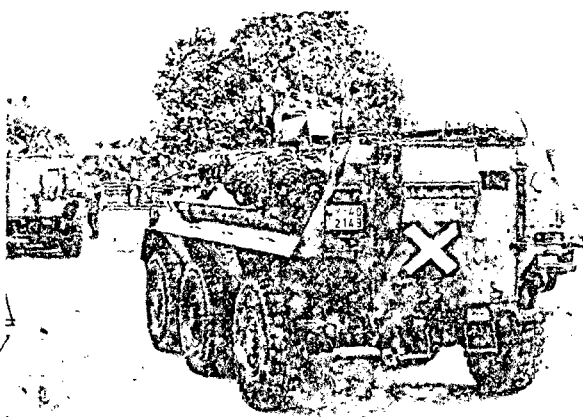
One hundred and forty of these were built. The NBC detection equipment includes radiation and chemical agent detection units, sampling instruments and markers. All operations are carried out inside the vehicle which gives protection against NBC agents. The West German Army designation for this vehicle is the ABC Erkundungsgruppe (ABC-ErkGrp).



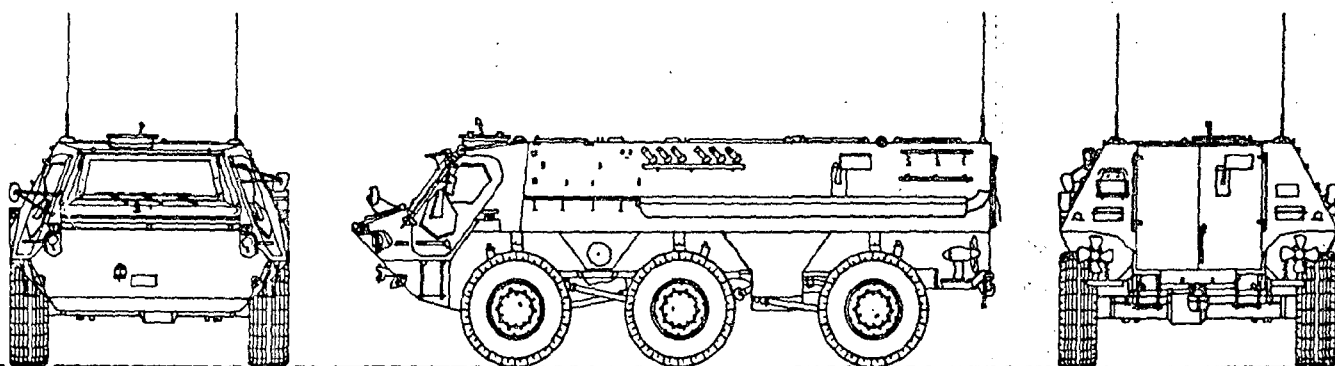
Transportpanzer 1 with RASIT battlefield surveillance radar raised (C R Zwart)



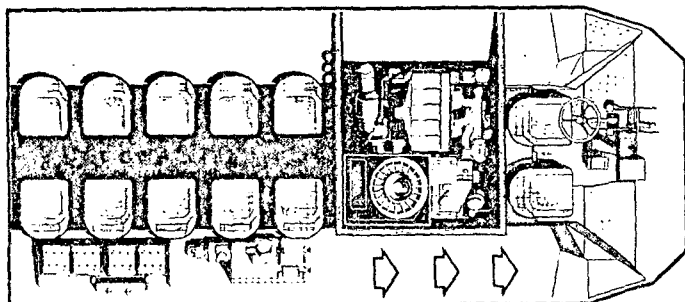
Command and communications variant of Transportpanzer 1 as used by West German Army



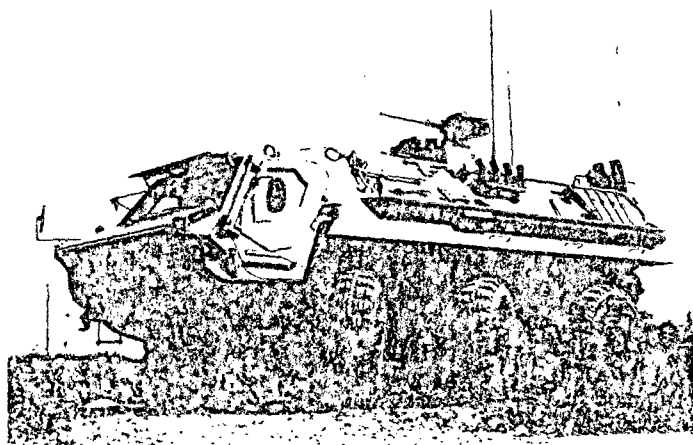
Command and communications version of Transportpanzer 1 from rear showing two propellers (Pierre Touzin)



Transportpanzer 1 without armament



Transportpanzer 1 showing internal seating arrangements (not to 1/16th scale)



Transportpanzer 1 as delivered to Venezuela in 1983 armed with 12.7 mm and 7.62 mm machine guns

Engineer Vehicle

Two hundred and twenty of these are used by combat engineers and to carry mines, demolition equipment and other specialised equipment.

Electronic Warfare

This model, known as the TPz 1 Eloka, is fitted with the EK 33 jammer kit. Unlike other models of the Transportpanzer it has no amphibious capability, only one roof hatch and a 15 kW generator to provide power for the extensive electronic warfare system installed.

Supply Carrier

Two hundred and twenty vehicles have been issued to supply units for use in the forward area. It can also be used as an ambulance, carrying four stretcher patients or two stretcher and four sitting patients.

Description

The all-welded steel hull of the Transportpanzer 1 protects the crew from small arms fire and shell splinters. The hull has a rhomboid cross section and incorporates spaced armour in certain areas.

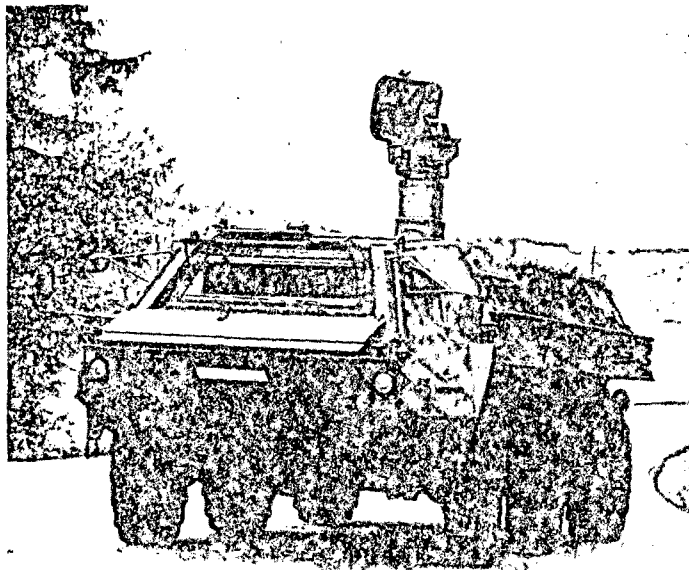
The driver sits at the front of the hull on the left with the vehicle commander to his right. A large bullet-proof windscreen to their front can be covered by an armoured shutter hinged at the top when in action. Four periscopes are fitted in the roof of the vehicle to the front of the driver's hatch for use when the windscreen is covered by the armoured shutter, the centre one of which can be replaced by a passive periscope for driving at night. The commander has a circular roof hatch, which opens to the left rear. Both the driver and commander have a door in the side of the hull with an integral window that can be covered by a shutter in a combat area.

The engine compartment behind the driver and commander is provided with an automatic fire-extinguishing system. There is a small passage on the right side between the front of the vehicle and the passenger/cargo area at the rear. The air-inlet and air-outlet louvres are in the roof of the vehicle with the exhaust pipe running along the left side of the hull.

The powerpack consists of an eight-cylinder Mercedes-Benz OM 402A exhaust turbo-charged diesel developing 320 hp and a six-speed planetary gear torque converter transmission on the side of the engine and connected to it by spur gearing. Above the engine are the air cleaner system and the cooling system, with a hydraulically-driven fan above the transmission. Attached to the powerpack are the vehicle parking brake, 5 kW alternator, brake supply system and hydraulics, including the oil supply reservoir.

The powerpack can be removed in about ten minutes as all disconnecting points on the powerpack for mountings, functionally connected shafts for automotive and amphibious devices, pneumatic, hydraulic and electric supply or control lines are designed as quick-disconnect points. The engine of the Fuchs can be run outside the vehicle for test purposes.

The troop/cargo compartment is at the rear of the vehicle and is 3.2 metres long, 1.25 metres high and 2.5 metres wide at its widest point. In each side of the hull is a small vision port protected by an armoured shutter. There are three hatches in the roof of the troop compartment: a large



Transportpanzer 1 with RATA-S radar elevated

one-metre circular one in the forward part on which the main armament is normally mounted, a single-piece hatch cover to the rear of the first one on the right side which opens to the left, and to the rear and left of the second hatch is the third one which opens to the right.

The ten infantrymen are seated on individual bucket seats, five down each side of the hull. The seats can be folded up to enable cargo to be carried. Normal means of entry for the infantrymen is through two large doors in the rear of the hull. The right door has a vision port covered by an armoured shutter when not in use.

Nominal amphibious payload is 2000 kg but in the non-amphibious mode it can carry up to 4000 kg of cargo.

Steering is hydraulically assisted on the front four wheels. An electrically-driven back-up pump automatically maintains the supply of hydraulic fluid to the steering box and propellers in case of hydraulic failure. The rigid axles incorporate hub-mounted planetary gears and are positioned by guide rods supported by progressively acting coil springs. All axles have differential lock ups and hydraulic shock absorbers. The tyres are of the run-flat type.

The Transportpanzer 1 is fully amphibious being propelled in the water by two Schottel four-bladed propellers beneath the floor level of the vehicle at the rear of the hull. For steering when afloat the propellers can be traversed through 360 degrees. Before entering the water a trim vane, which is stowed on the glacis plate when travelling, is hydraulically erected at the front of the hull. The three bilge pumps each have a capacity of 180 litres per minute.

An NBC system, fitted as standard, can also be used to ventilate the crew and personnel compartments. Armament varies according to mission requirements but can consist of a 7.62 mm MG 3 machine gun mounted over the commander's position or a 20 mm Rheinmetall cannon mounted on a Keller and Knappich E-6 ring mount over the first circular roof hatch. The 7.62 mm machine gun has an elevation of +40 degrees and a depression of -15 degrees. The 20 mm cannon has an elevation of +75 degrees with depression being determined by a contour limiter, and 150 rounds of ready-use ammunition are provided. All vehicles have six smoke dischargers mounted on the left side of the hull firing forwards.

Electronic Trials Vehicles

In 1987 a number of Transportpanzer 1s were being used for various electronics trials. One has been fitted with the Siemens HELAS electronic warfare system with the sensors mounted on a hydraulic arm that is raised above the vehicle when operating. It has also been used for trials of the SEL RATA-S target acquisition and surveillance system.

Variants

In 1985 a contract was signed between Thyssen Henschel and GLS outlining the responsibilities of both firms. Thyssen Henschel, being the manufacturer of the TPz-1, would act also as prime contractor whereas GLS as partner would perform the after sales service and spare parts support.

In 1983 Venezuela placed an order for ten Transportpanzer 1s which were delivered in September that year. These vehicles did not have the standard NBC system installed but had smoke dischargers, an 8000 kg capacity winch, an air-conditioning system and two roof-mounted weapon systems. To the rear of the engine compartment is a KUKA turret with an externally-mounted 12.7 mm machine gun while behind this and facing the rear is a Wegmann 11/1 mount with a shield and a 7.62 mm machine gun. These vehicles have full amphibious capability.

The Rheinmetall 105 mm Super Low Recoil gun has been successfully tested on the MC 601 chassis, a derivative of the Transportpanzer 1 (6 x 6) vehicle.

320 **ARMoured PERSONNEL CARRIERS / Germany (Federal)**

Export vehicles will not have the extensive range of equipment fitted as standard to vehicles of the West German Army and GLS is therefore offering the following equipment as options: 12 000 Kcal/hour heater, induction warming device, NBC system with an output of three cubic metres a minute, Teldix FNA vehicle navigation system, six electrically-operated launcher cups for smoke or fragmentation grenades on both sides of the hull, 5000 Kcal/hour air-conditioning system with two evaporators, automatic fire-extinguishing system, intercom system with external and internal telephones, passive night vision equipment for the driver, trailer coupling, non-skid chains, self-recovery winch and a maximum of six ball mounts to enable the crew to use their small arms from inside the vehicle.

Export Variants

Armoured mortar carrier with hull-mounted 81 mm mortar or towing 120 mm mortar.

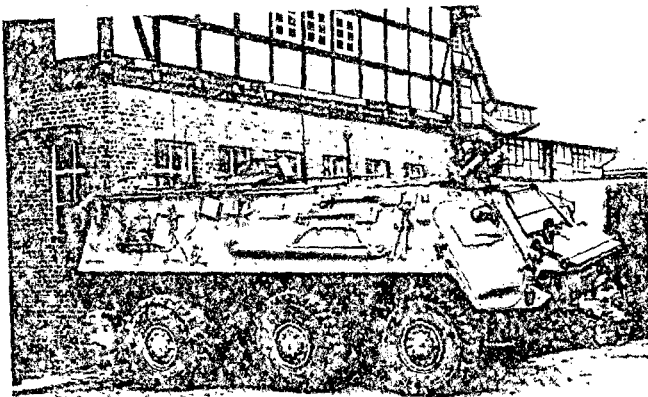
Armoured missile launcher with turret-mounted TOW, HOT or MILAN ATGWs.

Armoured support vehicle for use in a variety of roles such as ambulance, cargo, recovery and maintenance.

Armoured infantry fighting vehicle with various armament options including 20 or 25 mm cannon with the option of a 7.62 mm remote-controlled machine gun over the rear part of the troop compartment.

Components of the Transportpanzer 1 (6 × 6) vehicle are used as the basis for the Wildcat armoured anti-aircraft truck for which there is a separate entry in the *Self-propelled anti-aircraft guns and surface-to-air missiles* section.

The chassis of the Wildcat can also be fitted with other armament installations. For trials purposes the chassis has already been fitted with a two-man turret fitted with a Cockerill 90 mm Mark III gun and coaxial 7.62 mm machine gun.



West German Army Transportpanzer 1 with 7.62 mm machine gun over forward part of roof (Michel C Klaver)

Status: Production completed late 1986 but can be resumed if further orders are received. In service with Federal German Army and Venezuela.

Manufacturer and prime contractor: Thyssen Henschel, Postfach 102969, D-3500 Kassel, Federal Republic of Germany.

After sales service support: GLS, Postfach 500231, D-8000 Munich 50, Federal Republic of Germany.

SPECIFICATIONS		WHEELBASE	1.75 m + 2.05 m	TRANSMISSION	ZF model 6 HP 500
	CREW	2 + 10*			6-speed automatic with torque converter
CONFIGURATION	6 × 6	ANGLE OF APPROACH/ DEPARTURE	45°/45°	STEERING	hydraulic, recirculating ball
COMBAT WEIGHT	17 000 kg	MAX SPEED	105 km/h	TYRES	14.00 × 20
UNLOADED WEIGHT	14 200 kg	road	10.5 km/h	BRAKES	air-assisted, dual circuit
POWER-TO-WEIGHT		water	390 litres	main	spring-loaded acting on gearbox output shaft
RATIO	18.82 hp/tonne	FUEL CAPACITY	800 km	parking	24 V/250 Ah
LENGTH	6.76 m	MAX ROAD RANGE	70%	ELECTRICAL SYSTEM	4 × 12 V, 125 Ah
WIDTH	2.98 m	FORDING	8.5 m	BATTERIES	1 × 20 mm cannon or
HEIGHT		GRADIENT	Mercedes-Benz model	ARMAMENT	1 × 7.62 mm MG
(to hull top)	2.3 m	TURNING RADIUS	OM 402A V-8		
GROUND CLEARANCE		ENGINE	liquid-cooled diesel	SMOKE-LAYING EQUIPMENT	6 smoke dischargers
axles	0.406 m		developing 320 hp at 2500 rpm		
hull	0.506 m				
TRACK					
front	2.54 m				
rear	2.56 m				

* Maximum is 14 for export vehicles

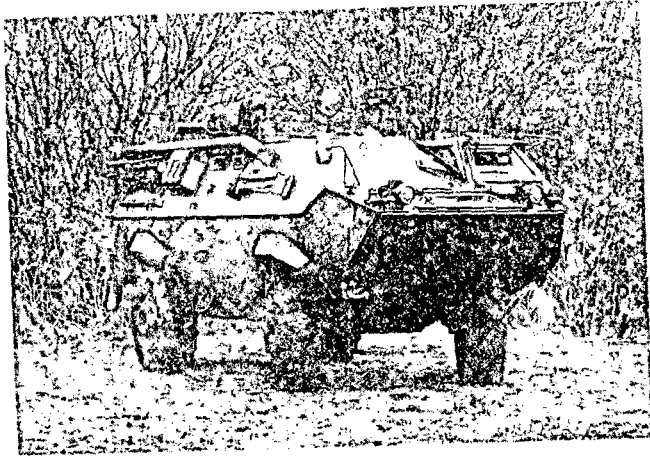
HWK 11 Armoured Personnel Carrier

Forty of these vehicles were built by Henschel-Werke between 1964 and 1965 and these remain in service with the Mexican Army. Full details were given in *Jane's Armour and Artillery 1983-84*, pages 302-303.

Condor Armoured Personnel Carrier

Development

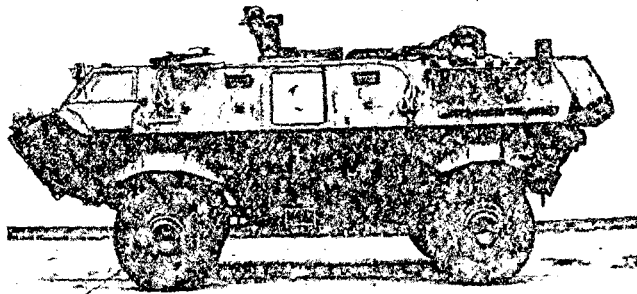
The Condor has been developed as a private venture by Thyssen Henschel as a successor to its UR-416 armoured personnel carrier. Main improvements over the earlier vehicle can be summarised as: increased road speed and load carrying capacity, improved ballistic protection, and its being fully amphibious. Although designed primarily as an armoured personnel carrier, the vehicle can also be adopted for a wide range of other roles including anti-tank, cargo carrier, command vehicle, ambulance, fitters' vehicle and reconnaissance vehicle.



Condor armoured recovery vehicle in travelling configuration

The first prototype was completed in 1978 and the vehicle is now in production. Wherever possible, standard automotive components have been used in the design of the Condor, both to reduce costs and to enable spare parts to be obtained from a commercial source.

Late in 1981 Thyssen Henschel was awarded a contract by the Malaysian Government for 459 Condor armoured personnel carriers, the last of these was completed in March 1984. Some of the Malaysian Condors were fitted with a British Helio Mirror FVT 900 one-man turret armed with an Oerlikon 20 mm cannon and variants included an ambulance twin 7.62 mm machine gun, fitters' vehicle with a crane and a command post vehicle.



Condor ambulance with mounting for 7.62 mm machine gun on roof but without weapon

UNDERSTANDING IN PRINCIPLE

This document signed this 27 day of September, 1988,
between:

THE GOVERNMENT OF CANADA, as
represented by:

i) the Minister responsible for
the Atlantic Canada Opportunities
Agency (hereinafter called "the
ACOA Minister"),

ii) the Minister of Regional
Industrial Expansion (hereinafter
called "the DRIE Minister"), and

iii) the Minister of National
Defence (hereinafter called "the
National Defence Minister"); and

BEAR HEAD INDUSTRIES LTD., a
company incorporated under the
laws of Nova Scotia, a subsidiary
which is one hundred (100%)
percent owned by Thyssen
Industries A.G. of the Federal
Republic of Germany (hereinafter
called "the Company").

WHEREAS the Government of Canada desires
to foster the economic expansion and industrial
development of Cape Breton;

WHEREAS the Company must have in place a
North American heavy-industry manufacturing facility on
an urgent basis, and desires to establish such a
facility in the Bear Head peninsula region of Cape
Breton;

WHEREAS the Government of Canada
recognizes that the proposed Bear Head facility
represents an important economic development and
diversification of the industrial base of Cape Breton;
and

- 2 -

WHEREAS the Company is preparing financial details on its proposal, to meet the information requirements of the Government's established regional development capital contribution, and other assistance programs.

1. In accordance with this Understanding in Principle, the Company shall establish a diversified heavy-industry manufacturing facility in the Bear Head region of Cape Breton, Nova Scotia, which will:

(a) create in Cape Breton a new and diversified activity in the Canadian civilian and defence industrial base, with access to the North American defence markets, under the Canada U.S. Defence Production Sharing Agreement;

(b) transfer to the facility, all technology necessary for the construction of light armoured vehicles, and other heavy-industry products;

(c) source its requirements co-operatively from, and implement arrangements for joint-venture activities with, the Lavalin (UTDC) heavy-industry facility, in Trenton, Nova Scotia, in accordance with existing agreements between the Company and Lavalin;

(d) to the greatest extent possible, source its requirements from, and promote the establishment of, small business enterprises located in Atlantic Canada;

(e) implement arrangements for co-production with Krauss Maffei, in accordance with existing agreements between the Company and Krauss Maffei, if, under the Main Battle Tank project envisaged by the Government of Canada, Krauss Maffei is selected to manufacture Canada's replacement battlefield tanks; and

(f) employ a minimum of 500 people on a permanent, full-time basis and, where necessary, train these individuals in required skills and knowledge, utilizing, where appropriate, local educational facilities.

2. In accordance with this Understanding in Principle, the Government of Canada, in order to facilitate the establishment of the Company's heavy-industry manufacturing activity in Cape Breton, will:

- 3 -

(a) enter into negotiations with the Province of Nova Scotia, in accordance with existing letters to the Company from the Premier of Nova Scotia, to put in place financial arrangements for the co-funding of required physical infrastructure, up to a maximum value of \$27 million, and to use the Strait of Canso Industrial Development Subagreement as a source of funding;

(b) entertain an application by the Company to the Minister of National Revenue for assistance based on eligible project costs up to a maximum of \$68 million, under the provisions of the Cape Breton Investment Tax Credit, in accordance with the formal application for such assistance filed by the Company prior to June 30, 1988;

(c) entertain an application by the Company to the Minister of National Revenue for duty remission on the importation of machinery, parts, and components for the manufacturing of vehicles, under the Machinery and Equipment Tariff Program, consistent with this program at the time of such importation; and

(d) entertain an application by the Company to the Minister of Employment and Immigration for government participatory funding, for initial employee training.

3. In recognition of the need to proceed urgently, the Government of Canada and the Company agree to adopt a two-phased approach to the establishment of the Bear Head facility.

PHASE I

4. The Government of Canada and Company agree that in Phase I, the respective parties will undertake the following:

(a) the Company:

(i) the Company will proceed forthwith with the construction of an initial plant, as described in the document submitted to ACOA in March 1988, requiring an initial capital investment of \$58 million, to manufacture defence products for the North American markets;

- 4 -

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(ii) the Company will have submitted a formal application to Enterprise Cape Breton, in advance of June 30, 1988, seeking assistance under the Cape Breton Investment Tax Credit (CBITC); and

(iii) the Company will provide by October 21, 1988, financial and other details associated with Phase I, and, in the shortest time possible thereafter, the remaining information required in order to qualify for assistance under the Defence Industries Productivity Program (DIPP), and other government assistance programs, under which funding is sought.

(b) the Government of Canada:

(i) the ACOA Minister, and the DRIE Minister, will consider assistance to the Company, up to a maximum of fifty (50) percent of eligible project costs, under programs delivered by Enterprise Cape Breton, consistent with these programs at the time the Bear Head project becomes eligible for such assistance.

(ii) The Minister of National Defence, in recognition of the excellent international reputation for quality and performance earned by Thyssen Industries A.G. in the military vehicle sector, and in the context of the major acquisition program for the upgrading of the Canadian Forces envisaged in the Defence White Paper, will consider the participation of the Company in the Light Armoured Vehicle Procurement Program, envisaged to occur in the early-to-mid 1990's, provided the Company:

(a) develops, designs, and manufactures, in its Cape Breton facility, these vehicles from its entire technology range according to the operational requirements of the Government of Canada,

(b) meets the Government's requirements for quality, delivery, and logistic support, including personnel training,

(c) delivers and performs at internationally competitive prices, and

(d) provides acceptable regional and industrial benefits; and

- 5 -

(iii) the DRIE Minister will consider capital establishment assistance to the Company, under the Defence Industries Productivity Program (DIPP), consistent with this program at the time the Bear Head project becomes eligible for such assistance.

PHASE II

5. The Government of Canada and Company further agree that in Phase II, the respective parties will undertake the following:

(a) the Company:

(i) the Company will proceed not later than twelve (12) months after the commencement of production under Phase I, with diversification into heavy civilian manufacturing production targeted at Canadian and international markets;

(ii) the Company will provide within six (6) months after the commencement of production under Phase I, financial details including product and market projections associated with Phase II; and

(iii) should Phase II not be proceeded with, the Company will reimburse the Government of Canada for:

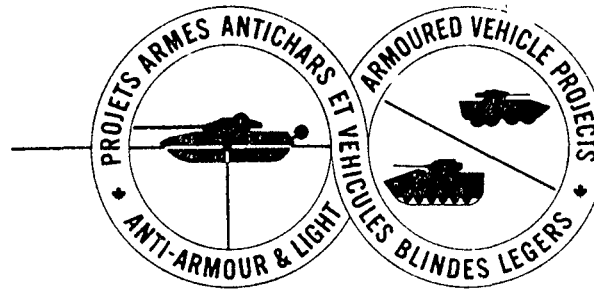
- (1) assistance as is provided by the ACOA and DRIE Ministers under paragraph 4 b(i) above, and
- (2) a portion, to be determined in subsequent negotiations, of the infrastructure assistance provided under paragraph 2 (a) above, in the event that the planned employment level of 400 people for Phase I is not sustained for 5 years.

(b) the Government of Canada:

the ACOA Minister, and the DRIE Minister, will consider assistance to the Company, under established regional and industrial development programming, consistent with such programs at the time the Bear Head project becomes eligible for such assistance.

6. This Understanding in Principle may be complemented by future Memoranda of Understanding.

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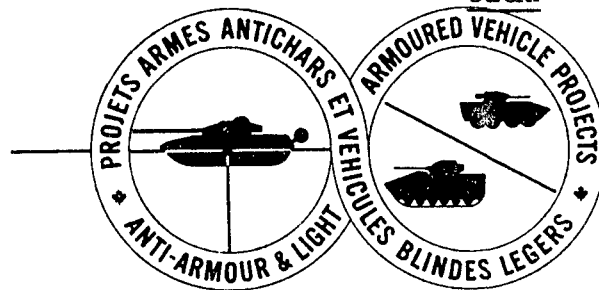
AIDE MEMOIRE - PROPOSAL FROM BEAR HEAD INDUSTRIES

1. Further to my minute sheet of 13 Sep 88 covering the proposed Understanding-in-Principle between Bear Head Industries and the Government, I have recently been handed a copy of the attached Aide Mémoire prepared by ACOA for the Ministers of Cabinet Ops and other Cabinet Committees as appropriate.
2. As was the case with the drafting of the Understanding-in-Principle, PMO AALAV had no input in the drafting of the Aide Mémoire.
3. Signature of the Understanding-in-Principle will certainly commit the Government politically, if not legally. We are still pursuing the development of the procurement strategy for Project L2065 - LAV without considering the existence of the Understanding-in-Principle.

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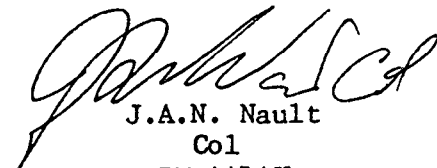


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4. A briefing of CEM, CS and CLDO, by PM AALAV, on the concerns expressed by DSS and ISTC senior management on the LAV procurement strategy, has been convened for 1430 hrs, 3 Oct 88 in Conf Room C, 13 ST.


J.A.N. Nault
Col
PM AALAV
995-2794

26 Sep 88

Enclosure: 1

DISTRIBUTION LIST

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Atlantic Canada
Opportunities Agency

Agence de promotion économique
du Canada atlantique

To: *Harry Webster DSS*
Pour: *Harry Webster DSS*

Date: *19/9/88*

Subject:
Objet:

*Copy for M. Desjardins
for info MW 22/9*

From: *McDonnell*
De: *McDonnell*

Via:

DIRECTOR GENERAL
AMES

SEP 20 1988

2395

DIRECTEUR GÉNÉRAL
SAME

☐ Your Signature
☐ Votre Signature

☐ For Comments
☐ Observations

☒ Information

☐ Material for the Minister
☐ Documents pour le Ministre

Remarks:
Remarques:

Harry:
This is where we're coming out.
The item is to be discussed at
Op's. If you have any difficulties/question
please let me know.

c.c.

Regards

Ad McDonnell

Drafting officer:
Rédacteur:

*Copy (aug 1988) for Archambault/please
Held for HTA?*

AOA 30 (88-03)

SECRET

Aide Mémoire,

Aide Mémoire

A PROPOSAL BY BEAR HEAD
INDUSTRIES TO ESTABLISH
A HEAVY MANUFACTURING
FACILITY IN CAPE
BRETON

PROPOSITION DE LA BEAR
HEAD INDUSTRIES POUR LA
FABRICATION DE PRODUITS
DE L'INDUSTRIE LOURDE
AU CAP-BRETON

September 19, 1988

le 19 septembre 1988

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SECRET

AIDE MÉMOIRE

PURPOSE: To develop an appropriate response by the Government of Canada to the proposal by Bear Head Industries Limited, (a subsidiary of Thyssen) to establish a heavy-industry manufacturing facility in Cape Breton, which would support the region's economic development.

PROPOSAL: Thyssen Industries AG, based in the Federal Republic of Germany, is one of the world's largest industrial manufacturing companies with annual sales exceeding \$30 billion, and 130,000 employees world wide. Of Thyssen's annual sales, less than 5% are in the defence sector.

In Canada, Thyssen's holdings include:

- Budd Canada Inc., Kitchener (automobile parts);
- Northern Elevator Holdings Ltd., Toronto (elevators);
- Greening Donald Co. Ltd., Hamilton (metal fabrication);
- Thyssen Marathon Canada Ltd., Mississauga (steel importers); and
- Thyssen Canada Ltd., Rexdale (steel importers).

In all, Thyssen employs some 3,000 Canadians.

In the U.S., the company has recently reached an agreement with General Dynamics concerning technology sharing for the production of light armoured vehicles for the U.S. military, further increasing Thyssen's existing North American commitment.

In 1985, the then DRIE Minister during a visit to Germany, requested that Thyssen submit a proposal to establish a manufacturing facility in Cape Breton. In March 1988, Thyssen submitted a revised proposal to the Government, through ACOA, to establish an \$85 million heavy-industry manufacturing facility at Bear Head, Cape Breton.

The initial capital cost of the facility would be \$58 million, assisted by the federal (and possibly the provincial) government in accordance with existing programs and guidelines. A further \$27 million for common-user infrastructure would be provided by the federal and the provincial governments. Thyssen would work closely in its production and subcontracting requirements with Lavalin (through the Trenton Works facility), possibly Sysco (to source its steel requirements), and Krauss Maffei, if the latter is successful in supplying DND with main battle tanks. Formal undertakings in support of these work-sharing arrangements are in place.

Thyssen proposes to establish the Bear Head facility in two phases:

- Phase I, the production of military vehicles for the North American defence market; and
- Phase II, diversification, within twelve months, into civilian production.

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SECRET

The exact product mix, and markets, associated with Phase II are currently being discussed with Thyssen, and the company is preparing a formal business plan for Phase II. Thyssen has consistently maintained that Phase I is a necessary launching pad for ultimate diversification into civilian production, and the company is willing to commit to repay portions of government funds received under Phase I, should Phase II not proceed.

THE UNDERSTANDING IN PRINCIPLE: The attached Understanding in Principle is not a formal Memorandum of Understanding (MOU), but instead, has been prepared to set out the nature of discussions to date. This document is required to initiate a decision from Thyssen's Board of Directors to proceed in Cape Breton. To this end, it is desirable that this document be signed by the ACOA Minister, the DRIE Minister, and the DND Minister.

While the Understanding in Principle formally binds neither the Government nor Thyssen in a manner which the other side would wish, the company is cited to be considered for participation in the light armoured vehicle project (part of the Government's projected modernization of the Canadian Forces, envisaged by DND to proceed in the early-to-mid 1990s), provided the company meets the Government's technical, operational and industrial/regional benefits requirements.

Since the Prime Minister's direction to Senator Murray in June 1987, to evaluate and report back on the Thyssen proposal, senior ACOA officials, in consultation with officials of DRIE, DND, and on occasion, PCO, Finance, Justice, and External Affairs, have met with Thyssen at length and developed further the company's heavy-industry proposal. Although Thyssen had originally sought a directed contract from the Government to provide DND with 250 LAVs in the early 1990s, the company has softened considerably its position, and is now willing to proceed with the heavy-industry facility on the basis of established government regional and industrial development assistance, and on the understanding that it will be considered for participation in the LAV program.

From the Government's perspective, the heavy-industry proposal for Cape Breton offers very considerable benefits, including technology transfer, to a particularly underdeveloped region of Canada. The Cape Breton plant would also pursue shared production and sourcing arrangements with Lavalin (at Trenton), and is ideally positioned to supply heavy-industry requirements of Hibernia.

At this point, Thyssen will commit to establishing a facility which would employ a minimum of 400 people. Employment is expected to grow considerably when diversification occurs.

STATUS: In order to report to the Prime Minister on the Thyssen proposal, the Prime Minister's Office and Senator Murray asked ACOA officials to take discussions

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SECRET

with Thyssen to the point where the minimum undertakings required from the Government of Canada to allow the project to proceed, would be determined.

On September 12, Senator Murray met with Mr. de Cotret to discuss the Thyssen proposal. Mr. de Cotret agreed to sign the Understanding in Principle, in recognition that to proceed, the Bear Head proposal required the document as an interim step, prior to the development of a formal business plan.

Mr. de Cotret observed to Senator Murray that DRIE had some 800 projects seeking applications for financial assistance for which no DRIE funding was available. In this context, Mr. de Cotret stressed that the Government would have to develop a source of funds for projects valued in excess of \$20 million, and that, in the case of Thyssen, funds would have to be earmarked prior to Thyssen's submission of a business plan, and application for funding.

On September 14, Mr. Derek Burney chaired a meeting attended by Senator Murray and Mr. Beatty. Mr. Beatty agreed to sign the Understanding in Principle subject to further Ministerial discussion, as required, providing that:

- (1) the company be informed clearly that in signing the UIP, the Minister of National Defence was not binding the Government to proceed with the LAV project;
- (2) a letter be sent from the DND Minister to the ACOA Minister noting that in signing the Understanding in Principle, the Minister of Defence was not limiting his discretion to determine the timing of the LAV project, and to recommend a preferred bidder to Cabinet; and
- (3) communications of the initiative be "low-key".

These conditions are entirely in accordance with the Thyssen proposal and Understanding in Principle. Efforts for their implementation are well underway.

DEPARTMENTAL POSITIONS: The Department of External Affairs has no concerns regarding the Bear Head proposal, providing that its stated objective, defence-related production aimed at North American (or NATO) markets and in the long-term, diversification into civilian production, is realized. External Affairs would, however, be concerned, if, in the long-run, with these markets, the Bear Head facility was not commercially-viable, and as a result, petitioned the Government to allow military exports into markets prohibited under Canada's export control policy. In this regard, External Affairs cautions that Thyssen's entry to U.S. military vehicle markets is by no means assured, because the U.S. Department of Defense has historically purchased its vehicle requirements almost exclusively from domestic sources.

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SECRET

The Department of Finance is concerned that if Ministers sign the Understanding in Principle, the Government will be entering into a de facto commitment, and moreover, a commitment not supported by a business plan. Finance is also concerned that if Ministers wish to enter into such a commitment, that a source of funds, from existing resources, be identified.

The Department of Regional Industrial Expansion is concerned that within its reference levels, funding for major projects, including Thyssen, is unavailable. On industrial policy grounds, DRIE cannot support the establishment of the Thyssen facility because the Thyssen project would exacerbate existing excess capacity in Canada, in the heavy fabrication including the, military-vehicle sector.

The Department of National Defence is preparing documentation to meet the requirements of the position adopted by Mr. Beatty in his discussions with Senator Murray and Mr. Burney on September 14, 1988, as summarized on page 5. Mr. Beatty has agreed to sign the Understanding in Principle, on the understanding that he is acting in accordance with his commitment to the Minister of Finance, concerning the funding of future defence projects.

TIMING: Thyssen must establish shortly a manufacturing facility in North America to be in a position to win -- in conjunction with its partner, General Dynamics -- a portion of an upcoming U.S. Department of Defence procurement of armoured vehicles, valued at about \$750 million (U.S.). Moreover, the U.S. government plans to proceed with a massive procurement of armoured vehicles, valued at some \$200 billion, for which Thyssen, at Bear Head, would be eligible to compete, under the Canada-U.S. Defence Production Sharing Agreement.

From the Government's perspective, the Thyssen proposal has been developing for some time. Given the timing of the U.S. project, if Ministers wish to support the establishment of the heavy-industry facility at Bear Head, a decision to proceed further will have to be reached soon.

FINANCIAL IMPLICATIONS: Thyssen is not applying for government assistance at this juncture, and any such application cannot proceed without a formal business plan. Moreover, in the absence of a business plan for both Phase I and Phase II, the ultimate draw on (and profile of) government funding, arising from the Bear Head project, is very difficult to determine.

However, should the Bear Head project proceed as envisaged, including Phase I and Phase II, federal Government assistance could be as high as \$50 million, over at least three years, beginning in 1989/90. The province of Nova Scotia, in addition to land, would provide a further \$8 million, as its share of the common-user infrastructure.

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SECRET

A source of funds for the federal assistance has not been identified, and must be developed prior to Thyssen's submission of a formal business plan and application for funding.

It will be necessary to agree with the Government of Nova Scotia to augment the approximately \$11 million in funds currently available in the Strait of Canso Industrial Development Agreement, which be used as an instrument and a partial source of funds to provide the infrastructure assistance. This funding would come from the Atlantic Cooperation (ERDA) funds notionally set aside.

Funding under the Defence Industry Productivity Program (DIPP), which historically has not been a particularly active program in Atlantic Canada, is not available within existing DRIE reference levels. Further, Atlantic Enterprise Program funding, delivered by DRIE, is also not available within existing DRIE reference levels.

Additional funding for this project must eventually be considered within the broader issue of how -- following the expiration of the IRDP -- the Government is to provide assistance to industrial projects in Atlantic Canada, valued at greater than the \$20 million ceiling for ACOA participation.

EVOLUTION OF THE THYSSEN PROPOSAL: Since Thyssen's original request in 1985, the Federal Republic of Germany has revised its armaments exports policy to allow for specific arms exports from Germany to the Middle East. Accordingly, the current proposal by Thyssen is entirely independent of domestic German exports policy.

RELATED ISSUES: In the course of responding to the Thyssen proposal, Ministers may wish to weigh the following considerations:

Suitability of the Thyssen vehicle for DND: The operational and technical requirements for the LAV vehicle must be determined solely by DND, and, as noted in the Understanding in Principle, Thyssen will be required -- as will other potential contractors -- to satisfy fully these operational requirements prior to being considered for participation in the LAV project foreseen for the early-to-mid 1990s. While Thyssen has consistently maintained that it will be able to meet DND requirements, DND officials observe that Thyssen does not currently manufacture a vehicle which meets the operational requirements envisaged for the LAV project.

Support of the Government of Nova Scotia: Thyssen has already entered into an agreement with the Government of Nova Scotia regarding the provision of land, and provincial site-establishment assistance.

Creation of additional Canadian military vehicle production capacity: While there is no question that the Bear Head heavy-industry facility would add to Canada's existing industrial capacity in this sector,

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now comprising primarily the GM plant in London, Ontario, (and also potentially including FMC, Canadian Foremost, Lavalin, Bombardier, and so on) the proposed arrangement with Thyssen for participation in the LAV contract would not exclude others -- including GM -- from participating as well. Moreover, when diversification into civilian production occurs, the Bear Head facility would contribute greatly to the industrial base of Atlantic Canada, and create a facility capable of competing for military vehicle contracts -- and in other civilian markets -- in the U.S. On the contrary, in order to establish an Atlantic facility, GM, so far, has sought directed, sole-source, military contracts on a single-product-facility basis, with little of the regional or other industrial diversification benefits of the Thyssen proposal.

Consistency of the "Understanding in Principle" and the Government's procurement policy: The Government would stress from the beginning that while Bear Head would be considered for participation in the LAV contract, the proposed arrangements in no way constitute sole sourcing, nor guaranteed participation, and that the fundamental principles of operational requirements and competitive pricing are protected fully.

Legal Considerations: During their consideration of the Thyssen proposal in July, Ministers requested a legal review of the proposed Understanding in Principle by the Department of Justice. In responding to this request, on August 4, the then Deputy Minister of Justice indicated that the document was likely legally binding, but acknowledged that one must look beyond its binding nature to the specific commitments of each party. As the most serious in this regard, Mr. Iacobucci drew attention to the commitment requested of the Minister of National Defence, namely, "to ensure the participation of the company" in the armoured vehicle contract. The Department went on to suggest that in terms of solutions, the wording will "ensure" should be replaced with wording such as will "consider", or will "entertain".

Accordingly, the "Understanding in Principle" has been revised to reflect the views expressed by the Department of Justice, and incorporates the wording "consider" in the key defence paragraph.

NEXT STEPS: Should Ministers wish to contemplate a regional development proposal of this kind, the following course of action could be pursued:

September 1988

- immediate finalization of the Understanding in Principle; and
- agreement on, and signature of, the Understanding in Principle by involved Ministers.

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Fall 1988

- formal, detailed negotiations between key federal departments (ACOA, DRIE, DND, Supply and Services) and the company to develop fully a corporate business plan and assistance package;
- concluding negotiations between the federal Government and the Government of Nova Scotia on the common-user infrastructure arrangements;
- preparation of a formal Memorandum of Understanding between the Government of Canada and Bear Head Industries Ltd.;
- formal submission of a Memorandum to Cabinet to CCERD;
- the signing of a formal contractual, legally-binding agreement between Bear Head and the Government.

Office of
the Project Manager

Bureau de l'Administrateur
du Projet

8075-4-AALAV

Distribution List

DRAFT AGREEMENT WITH BEAR HEAD INDUSTRIES LTD

1. I was told by our DSS reps that ACOA had drafted an agreement with Bear Head Industries Ltd for the establishment of a manufacturing facility in Bear Head, N.S.
2. The original draft was done in Jul 88; it was forwarded to the Department of Justice for a legal opinion.
3. At Flag A, the Deputy Minister of Justice provided this legal opinion to ACOA. As can be seen, the Department of Justice had major reservations with the document, particularly on the commitment expected from the MND.
4. As a result of that response, ACOA has now amended their draft agreement to that of 31 Aug 88 at Flag B.
5. No one from PMO AALAV had any input to this document. I was handed these documents from DSS. From my point of view, there is enough commitment in this document to possibly jeopardize the LAV project if it is signed by the Minister. I would not recommend such signature.

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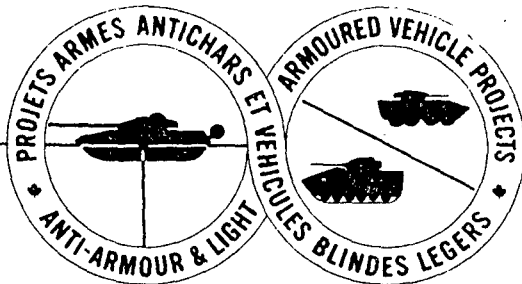
③
PMO AALAV Cine

Hopefully our ISRB
members will feel the
same way as OGLCM does
& will recommend to
Adm (mat) the MND
should not agree to
this "understandly - principle"

1988

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②
PM AALAV

1. I have noted on
DSS's copy that this
proposal is not
acceptable. Not only
does it commit us
to a veh family we
may not want, it
is virtually a sole
source contract before
we've even defined our reqt.

2. Your para 5 hits the nail
on the head.

3. If any minister signs
this he'll be playing
with a public relations nightmare -
the other potential LAV contenders
would have a field day with this.

76732

16 Sep 88

DLLEN

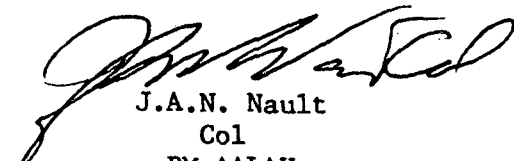


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the Project Manager

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du Projet

- 2 -

6. I am passing it to you for information, in case it is brought to the attention of the Minister, the DM or ADM(Mat).


J.A.N. Nault
Col
PM AALAV
995-2794

/3 Sep 88

Attachments: Flags A and B

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MEMORANDUM

8075-4-AALAV

-2 Jul 87

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OUTLINE EVALUATION
THYSSEN HENSCHEL

Refs: A. Telecon CEM/PD AALAV 30 Jun 87
B. 8075-4-AALAV (LAV 3) 30 Jun 87
C. 8075-4-AALAV (LAV 3) 15 May 87

INTRODUCTION

1. CEM at Ref A requested a more complete evaluation for ADM(Mat)'s use, of Thyssen Henschel as a possible manufacturer and designer of the vehicles required by L2065 Light Armoured Vehicles (LAV) than was provided at para 2 to Ref B.
2. Its context was a proposal that has apparently been put to the Prime Minister by Thyssen Henschel, possibly assisted by General Motors Diesel Division (GMDD) in London, Ont.
3. Note that Ref B covered a briefing note to our Ministers on L2065 LAV which for convenience is attached at Flag A in an updated version.

L2065

4. The outline of L2065 is provided at Side Flag 1 which in summary calls for:
 - a. upgrading, repair and overhaul of our current fleet of approximately 1,300 M113 family vehicles and 289 wheeled AVGP vehicles;
 - b. acquisition of approximately 1,400 wheeled and/or tracked APCs and variants; and
 - c. acquisition of approximately 500 light armoured utility vehicles (essentially armoured jeeps).
5. The funding under the pre-White Paper DSP was set at CY \$2.13 B whose cash phasing is shown at Side Flag 2. Note that significant

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funding begins only in 90/91. In the DSP being developed for the White Paper, the start of significant funding is likely to be delayed by two years.

6. Milestones for the project, which will probably evolve into three distinct MCPs (upgrade of current fleets, new APCs, and LAUVs), are based on a procurement strategy approved by a departmental SRB and promulgated by Ref C (attached at Flag B). It will be discussed at an Interdepartmental SRB to be convened in August. In this strategy the selection of the vehicle and the selection of its manufacturer are made at the same time. See Side Flag 3 for a summary of milestones and Side Flag 4 for a more complete set. (Note that the milestones are based on anticipated changes to the DSP and are NOT consistent with the funding line at Side Flag 2. The milestones are thus more reliable).

7. L2065 has an approved SOR(P) and a PPP that was referred to PCB by PCB SC on 4 Jun 87.

PROCUREMENT STRATEGIES

8. As noted above, the procurement strategy combines selection of manufacturer with that of vehicle in one determination. However simple logic makes it clear that these two selections can be separated. I mention this only because it appears to be an issue in the evaluation of Thyssen Henschel requested at Ref A.

9. The three basic options resulting when these two selections, of manufacturer and of vehicle, are perceived as separate are these:

- a. The manufacturer is selected first; then the vehicle is selected;
- b. The manufacturer and vehicle are selected at the same time; and
- c. The vehicle is selected first; then the manufacturer is selected.

Each of these admits of variations. All have advantages and disadvantages which can not be conveniently elaborated here.

10. Comment

- a. We must recognize that the basic thrust of recent GMDD briefings to government officials here in Ottawa is that they (whether in partnership with a foreign designer or not) should

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be designated now as the manufacturer of our new vehicles and as the upgrader of our current fleets, ie, they want to be designated the "centre of excellence" for production, repair and overhaul of LAVs. Inherently this represents the adoption of the strategy at para 9a above.

- b. Thyssen Henschel, especially if they are operating in Canada with GMDD, appear to be attempting to acquire similar status.

THYSSEN HENSCHEL

11. Attached at Flag C is a brochure on Thyssen Henschel. A chart at Side Flag 5 indicates the range of vehicles they currently produce or are developing. Note that they produce M113s (Column A), as well as the heavier Marder vehicle (Column B), for the German Army and provide full repair, overhaul and modification services for both vehicles (Column C). They are a focused LAV manufacturer with a complete capability for design, development and production.

12. Without an SOR no firm evaluation of their vehicles is possible. However the following comments may safely be made:

a. Marder. (Shown at Armex 87)

- (1) This is a relatively big, heavy (29 metric tonne) fighting vehicle armed with a 20 mm cannon, an anti-tank guided weapon, two machine guns and integrally mounted automatic carbines in firing ports. It carries 9 men.
- (2) Operational upgrades are being implemented which will change the cannon to 25 mm.
- (3) Comment. This vehicle will not fit in a C130 Hercules, will not carry 10 men, has more firepower than we require and is not inherently amphibious. Furthermore this vehicle, which entered service in 1971, will be obsolescent in 1994 when we seek first delivery. It does not appear to be capable of redesign to meet our requirements.

b. M113

- (1) We now have M113s. Their designer and builder, Food Machinery Corporation of California (FMC) has plans for their operational upgrade and/or redesign to meet future requirements. New upgraded M113s from any source will undoubtedly contend for our acquisition. Thyssen Henschel, it is safe to assume, have similar plans.

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- (2) Thyssen Henschel could also vie for our contract to upgrade our M113 fleets (currently and conservatively estimated at not less than CY \$100 M).
- (3) Thyssen Henschel can thus contend (assuming their agreement with FMC so permits) for both our new acquisition and our upgrade contracts.

c. TH 400 (Column D Side Flag 5)

- (1) This newly designed 6 x 6 wheeled vehicle was shown at Armex 87 (and got stuck in mud at LETE during a mobility demonstration on 9 Jun!). Its development is not yet complete, but it could well prove to be the most mobile light to medium weight wheeled armoured vehicle available in the Western World.
- (2) In an effort to avoid a continuation of the controversy over wheels vs tracks, this PMO has secured the informal agreement of CLDO and Comd FMC that our SOR and the technical specification resulting therefore will not stipulate explicitly a requirement for either a wheeled or a tracked vehicle, but will state our requirements for mobility in terms only of performance. We will leave it to formal evaluation of contending vehicles to determine whether a wheeled or tracked vehicle best meets our needs.
- (3) It is safe to assume that Thyssen Henschel will offer this TH 400 vehicle family as wheeled contenders for our new APC.

d. Other Thyssen Henschel Vehicles

- (1) Thyssen Henschel as Side Flag 5 indicates, produce a very wide range of wheeled and tracked LAVs. The existence of these vehicles confirms the company's versatility. But these vehicles themselves are of little interest to Canada.
- (2) It is interesting that Thyssen Henschel has not yet entered the LAUV field although they obviously could.
- (3) Comment. Conceptually the leading contender for our LAUV requirement appears to be the French Panhard M11, the first in this new line of "ultra-light" armoured vehicles. Significantly Panhard and Thyssen Henschel's

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main German competitor, Kraus Maffei, are currently engaged in negotiations which they hope, will lead to a licencing agreement for manufacture in FRG.

DISCUSSION

13. L2065

- a. As Side Flag 2 indicates, the funding currently available in this project is unlikely to be sufficient to support early development of an industrial capacity in the Maritimes.
- b. Furthermore it appears unlikely that the Army's LTP, currently being worked up to support the requirements of the Defence White Paper, has the flexibility to provide for such an adjustment.
- c. Finally L2065 is not the Army's No. 1 priority project. The Army might not be grateful for a decision by the government that effectively made it No. 1 at the expense of the new Main Battle Tank project!

14. Thyssen Henschel

- a. Thyssen Henschel unquestionably have all requisite technical capabilities to meet the Canadian Army's requirements for production, repair, overhaul and operational upgrade of new and current inventory vehicles.
- b. Thyssen Henschel currently have designs of at least one Tracked vehicle, M113, and one Wheeled Vehicle, TH 400, that would undoubtedly compete for our requirement (unless they do not have a licence from M113 for export of M113. This issue is moot; the TDP belongs to the US Army.)
- c. They could undoubtedly design a new or redesign any existing vehicle to meet our specific requirements.

15. Other Companies

- a. Many other companies, some already teamed with Canadian partners, have capabilities of the same order as Thyssen-Henschel. Those known to this PMO include:
 - (1) Steyr-Daimler-Puch (Austria) - teamed with Urban Transport Development Corporation (Kingston, Ont) recently acquired by Lavalin,

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- (2) FMC (USA) - teamed with Halifax Defence Industries to form Atlantic Defence Industries Limited (Halifax),
- (3) Mowag (Switzerland) - Teamed with GMDD (for wheeled vehicles only. GMDD has only limited experience with tracked vehicles which is associated with modifying M113s),
- (4) Oto Melara (Italy) - teamed for naval products with Indal Technologies Inc (Toronto),
- (5) Kraus-Maffei (FRG) - not yet teamed,
- (6) GKN Sankey (UK) - not yet teamed,
- (7) GIAT (France) - not yet teamed, and
- (8) Engesa (Brazil) - not yet teamed.

b. The following Canadian companies are known by this PMO to be interested in our project or have this potential:

- (1) Marine Industries Limited (Montreal), and
- (2) Bombardier (Valcourt).

c. Comment

- (1) Thyssen Henschel are NOT the only company capable of producing our new and upgrading our old fleets. They also are not the only company capable of job creation in the Maritimes or other low-employment areas.
- (2) If we are forced by circumstances to separate selection of manufacturer from that of vehicle, and to do the former first, we should give serious consideration to making that selection on the basis of formal competition, not on quick success in marketing a politically attractive offer to promote regional industrial expansion.

16. Selection of Vehicle

- a. Any DSP project, especially one as large as L2065, has both military and non-military benefits which cannot be considered in isolation from each other.

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- b. To protect the military objectives of L2065 we should strive to assure that the selection of the vehicles to meet our requirements is based solely on their operational capabilities and their costs (in all their aspects).
- c. Ideally of course the procurement strategy approved by our SRB would be followed; we should strive in the first instance to ensure that that approach, which is orderly and familiar to all, is followed.
- d. If a decision is taken to select the manufacturer before the vehicle, we should strive:
 - (1) To make that decision on the basis of formal competition; and
 - (2) To make that decision independent of that manufacturers' vehicles, assuming that we can buy the design of any vehicle we select, for production by our selected manufacturer;
- e. Having selected our manufacturer, we will then be in a position to use his expertise in selecting our vehicle, recognizing that he will have a substantial conflict of interest (he will want his vehicles to win).
- f. In any case we must ensure absolutely that no circumstance arises that denies this department the opportunity to state its requirements dispassionately and to evaluate contending vehicles against that requirement. We must however accept that when more than one contending vehicle is judged to be operationally acceptable, other non-operational factors can determine the winner. Equally we must not accept that operational considerations, especially the fundamental one of acceptability, are denied a basic role in the selection process for vehicles to meet the requirements of L2065 LAV.

CONCLUSION

- 17. I conclude from the above that:
 - a. We should attempt to protect the already established procurement strategy for L2065;
 - b. If we cannot, then we must formally separate selection of manufacturer from selection of vehicle and conduct the former first;

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- c. We should strive to ensure that the selection of manufacturer is based on formal competition, not "political" success;
- d. We should equally strive to ensure that operational considerations play their proper role in the subsequent selection of vehicles; and
- e. We should attempt to dissuade the government from hastily accepting the Thyssen Henschel offer.

C. E. J. Riley
C.E.J. Riley
Col
PD AALAV
995-2794

Attachments:

- FLAG A - Briefing Note to Ministers - Project L2065 LAV
8075-4-AALAV dated 2 Jul 87
- FLAG B - 8075-4-AALAV (LAV 3) 15 May 87
- FLAG C - Brochure on Thyssen Henschel

DISTRIBUTION LIST

Action

ADM(Mat) (through CEM)

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PD Tank

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TO DM's OFFICE
1445 HRS 27 AUG 87
SW.

NDHQ OTTAWA
PMO AALAV

27 Aug 87

AUG 28 1987

ADM (Mat),
DM,

File No: 8075-4-AALAV

UPDATE ON DND CONCERN REGARDING THE THYSSEN-HENSCHEL
PROPOSAL

Please find attached the NEW version of the above
along with a copy of the OLD marked-up version
for your approval.

[Signature]
D. D. Gillespie
CS
992-6523

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National Defence

Defense nationale

Deputy Minister

Sous-ministre

National Defence Headquarters
Ottawa, Canada
K1A 0K2

Quartier général de la Défense nationale
Ottawa, Canada
K1A 0K2

The Minister

UPDATE ON DND CONCERNS REGARDING THE THYSSEN-HENSCHER PROPOSAL

As requested, the attached aide-mémoire updates our concerns on the Thyssen-Henschel proposal.

D.B. Dewar

Enclosure: 1

c.c. The Associate Minister

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27 August 1987

UPDATE ON DND CONCERNS REGARDING THE THYSSEN-HENSCHEL PROPOSAL

BACKGROUND

1. Thyssen-Henschel, a West German company, is a major manufacturer of light armoured vehicles. Eighteen months ago, Thyssen-Henschel proposed the establishment of a plant in Cape Breton to produce armoured vehicles. The company withdrew when controversy developed over the issue of export permits. Thyssen-Henschel has recently renewed the proposal to build a factory in Cape Breton, contingent upon their receiving an order from some source for 250 to 300 light armoured vehicles. The Light Armoured Vehicle (LAV) Program Office has discussed with Thyssen the outlook for future light armoured vehicle requirements in the same fashion as with any other of the potentially interested parties.

CURRENT SITUATION

DND LIGHT ARMOURD VEHICLE REQUIREMENTS

2. General: Within the current Defence Services Program currently being finalized for presentation to Cabinet in October there are two projects which are proposing the acquisition of significant numbers of light armoured vehicles. These are L2065 - Light Armoured Vehicles (LAV) and L2207 - Land Reserve Modernization Program (LRMP).

3. L2065 Light Armoured Vehicles: This project aims to acquire approximately 1,400 new light armoured vehicles and 400 light armoured utility vehicles (armoured jeeps) while retaining existing fleets (the M113 family of tracked vehicles and the Armoured Vehicle General Purpose (AVGP) family of wheeled vehicles). This 1,800 vehicle project will cost some \$2.175 billion and is programmed to fund major start-up costs commencing in 1992-93 with first deliveries commencing in 1994. The main function of the principal vehicle to be acquired is that of infantry section armoured personnel carrier. To perform this function it will require high cross-country mobility, large capacity and a relatively low level of firepower.

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4. L2207 Land Reserve Modernization Program: A critical and immediate element of the Land Reserve Modernization Program, on which planning is not yet firm, is the acquisition of light armoured vehicles so as to permit the early establishment of Militia Training and Support Centres. This element, now funded at about \$110 million, would purchase approximately 125 vehicles and anticipates first deliveries in 1989. The Army at present operates some 1,300 M113s and variants, constituting over 80% of our light armoured vehicle holdings. For reasons of early availability, cost, logistic support, training and equipment commonality, it is intended that the vehicle procured for militia training centres be the latest version of the M113.

DND CONCERNS

5. a. Requirements

(1) The process of properly defining DND's light armoured vehicle requirements will not be completed before April 1988. This process is central to determining the shape of the Army well into the next century. However, even at this early stage we can see that it is highly unlikely that any of Thyssen-Henschel's present product line will meet the Canadian requirement. In particular their tracked vehicle, the Marder, introduced in the late 60s, is of obsolescent design and is a fighting vehicle, not a section carrier. It is more expensive than we can afford and does not match the requirement outlined above. They have recently introduced a wheeled vehicle, the TH 400, but this vehicle is not yet developed as a section carrier, and we doubt that a wheeled vehicle will meet our cross-country mobility requirements. Of course, given enough time and money any company such as Thyssen-Henschel could develop a new vehicle to meet our requirements.

(2) With respect to the new vehicles for reserve modernization, it would make no sense to introduce a new fleet of 125 orphan vehicles. Thyssen-Henschel does not produce the M113, and it is not likely that a production

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licence could be obtained. The US Army holds the rights to the Technical Data Package and has accorded FMC Corporation production rights. FMC has recently teamed with Halifax-Dartmouth Industries Ltd. If M113s were to be produced in Canada, it is likely that only this company could get production rights.

- b. Funding/Army Program: In the constrained funding scenario within which the defence program has been developed for consideration of our Ministers prior to Cabinet review in October, it proved extremely difficult to meet White Paper objectives for our Land Forces. The proposed Land Forces Program is, due to the massive restructuring of the Army, very fragile and carries major risks if any of several critical elements, of which the Light Armoured Vehicle Program is one, do not fall into place as planned. Significant cash flow for light armoured vehicles could only be accommodated beginning in 1992-93.

- c. Industry Interest: Several other Canadian companies, some already teamed with foreign vehicle manufacturers in anticipation of the Light Armoured Vehicle Program, have the potential for building light armoured vehicles:

- (1) Marine Industries Ltd./Vickers of Montreal;
- (2) Marine Industries Ltd. of Rimouski, Québec;
- (3) Lavalin/Urban Transport Development Corporation (UTDC) of Kingston (already teamed with Steyr-Daimler-Puch of Austria);
- (4) Canadian Foremost Ltd. of Calgary (already teamed with Hagglunds and Sohner of Sweden);
- (5) Indal Technologies Inc. of Toronto (already teamed with Oto Melara of Italy); and
- (6) General Motors Diesel Division of London, Ontario.

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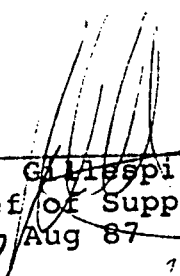
RELATED INITIATIVES

6. As mentioned above, it is our understanding that Atlantic Defence Industries Ltd. has production rights for the M113 in Canada. The Atlantic Canada Opportunities Agency is aware of the arrangement but we are not aware if consideration has been given to locating a facility in Cape Breton to meet future export opportunities.


7. General Motors has spoken to Thyssen about the possibility of some form of joint arrangement with Thyssen. However, we understand they have been unable to reach any agreement. Furthermore, we understand that GM may be considering approaching the Atlantic Agency and the Government of Nova Scotia to discuss the possibility of support for a new manufacturing plant in Cape Breton should they be the successful bidder on the DND heavy truck program.

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R.D. Gillespie
Chief of Supply
27 Aug 87



E.J. Healey
ADM(Mat)
Aug 87

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DATE

AIDE-MEMOIRE FOR THE MINISTER AND THE ASSOCIATE MINISTER

SUBJECT: ^{Update on} DND concerns regarding the Thyssen-Henschel Proposal

BACKGROUND

1. Thyssen-Henschel, a West German company, is a major manufacturer of light armoured vehicles. Eighteen months ago, Thyssen-Henschel proposed the establishment of a plant in Cape Breton to produce armoured vehicles. The company withdrew when controversy developed over the issue of export permits. Thyssen-Henschel has recently renewed the proposal to build a factory in Cape Breton, contingent upon their receiving an order from some source for 250 to 300 light armoured vehicles. ~~While we did participate in interdepartmental discussions of the original proposal, DND has not been party to any official discussions with Thyssen about the latest proposal. We have accepted an invitation to be briefed by the company on August 21.~~ The Light Armoured Vehicle (LAV) Program Office has discussed with Thyssen the outlook for future light armoured vehicle requirements in the same fashion as with any other of the potentially interested parties.

CURRENT SITUATION

DND LIGHT ARMoured VEHICLE REQUIREMENTS

2. General. Within the current Defence Services Program currently being finalized for presentation to Cabinet in October there are two projects which are proposing the acquisition of significant numbers of light armoured vehicles. These are L2065 - Light Armoured Vehicles (LAV) and L2207 - Land Reserve Modernization Program (LRMP).

3. L2065 Light Armoured Vehicles. This project aims to acquire approximately 1,400 new light armoured vehicles and 400 light armoured utility vehicles (armoured jeeps) while retaining existing fleets (the M113 family of tracked vehicles and the Armoured Vehicle General Purpose (AVGP) family of wheeled vehicles). This 1,800 vehicle project will cost some \$2.175 billion and is programmed to fund major start-up costs commencing in 1992-93 with first deliveries commencing in 1994. ^{The main} main function of the principal vehicle to be acquired is that of ^{armoured} section armoured personnel carrier. To perform this function it will require high cross-country mobility, large capacity and a relatively low level of firepower.

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4. L2207 Land Reserve Modernization Program. A critical and immediate element of the the Land Reserve Modernization Program, on which planning is not yet firm, is the acquisition of light armoured vehicles so as to permit the early establishment of Militia Training and Support Centres. This element, now funded at about \$110 million, would purchase approximately 125 vehicles and anticipates first deliveries in 1989. ~~(This quantity, which is affordable in the DSP to be reviewed in October, represents one quarter of the number required for effective training of the Militia. How this shortfall is to be made up is not yet clear; the Light Armoured Vehicles project and equipment re-distribution could however overcome this difficulty.)~~ The Army at present operates some 1,300 M113s and variants, constituting over 80% of our light armoured vehicle holdings. For reasons of early availability, cost, logistic support, training and equipment commonality, it is intended that the vehicle procured for militia training centres be the latest version of the M113.

DND CONCERNS

5. a. Requirements

- (1) The process of properly defining DND's light armoured vehicle requirements will not be completed before April 1988. This process is central to determining the shape of the Army well into the next century. However, even at this early stage we can see that it is highly unlikely that any of Thyssen-Henschel's present product line will meet the Canadian requirement. In particular their tracked vehicle, the Marder, introduced in the late 60s, is of obsolescent design and is a fighting vehicle, not a section carrier. It is more expensive than we can afford and does not match the requirement outlined above. ~~They have recently introduced a wheeled vehicle, the TH 400, but this vehicle is not yet developed as a section carrier, and we doubt that a wheeled vehicle will meet our cross-country mobility requirements.~~ Of course, given enough time and money any company such as Thyssen-Henschel could develop a new vehicle to meet our requirements.
- (2) With respect to the new vehicles for reserve modernization, it would make no sense to introduce a new fleet of 125 orphan vehicles. Thyssen-Henschel does not produce the M113, and it is not likely that a production

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licence could be obtained. The US Army holds the rights to the Technical Data Package and has accorded FMC Corporation production rights. FMC has recently teamed with Halifax-Dartmouth Industries Limited to form Atlantic Defence Industries Ltd. If M113s were to be produced in Canada, it is likely that only this company could get production rights.

- b. Funding/Army Program. In the constrained funding scenario within which the defence program has been developed for consideration of our Ministers prior to Cabinet review in October, it proved extremely difficult to meet White Paper objectives for our Land Forces. The proposed Land Forces Program is, due to the massive restructuring of the Army, very fragile and carries major risks if any of several critical elements, of which the Light Armoured Vehicle Program is one, do not fall into place as planned. Significant cash flow for light armoured vehicles could only be accommodated beginning in 1992-93.

- c. Industry Interest. Several other Canadian companies, some already teamed with foreign vehicle manufacturers in anticipation of the Light Armoured Vehicle Program, have the potential for building light armoured vehicles:

- (1) Marine Industries Ltd/Vickers of Montreal;
- (2) Marine Industries Ltd of Rimouski, Québec;
- (3) Lavalin/Urban Transport Development Corporation (UTDC) of Kingston (already teamed with Steyr-Daimler-Puch of Austria);
- (4) Canadian Foremost Ltd of Calgary, already teamed with Haggglunds and Sohner of Sweden;
- (5) Indal Technologies Inc. of Toronto (already teamed with Oto Melara of Italy); and
- (6) General Motors Diesel Division of London, Ontario.

~~Informal discussions with General Motors Diesel Division indicate that they are discussing with Thyssen-Henschel the possibility of forming a joint venture company to construct and operate the proposed factory on Cape Breton Island. No agreement has been reached and we are aware of some major areas of disagreement.~~

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- d. Economic Viability. Notwithstanding the enthusiasm of the Atlantic Canada Opportunities Agency, we understand that there remain serious reservations in DRIE about the economic viability of the proposal. In particular, a realistic assessment of the export market, which would be absolutely essential to the continuing economic viability of this project, has not been provided to DRIE's satisfaction.

CONCLUSION

5. The Thyssen-Henschel proposal has, in several respects, very serious implications for DND. Its accommodation would require major compromises in the Land Forces Program being prepared to pursue the objectives of the White Paper.

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