

Phrobis III, Ltd.

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> 28 SEPTEMBER 1989 JAH-89-0132

RE: M9 BAYONET

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DEAR SIR:

Thank you for your interest in our products and particularly your recent purchase. I hope that you found everything to be in order and to your satisfaction.

I promised you some amplifying information on the M9 Bayonet procurement during the course of our recent telephone conversations, and I will attempt to do the subject justice with this letter.

THE COMPANY'S FIRST VENTURE INTO THE DESIGN OF FIGHTING KNIVES WAS THE EXTREMELY POPULAR "BUCKMASTER" (ENCLOSURE (1)). THIS KNIFE AND ITS DISTINCTIVE SCABBARD HAVE BOTH BEEN PATENTED (ENCLOSURES (2) AND (3)). THE EXPERTISE GAINED IN THIS DEVELOPMENT WAS LARGELY RESPONSIBLE FOR DUR SUCCESS IN THE BAYONET COMPETITION AND SUBSEQUENT PROCUREMENT.

ODDLY ENOUGH, IT SEEMS LIKE THE MAIN IMPETUS BEHIND THE M9 BAYONET PROCUREMENT WAS ARMED FORCES JOURNAL INTERNATIONAL MAGAZINE (ENCLOSURE 4)). THIS IS APPARENTLY WHAT GOT THE PROGRAM MOVING. A FURTHER ARTICLE ON THE SUBJECT OF BAYONETS APPEARED IN THE JULY 1985 ISSUE OF AFJ (ENCLOSURE (5)). SOMEWHERE DURING THIS TIME FRAME THE U.S. ARMY GENERATED THE REQUIREMENT FOR A MULTIPURPOSE BAYONET (ENCLOSURE (6)),

By August 1985, Phrobis had developed prototype technology based upon the "Buckmaster", which was submitted to the Infantry School at Fort Benning, Georgia (enclosures (7) and (8)). This move brought us to the attention of the Army as a potential source for a new Bayonet.

THE U.S. ARMY ARMAMENT, MUNITIONS AND CHEMICAL COMMAND'S MARKET SURVEY OF 19 AUGUST 1985 WAS THE OFFICIAL BEGINNING OF THE PROCUREMENT (ENCLOSURE (9)). OUR RESPONSE DESCRIBES IN DETAIL THE FIRST ACTUAL PROTOTYPE OF WHAT WAS TO BECOME THE M9 BAYONET (ENCLOSURE (10)).

FOLLOWING THE MARKET SURVEY, THE ARMY FORMED A WORKING GROUP TO DIGEST THE RESULTS (ENCLOSURE (11)), AND FINALIZE THE DETAILS OF WHAT THEY WANTED IN THE PROPOSED XM9 MULTIPURPOSE BAYONET SYSTEM (M.P. B.S.), (ENCLOSURE (12)), BY LATE 1985 THE PROCUREMENT HAD BECOME A REALITY (ENCLOSURE (13)).

IN JANUARY 1986, PHROBIS SETTLED UPON A FINAL DESIGN FOR THE XM9 PROTOTYPES AND IN THE FOLLOWING MONTH BEGAN TO GEAR UP FOR THE PRODUCTION OF THE REQUIRED TEST SAMPLES (ENCLOSURES (14) AND (15)). THIS SOMEWHAT

ANTICIPATED THE SOLICITATION, No. DAAA21-86-R-0155 (ENCLOSURE (16)), WHICH WAS DATED MARCH 28, 1986 AND PROBABLY RECEIVED IN EARLY AFRIL, ALTHOUGH NO RECORD OF THE ACTUAL DATE OF RECEIPT SURVIVES. BY 20 APRIL 1986, OUR PROGRAM WAS WELL ALONG (ENCLOSURE (17)). IN MAY 1986, AFJ AGAIN UPDATED THE STATUS OF THE PROGRAM IN PRINT (ENCLOSURE (18)). AFTER A PERIOD OF INTENSE ACTIVITY, THE 55 XM9 PROTOTYPES WERE READY (ENCLOSURE (19)), AND THEY WERE HAND CARRIED TO THE EAST COAST TO MEET THE MAY 28 DEADLINE IMPOSED BY THE SOLICITATION. ENCLOSURE (20) IS A COPY OF THE MANUAL SUBMITTED ALONG WITH THE XM9 PROTOTYPES. IT HAD A RED LABEL ON IT WHICH SAID "CAUTION: EXTREMELY SHARP", THIS DID NOT COPY WELL, SO I AM INCLUDING THIS EXPLANATION.

IMMEDIATELY AFTER THE SUBMISSION OF THE 55 TEST SAMPLES, THERE FOLLOWED A PERIOD LASTING SEVERAL MONTHS DURING WHICH PHROBIS WENT BACK AND FORTH WITH THE ARMY OVER THE MEANING AND INTENT OF THE SOLICITATION. WE ALSO SET ABOUT GETTING THE VARIOUS NECESSARY SUBCONTRACTORS IDENTIFIED AND ESTABLISHING A FIRM PRICE FOR THE "BEST AND FINAL" OFFER TO THE GOVERNMENT.

IT WAS DURING THIS TIME FRAME THAT WE WERE CONNECTED WITH COLONEL LEWIS MILLETT, USA, (RET.), WHO WON THE CONGRESSIONAL MEDAL OF HONOR FOR LEADING THE U.S. ARMY'S LAST BAYONET CHARGE (ENCLOSURES (21), (22) AND (23)). HE WAS QUITE ENTHUSIASTIC ABOUT THE WHOLE PROJECT AND WAS PRESENT LATER FOR THE CEREMONIAL INITIAL ISSUE OF M9 BAYONETS TO THE RANGERS.

FINALLY, ON 6 OCTOBER 1986, PHROBIS III, LTD. WAS AWARDED CONTRACT NO. DAAA-21-87-C0001 FOR 315,600 M9 BAYONETS AT \$49.559 EACH, (ENCLOSURE(24)). THE IMPERIAL SCHRADE CORPORATION CONTESTED THE AWARD AND THEIR PROTEST WAS DISMISSED BY GAO (ENCLOSURE (25)).

THE AMRY NEVER RELEASED ANY DETAILED INFORMATION CONCERNING THE TESTS OR THE TECHNICAL DETAILS OF THE VARIOUS ENTRIES. THE MOST COMPLETE DESCRIPTION OF THE COMPETITION IS TO BE FOUND AGAIN, IN AFJ MAGAZINE (ENCLOSURE (26)). THE M9 WAS WIDELY REPORTED ON IN THE PRESS (ENCLOSURE (27)).

THE NEXT HURDLE WAS THE FIRST ARTICLE TEST (FAT), (ENCLOSURES (28) AND (29)), WHICH TOOK PLACE IN DECEMBER 1986. EVENTUALLY WE PREVAILED (ENCLOSURE (30)), AND DELIVERED THE REQUIRED 27 FAT SAMPLE BAYONETS ON TIME (ENCLOSURE (31)).

THE FAT BAYONETS DIFFER IN SEVERAL RESPECTS FROM THE PRODUCTION ARTICLE. THE BLADES WERE FORGINGS, BUT THE FULLER, TEETH AND WIRE CUTTER PIN SLOT WERE MACHINED ON A CNC MILL, AS WERE THE CUTTER PLATES. I BELIEVE THERE WERE ONLY 50 SETS OF FAT PARTS PRODUCED; 27 SETS WERE OBVIOUSLY MADE UP INTO BAYONETS FOR THE ARMY, I DO NOT KNOW HOW MANY OF THE REMAINING PARTS WERE ASSEMBLED INTO COMPLETE BAYONETS.

THE FIRST 1,200 PRODUCTION BLADES HAD THE FULLER FORMED AS PART OF THE FORGING FROCESS, WHILE THE TEETH AND WIRE CUTTER PIN SLOT WERE STILL MACHINED. ON ALL SUBSEQUENT PRODUCTION, THESE LATTER TWO OPERATIONS WERE BROACHED. ALL

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OF THE PRODUCTION CUTTER PLATES WERE MADE BY A FINE BLANKING PROCESS. IN ADDITION, THE MARKINGS ON THE FIRST 1,200 BLADES WERE DIFFERENT FROM THE FOLLOWING PRODUCTION. THEY WERE STAMPED "M9", "PHROBIS III", "U.S.A. >"; THE CHEVRON WAS AN INTERNAL BUCK KNIFE COMPANY MARK INDICATING A FORGING, AND IT WAS APPLIED WITHOUT THE CONSENT OR KNOWLEDGE OF PHROBIS III, LTD.. THIS EXTRA MARK ONLY CAME TO LIGHT AFTER THE VERY FIRST 540 UNITS WERE DELIVERED TO US FOR QA TEST AND INSPECTION. THE CHEVRON WAS NOT IN CONFORMANCE WITH THE TECHNICAL DATA PACKAGE AND THE BUCK KNIFE COMPANY WAS ORDERED TO DELETE IT FROM ALL FURTHER PRODUCTION.

I WAS TASKED WITH WRITING THE TECHNICAL MANUAL FOR THE BAYONET, AND ALSO SEEING TO IT THAT IT GOT PRINTED; I AM, THEREFORE, A GOOD DEAL MORE CONVERSANT WITH THIS ASPECT OF THE PROCUREMENT THAN I AM WITH THE DETAILS OF PRODUCTION. ENCLOSURE (32) WAS SUBMITTED WITH THE FAT PIECES, AND COPIES ALSO WENT TO ROCK ISLAND ARSENAL, WHO EVENTUALLY CAME UP WITH WHAT THEY CONSIDERED APPROPRIATE FOR SOMETHING AS SIMPLE AS A BAYONET (ENCLOSURE (33)).

THE VERY FIRST VARIATION OF OPERATOR'S MANUAL, OF WHICH THERE WERE ONLY ABOUT 1,500 PRINTED, HAVE THE SCHEMATIC PICTURE OF THE BAYONET ON THE COVER AND THE OCEANSIDE ADDRESS (ENCLOSURE (34)).

THE SECOND VARIATION OF THE MANUAL HAS THE SOLID DRAWING OF THE BAYONET ON THE COVER, AS WELL AS THE OCEANSIDE ADDRESS. THE COMPANY MOVED TO ITS PRESENT LOCATION IN CARLSBAD ON 7 NOVEMBER 1987, SO THE MANUAL HAD TO BE CHANGED AGAIN. THERE WERE ABOUT 89,500 OF THIS SECOND VERSION PRINTED (ENCLOSURE (35)).

THE THIRD AND FINAL VARIATION HAS THE CARLSBAD ADDRESS (ENCLOSURE (36)). IT REMAINED UNCHANGED THROUGH THE END OF THE CONTRACT.

DELIVERIES OF THE M9 BAYONET WERE AS FOLLOWS:

QUANTITY	DATE	DESTINATION
540	87 JAN 19	LETTERKENNY ARMY DEPOT
60	87 JAN 22	LETTERKENNY ARMY DEPOT
480	87 JAN 28	LETTERKENNY ARMY DEPOT
5,000	87 MAR 02	LETTERKENNY ARMY DEPOT
9,000	87 APR 09	LETTERKENNY ARMY DEPOT
10,000	87 MAY 01	LETTERKENNY ARMY DEPOT
15	87 MAY 19	ARDEC, DOVER, NJ
9,985	87 JUN 02	LETTERKENNY ARMY DEPOT
10,000	87 Jun 26	LETTERKENNY ARMY DEPOT
10,000	87 Jul 30	USALAD FORT ORD
10	87 JUL 30	[전문 기계 전략 전략 전략 전략 전략 기계
		PICATINNY ARSENAL
9,980	87 JUL 30	LETTERKENNY ARMY DEPOT
10,000	87 Aug 24	LETTERKENNY ARMY DEPOT
10,000	87 Oct 05	LETTERKENNY ARMY DEPOT
10,000	87 Nov 06	LETTERKENNY ARMY DEPOT
10,000	87 DEC 03	LETTERKENNY ARMY DEPOT

10,000	87 DEC 29 88 JAN 27	LETTERKENNY ARMY DEPOT LETTERKENNY ARMY DEPOT
10,000	88 FEB 29	LETTERKENNY ARMY DEPOT
9,920 15,000	88 MAR 28 88 APR 29	LETTERKENNY ARMY DEPOT RED RIVER ARMY DEPOT
15,000	88 MAY 31	RED RIVER ARMY DEPOT
15,000	88 Jun 30	RED RIVER ARMY DEPOT
10,000	88 AUG 01 88 AUG 25	RED RIVER ARMY DEPOT RED RIVER ARMY DEPOT
10,000	88 OCT 12	RED RIVER ARMY DEPOT
10,000	88 Nov 02	RED RIVER ARMY DEPOT
10,000	88 DEC 05 88 DEC 19	RED RIVER ARMY DEPOT RED RIVER ARMY DEPOT
10,000	89 JAN 27	RED RIVER ARMY DEPOT
5,000	89 FEB 10	RED RIVER ARMY DEPOT
5,000 10,000	89 FEB 22 89 Mar 31	SHARPE ARMY DEPOT
10,000	89 APR 28	SHARPE ARMY DEPOT
10,000	89 MAY 25	SHARPE ARMY DEPOT
10,000	89 JUN 27 89 JUL 31	SHARPE ARMY DEPOT
3,240	89 Aug 23	SHARPE ARMY DEPOT
2,333	89 SEP 06	SHARPE ARMY DEPOT

THERE WERE 4 SUBCONTRACTORS INVOLVED IN THE MANUFACTURE OF THE M9 BAYONET, AS FOLLOWS:

GEM PLASTICS FRAGILE HANDLE WITH CARE BUCK KNIVES, INC. SHERLIN PRINTING

SAN MARCOS, CA. SAN DIEGO, CA. EL CAJON, CA. OCEANSIDE, CA.

Buck Knives, Inc. DID some of the manufacture and assembly involved; however, most of the small parts, such as the latch plates and tang rods, and the black oxide finish, were subcontracted through Buck to another group of vendors. Gem Plastics molded all of the Zytel parts (handle and scabbard), and delivered them to Buck. Sherlin Printing produced the manuals and delivered them to Fragile who packaged, boxed and palletized the bayonets; they were shipped on a U.S. Government truck. The Faxtex Buckle, Bianchi clip, sharpening stone, snaps, etc. were purchased directly by Buck from their respective manufacturers.

ALL QUALITY ASSURANCE FUNCTIONS WERE PERFORMED AT PHROBIS III, LTD. (ENCLOSURE (37)).

THERE WERE SURPRIZINGLY FEW ENGINEERING CHANGES TO THE M9 BAYONET OVER THE FRODUCTION RUN. ONE INVOLVED STRENGHTENING THE RIVETS WHICH ATTACHED THE BIANCHI CLIP (ENCLOSURE (38)). THE BLADE MARKINGS WERE CHANGED TOWARDS THE END OF 1987; FROM "M9", "PHROBIS III", "U.S.A.", "PAT. PEND." (ENCLOSURE (39)).

THERE WERE A VERY FEW PRESENTATION GRADE BAYONETS MADE, THESE HAD A MIRROR POLISH ON THE BLADE, AND WERE USUALLY ENGRAVED WITH THE RECIPIENT'S NAME AND TITLE; OTHERWISE, THEY WERE IDENTICAL IN EVERY RESPECT TO THE ISSUE ARTICLE.

THE FIRST 3 DELIVERIES TO THE GOVERNMENT CONSISTED OF A TOTAL OF 1,080 PIECES (540 + 60 + 480); THERE WERE 166 BAYONETS LEFT OVER FROM THESE DELIVERIES (ACCORDING TO THE RECORDS I HAVE BEEN ABLE TO LOCATE), AND THESE EXCESS UNITS NERE CAREFULLY SET ASIDE AND ENGRAVED WITH SERIAL NUMBERS ON THE RIGHT SIDE OF THE RICASSO. YOU WILL NOTE THAT 1,080 + 166 comes very close to THE 1,200 UNIT FIGURE I HAVE DOCUMENTED AS HAVING THE VERY EARLY MILLED FEATURES AND CHEVRON BLADE MARKINGS. THE NUMBERS WENT FROM 001 TO 166; BUCK KNIVES, INC. KEPT THE ODD NUMBERED PIECES, WHILE PHROBIS III, LTD. PURCHASED THE 83 EVEN NUMBERED UNITS. SERIAL NUMBER 001 WAS PRESENTED ON A SPECIAL PLAQUE TO THEN PRESIDENT REAGAN (ENCLOSURE (40)) BY PHROBIS III, LTD. I PURCHASED SERIAL NUMBER 071 DIRECTLY FROM BUCK, I WAS INTERESTED IN THIS ONE BECAUSE 1971 WAS THE YEAR I GRADUATED FROM THE U.S. NAVAL ACADEMY. THESE SERIALIZED M9 BAYONETS WERE ALSO ADVERTISED ON THE INSIDE FRONT COVER OF KNIVES ILLUSTRATED, THEIR FALL 1989 ISSUE (ENCLOSURE (41)). TO MY KNOWLEDGE, THESE SPECIALLY SERIALIZED PIECES ARE THE ONLY MILITARY ISSUE M9 BAYONETS EVER MADE AVAILABLE TO THE PUBLIC AT LARGE.

RECENTLY, WE PROVIDED 4 PLAIN, MILITARY ISSUE MG BAYONETS, ON SPECIAL PLAQUES, TO THE SMITHSONIAN INSTITUTION FOR PRESENTATION TO ORGANIZATIONS AND INDIVIDUALS IN THE SOVIET UNION (ENCLOSURE (42)).

ON 6 SEPTEMBER 1989, WE DELIVERED THE LAST FEW ORIGINAL M9 BAYONETS TO THE U.S. GOVERNMENT.

WHEN WE BROUGHT THE BUCK KNIFE COMPANY ON BOARD IN 1986 AS A SUBCONTRACTOR, WE ALSO GRANTED THEM AN EXCLUSIVE COMMERCIAL LICENSE FOR THE M9 BAYONET. PHROBIS III, LTD, RETAINED THE RIGHTS TO ALL MILITARY SALES. THEIR LICENSE EXPIRES AT THE END OF CALENDAR YEAR 1989, AND ALL RIGHTS REVERT TO US AT THAT TIME.

Buck made at least 2 commercial versions of the M9, one of which was almost identical to the issue article, the other being all black, including the blade, scabbard and handle. With the exception of quality control, the only difference between Buck's commercial M9 and the real military issue bayonet (aside from the markings), was the cutter plate. Buck's cutter plate has a pin set into it which limits the travel of the blade when it is used as a wire cutter. In addition, the "T" stud is fixed horizontally and the clearance between it and the plate is supposed to be 0.60 inch. On the military version the "T" stud is set at a 30 degree angle from horizontal and the clearance is limited to 0.40 inch. These changes were accomplished to limit the product liability aspect of commercial sales. It is my understanding that Buck did not ship any of their commercial bayonets without this cutter plate.

AROUND THE END OF 1988 PHROBIS III, LTD. INITIATED THE DEVELOPMENT OF THE M9A1 BAYONET, WITH AN EYE TOWARDS BOTH MILITARY AND COMMERCIAL SALES (ENCLOSURE (43)). WHILE THE BAYONET IS IDENTICAL TO THE M9 VERSION, THE SCABBARD HAS BEEN COMPLETELY REDESIGNED. THE NEW SCABBARD ELIMINATES THE PREVIOUS MODEL'S COMPLEX ARRANGEMENT OF STRAPS, BUCKLES AND CLIPS, AND FEATURES A VERY SIMPLE BELT LOOP AND SWIVEL SYSTEM. THE MARINES HAVE EVIDENCED A CONSIDERABLE INTEREST IN THE M9A1, AND OUR PROTOTYPES ARE CURRENTLY BEING TESTED AT QUANTICO AND ALSO BY COMBAT ENGINEER UNITS OF THE 82ND AIRBORNE DIVISION (ENCLSOURES (44) AND (45)).

THIS ABOUT CLOSES THE CHAPTER ON THE M9 BAYONET. I HAVE INCLUDED SOME ADDITIONAL INFORMATION ON THE M9, AND THE STEEL USED IN THE BLADE, WHICH YOU MAY FIND TO BE OF INTEREST (ENCLOSURES (46), (47) AND (48)).

I HOPE THE FOREGOING WILL SHED SOME LIGHT ON THE HISTORY AND DEVELOPMENT OF THE M9 BAYONET. IF I CAN BE OF ANY FURTHER ASSISTANCE, PLEASE LET ME KNOW DIRECTLY.

MARKETING STRECTOR

ENCLOSURES: (1) BUCKMASTER DEVELOPMENT

(2) BUCKMASTER PATENT

(3) SHEATH PATENT

(4) AFJ, May 1985 ARTICLE (5) AFJ, JULY 1985 ARTICLE

(6) LETTER REQUIREMENT (LR) FOR A MULTIPURPOSE BAYONET (7) PHROBIS LTD. LTR. DTD. 9 AUGUST 1985

(8) TRIP REPORT

(9) AAMCCOM MARKET SURVEY, DTD.19 AUGUST 1985 (10) PHROBIS, LTD. LTR., DTD. 4 SEPTEMBER 1985

(11) AFJ, OCTOBER 1985 ARTICLE

(12) DRAFT/PURCHASE DESCRIPTION, DTD. 15 NOVEMBER 1985

(13) AFJ, FEBRUARY 1986 ARTICLE

(14) MILESTONE CHART
(15) MILESTONE CHART, DTD. 20 FEBRUARY 1986
(16) SOLICITATION DAAA21-86-R-0155, COPIES (17) MILESTONE CHART, DTD. 20 APRIL 1986

(18) AFJ, MAY 1986 ARTICLE

(19) XM9 LETTER OF TRANSMITTAL/DELIVERY

(20) COPY, XM9 MANUAL

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(21) MILLETT POSTER
(22) MILLETT LTR., DTD. 29 AUGUST 1986
(23) MILLETT ARTICLES
(24) CONTRACT DAAA21-87-C-0001, Copies
(25) GAD Decision, Copies
(26) AFJ, November 1986 ARTICLE
(27) VARIOUS ARTICLES
(28) POWT AWARD CONFERENCE, SCHEDULE
(29) PHROBIS, LTD. LTR., DTD. 25 NOVEMBER 1986
(30) AAMCCOM LTR. (FAX COPY)
(31) DD250, SHIPMENT NO. ESPO01, COPY
(32) FAT TECHNICAL MANUAL, COPY (31) DD250, SHIPMENT NO. ESPOOL, COPY
(32) FAT TECHNICAL MANUAL, COPY
(33) ROCK ISLAND OPERATOR'S MANUAL, COPY
(34) OPERATOR'S MANUAL, 1ST VARIATION, COPY
(35) OPERATOR'S MANUAL, 2ND VARIATION, COPY
(36) OPERATOR'S MANUAL, 3RD VARIATION, COPY
(37) QA ENGINEERING ACCEPTANCE MANUAL, COPIES
(38) AAMCCOM LTR., DTD. 30 JUNE 1987
(39) AAMCCOM LTR., DTD. 16 SEPTEMBER 1987
(40) PRESIDENT REAGAN LTR., DTD. 9 FEBRUARY 1988
(41) KNIVES ILLUSTRATED ADVERTISEMENT (40) PRESIDENT REAGAN LTR., DTD. 9 FEBRUARY 1988
(41) KNIVES ILLUSTRATED ADVERTISEMENT
(42) SMITHSONIAN INSTITUTE LTR., DTD. 1 AUGUST 1989
(43) M9A1 PRELIMINARY OPERATOR'S MANUAL, COPY
(44) DD FORM 1348-1, COPY
(45) FORM 1149, COPY (82ND AIRBORNE DIVISION
(46) M9 BAYONET SPECIFICATION SHEET
(47) T425 MODIFIED STAINLESS STEEL SPEC. SHEET
(48) METALLURGICAL ANALYSIS ON 425 MODIFIED

CC: FILE
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