



**ENSTROM 480B OPERATOR'S MANUAL
AND
FAA APPROVED ROTORCRAFT FLIGHT MANUAL**

REPORT NO. 28-AC-023

DATED: FEBRUARY 9, 2001

Revision 24, dated May 2, 2019, applies to the Enstrom 480B Operator's and FAA Approved Rotorcraft Flight Manual, dated February 9, 2001. Incorporate this revision by removing and inserting the pages listed below.

Remove pages	Insert pages
i through iv	i through iv
vii through xiv	vii through xiv
INTRO-3 through INTRO-6	INTRO-3 through INTRO-6
1-1 through 1-4	1-1 through 1-4
1-16.1 through 1-16.2	1-16.1 through 1-16.2
2-1 through 2-2	2-1 through 2-2
2-15 through 2-18	2-15 through 2-18
5-9-1 through 5-9-4	5-9-1 through 5-9-4
5-9-11 through 5-9-14	5-9-11 through 5-9-14
7-3 through 7-4	7-3 through 7-4
7-59 through 7-62	7-59 through 7-62
7-75 through 7-76	7-75 through 7-76

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LOG OF REVISIONS

Rev. No.	Date	FAA Approved
1	April 10/02	Joseph C. Miess
2	Sept 05/03	Joseph C. Miess
3	Feb 2/04	Joseph C. Miess
4	Sep 9/04	Joseph C. Miess
5	Sep 27/04	Joseph C. Miess
6	Apr 11/05	Joseph C. Miess
7	Jun 6/06	Joseph C. Miess
8	Sep 17/06	Joseph C. Miess
9	Mar 6/07	Joseph C. Miess
10	Apr 11/07	Joseph C. Miess
11	Dec 5/07	Joseph C. Miess
12	Feb 14/08	Joseph C. Miess
13	Apr 23/08	Joseph C. Miess
14	Apr 16/10	Joseph C. Miess
15	Jul 16/10	Joseph C. Miess
16	Sep 20/10	Joseph C. Miess
17	Jan 25/11	Joseph C. Miess
18	Jul 15/11	M. W. Anderson
19	Jan 18/12	Joseph C. Miess
20	Jul 3/12	Joseph C. Miess
21	Jan 14/13	Joseph C. Miess
22	Aug 17/15	Ronald D. McElroy
23	May 19/16	Ronald D. McElroy
24	May 21/19	Ryan Nelson

**Approved by the Manager,
Southwest Flight Test Section, AIR-713
Federal Aviation Administration
Ft. Worth, TX**

EASA LOG OF REVISIONS

Rev. No.	Date	EASA Approved	FAA Approval on Behalf of EASA
1	Sep 28/03	*	N/A
2	Sep 28/03	*	N/A
3	May 29/05	2005-4677	N/A
4	May 30/05	2005-4682	N/A
5	May 29/05	2005-4678	N/A
6	Jun 1/05	Decision 2004/04/CF	N/A
7	Jun 6/06	Decision 2004/04/CF	N/A
8	Sep 17/06	Decision 2004/04/CF	N/A
9	Aug 2/07	EASA.IM.R.C.01427	N/A
10	Jan 18/08	EASA.IM.R.C.01426	N/A
11	Apr 17/08	EASA.IM.R.C.01442	N/A
12	NOT EASA APPROVED (SUPP. #10, EFIS)		
13	NOT EASA APPROVED (SUPP. #10, EFIS)		
14	Apr 4/13	EASA 10044309	N/A
15	Mar 7/13	EASA 10043956	N/A
16	Jan 27/14	EASA 10045751	N/A
17	Aug 28/13	FAA/EASA T.I.P. **	G. J. Michalik
18	May 8/14	EASA 10044744	N/A
19	Aug 28/13	FAA/EASA T.I.P. **	G. J. Michalik
20	Oct 10/13	FAA/EASA T.I.P. **	G. J. Michalik
21	Jan 27/14	EASA 10045751	N/A
22	May 1/17	FAA/EASA T.I.P. **	M. Javed
23	May 1/17	FAA/EASA T.I.P. **	M. Javed
24	Jul 11/19	FAA/EASA T.I.P. ***	M. Javed

* Article 3, Commission Regulation (EU) 748/2012

** Section 3.2 T.I.P. Revision 5

*** Section 3.5.12 T.I.P. Revision 6

LOG OF SUPPLEMENTS

Sup. No.	Description	Date	FAA Approved
1	Cargo Hook	Feb 9/01	Joseph C. Miess
2	Snow Shoes	Feb 9/01	Joseph C. Miess
3	External Fuel Filter	Feb 9/01	Joseph C. Miess
4	Baggage Box Extension	Feb 9/01	Joseph C. Miess
5	Camera Door	Feb 9/01	Joseph C. Miess
6	Emergency Floats	Sep 5/03	Joseph C. Miess
7	Air Conditioning	Sep 9/04	Joseph C. Miess
8	Nose Positioned Camera Mount	Jun 6/06	Joseph C. Miess
9	Searchlight	Jun 6/06	Joseph C. Miess
10	EFIS	Feb 14/08	Joseph C. Miess

APPROVED FOR THE MANAGER
 CHICAGO AIRCRAFT CERTIFICATION OFFICE
 CENTRAL REGION
 FEDERAL AVIATION ADMINISTRATION

EASA LOG OF SUPPLEMENTS

Sup. No.	Description	Date	EASA Approved	FAA Approval on Behalf of EASA
1	Cargo Hook	Sep 28/03	*	N/A
2	Snow Shoes	Sep 28/03	*	N/A
3	External Fuel Filter	Sep 28/03	*	N/A
4	Baggage Box Extension	Sep 28/03	*	N/A
5	Camera Door	Sep 28/03	*	N/A
6	Emergency Floats	May 29/05	2005-4677	N/A
7	Air Conditioning	May 30/05	2005-4682	N/A
8	Nose Positioned Camera Mount	Jun 6/06	Decision 2004/04/CF	N/A
9	Searchlight	Jun 6/06	Decision 2004/04/CF	N/A
10	EFIS	NOT APPROVED		

* Article 3, Commission Regulation (EU) 748/2012

LIST OF EFFECTIVE PAGES

<u>PAGE</u>	<u>DATE</u>	<u>PAGE</u>	<u>DATE</u>
i	May 2/19	1-14	Apr 10/02
ii	May 2/19	1-15	Apr 10/02
iii	Feb 1/08	1-16	Apr 10/02
iv	May 2/19	1-16.1	Jul 12/10
v	Apr 16/10	1-16.2	May 2/19
vi	Apr 16/10	1-17	Jun 30/04
vii	May 2/19	1-18	Jun 30/04
viii	May 2/19	1-19	Jun 30/04
ix	May 2/19	1-20	Jun 30/04
x	May 2/19	1-21	Jun 30/04
xi	May 2/19	1-22	Jun 30/04
xii	May 2/19	1-23	Jul 3/12
xiii	May 2/19	1-24	Jul 3/12
xiv	Jul 3/12	1-25	Jul 3/12
INTRO-1	Feb 9/01	1-26	Jul 16/15
INTRO-2	Feb 9/01	1-27	Feb 9/01
INTRO-3	May 2/19	1-28	Feb 9/01
INTRO-4	May 2/19	1-29	Feb 9/01
INTRO-5	May 2/19	1-30	Feb 9/01
INTRO-6	Feb 9/01	1-31	Feb 9/01
INTRO-7	Apr 10/02	1-32	Feb 9/01
INTRO-8	Apr 10/02	1-33	Nov 21/12
INTRO-9	Apr 10/02	1-34	Nov 21/12
INTRO-10	Apr 10/02	2-1	May 2/19
1-1	May 2/19	2-2	Apr 16/10
1-2	May 2/19	2-3	Apr 16/10
1-3	May 2/19	2-4	Jul 3/12
1-4	May 2/19	2-5	Jul 3/12
1-5	Feb 9/01	2-6	Jul 3/12
1-6	Apr 16/10	2-7	Jul 3/12
1-7	Apr 16/10	2-8	Jul 3/12
1-8	Jul 16/15	2-9	Apr 16/10
1-9	Jul 3/12	2-10	Jul 3/12
1-10	Apr 16/10	2-11	Jul 3/12
1-11	Apr 28/16	2-12	Jul 3/12
1-12	Apr 16/10	2-13	Apr 16/10
1-13	Apr 28/16	2-14	Apr 28/16

LIST OF EFFECTIVE PAGES

<u>PAGE</u>	<u>DATE</u>	<u>PAGE</u>	<u>DATE</u>
2-15	Apr 28/16	3-9	Feb 9/01
2-16	May 2/19	3-10	Feb 9/01
2-17	May 2/19	3-11	Feb 9/01
2-18	Apr 16/10	3-12	Feb 9/01
2-19	Jun 14/11	3-13	Feb 2/04
2-20	Apr 16/10	3-14	Feb 2/04
2-21	Apr 16/10	3-15	Feb 9/01
2-22	Apr 16/10	3-16	Feb 9/01
2-23	Apr 16/10	3-17	Feb 9/01
2-24	Apr 16/10	3-18	Feb 9/01
2-25	Apr 16/10	3-19	Feb 2/04
2-26	Apr 16/10	3-20	Feb 2/04
2-27	Apr 16/10	3-21	Apr 10/02
2-28	Apr 16/10	3-22	Apr 10/02
2-29	Apr 16/10	3-23	Apr 16/10
2-30	Apr 28/16	3-24	Sep 5/03
2-31	Apr 16/10	3-25	Apr 16/10
2-32	Apr 16/10	3-26	Feb 9/01
2-33	Apr 16/10	3-27	Feb 9/01
2-34	Apr 16/10	3-28	Feb 9/01
2-35	Apr 16/10	3-29	Feb 9/01
2-36	Apr 16/10	3-30	Feb 9/01
2-37	Apr 16/10	3-31	Apr 10/02
2-38	Apr 16/10	3-32	Apr 10/02
2-39	Apr 16/10	3-33	Apr 10/02
2-40	Apr 16/10	3-34	Apr 10/02
2-41	Apr 16/10	3-35	Apr 10/02
2-42	Apr 16/10	3-36	Apr 10/02
2-43	Apr 16/10	3-37	Mar 17/05
2-44	Apr 16/10	3-38	Jul 16/15
3-1	Feb 9/01	3-39	Jul 12/10
3-2	Jul 12/10	3-40	Jul 12/10
3-3	Nov 21/12	3-41	Jul 12/10
3-4	Feb 9/01	3-42	Nov 21/12
3-5	Feb 9/01	3-43	Nov 21/12
3-6	Feb 9/01	3-44	Nov 21/12
3-7	Feb 9/01	4-1	May 22/06
3-8	Feb 9/01	4-2	May 22/06

LIST OF EFFECTIVE PAGES

<u>PAGE</u>	<u>DATE</u>	<u>PAGE</u>	<u>DATE</u>
4-3	May 22/06	4-40	Feb 2/04
4-4	May 22/06	4-41	Feb 9/01
4-5	Feb 9/01	4-42	Feb 9/01
4-6	Feb 9/01	4-43	Feb 9/01
4-7	Feb 9/01	4-44	Feb 9/01
4-8	Feb 9/01	4-45	Feb 9/01
4-9	Feb 9/01	4-46	Feb 9/01
4-10	Feb 9/01	5-0-1	Feb 1/08
4-11	May 22/06	5-0-2	Feb 1/08
4-12	May 22/06	5-1-1	Feb 9/01
4-13	May 22/06	5-1-2	Feb 9/01
4-14	May 22/06	5-1-3	Apr 16/10
4-15	Feb 9/01	5-1-4	Feb 2/04
4-16	Feb 9/01	5-1-5	Feb 9/01
4-17	Apr 11/07	5-1-6	Feb 9/01
4-18	Apr 11/07	5-1-7	Jul 16/15
4-19	Feb 2/04	5-1-8	Jul 16/15
4-20	Feb 2/04	5-1-9	Feb 9/01
4-21	Apr 11/07	5-1-10	Feb 9/01
4-22	Apr 11/07	5-1-11	Feb 9/01
4-23	Feb 9/01	5-1-12	Feb 9/01
4-24	Feb 9/01	5-1-13	Feb 2/04
4-25	Feb 9/01	5-1-14	Feb 2/04
4-26	Feb 9/01	5-2-1	Sep 5/07
4-27	Nov 21/12	5-2-2	Sep 5/07
4-28	Feb 9/01	5-2-3	Sep 5/07
4-29	Feb 9/01	5-2-4	Sep 5/07
4-30	Feb 9/01	5-2-5	Feb 9/01
4-31	Feb 9/01	5-2-6	Feb 9/01
4-32	Feb 9/01	5-2-7	Feb 9/01
4-33	Feb 9/01	5-2-8	Feb 9/01
4-34	Feb 9/01	5-2-9	Feb 2/04
4-35	Feb 9/01	5-2-10	Feb 2/04
4-36	Feb 9/01	5-3-1	Feb 9/01
4-37	Feb 9/01	5-3-2	Feb 9/01
4-38	Feb 9/01	5-3-3	Feb 9/01
4-39	Feb 2/04	5-3-4	Feb 9/01

LIST OF EFFECTIVE PAGES

<u>PAGE</u>	<u>DATE</u>	<u>PAGE</u>	<u>DATE</u>
5-3-5	Feb 9/01	5-7-3	Apr 16/10
5-3-6	Feb 9/01	5-7-4	Apr 16/10
5-3-7	Feb 9/01	5-7-5	Apr 16/10
5-3-8	Feb 9/01	5-7-6	Apr 16/10
5-3-9	Feb 9/01	5-7-7	Apr 16/10
5-3-10	Feb 9/01	5-7-8	Apr 16/10
5-4-1	Feb 9/01	5-7-9	Jun 30/04
5-4-2	Feb 9/01	5-7-10	Jun 30/04
5-4-3	Feb 2/04	5-7-11	Apr 16/10
5-4-4	Jul 16/15	5-7-12	Apr 16/10
5-4-5	Feb 9/01	5-7-13	Apr 16/10
5-4-6	Feb 9/01	5-7-14	Apr 16/10
5-4-7	Feb 9/01	5-7-15	Apr 16/10
5-4-8	Feb 9/01	5-7-16	Apr 16/10
5-4-9	Feb 9/01	5-7-17	Apr 16/10
5-4-10	Feb 9/01	5-7-18	Apr 16/10
5-5-1	Sep 5/07	5-8-1	May 22/06
5-5-2	Sep 5/07	5-8-2	May 22/06
5-5-3	Sep 5/07	5-8-3	May 22/06
5-5-4	Sep 5/07	5-8-4	Apr 16/10
5-5-5	Feb 2/04	5-8-5	May 22/06
5-5-6	Feb 2/04	5-8-6	May 22/06
5-5-7	Feb 9/01	5-8-7	May 22/06
5-5-8	Feb 9/01	5-8-8	May 22/06
5-5-9	Feb 9/01	5-8-9	May 22/06
5-5-10	Feb 9/01	5-8-10	May 22/06
5-6-1	May 22/06	5-9-1	May 22/06
5-6-2	May 22/06	5-9-2	May 2/19
5-6-3	Apr 28/16	5-9-3	May 2/19
5-6-4	May 22/06	5-9-4	May 22/06
5-6-5	May 22/06	5-9-5	May 22/06
5-6-6	May 22/06	5-9-6	May 22/06
5-6-7	May 22/06	5-9-7	May 22/06
5-6-8	May 22/06	5-9-8	May 22/06
5-6-9	May 22/06	5-9-9	May 22/06
5-6-10	Jul 16/15	5-9-10	May 22/06
5-7-1	Apr 16/10	5-9-11	May 22/06
5-7-2	Jun 30/04	5-9-12	May 2/19

LIST OF EFFECTIVE PAGES

<u>PAGE</u>	<u>DATE</u>	<u>PAGE</u>	<u>DATE</u>
5-9-13	May 2/19	6-9	Nov 21/12
5-9-14	May 22/06	6-10	Feb 9/01
5-10-1	Feb 1/08	6-11	Feb 9/01
5-10-2	Jan 25/11	6-12	Feb 9/01
5-10-3	Apr 22/08	6-13	Nov 21/12
5-10-4	Apr 22/08	6-14	Apr 28/16
5-10-5	Feb 1/08	6-15	Nov 21/12
5-10-6	Feb 1/08	6-16	Feb 9/01
5-10-7	Feb 1/08	6-17	Feb 9/01
5-10-8	Feb 1/08	6-18	Aug 29/11
5-10-9	Feb 1/08	6-19	Feb 9/01
5-10-10	Apr 22/08	6-20	Jun 14/11
5-10-11	Jan 25/11	6-21	Feb 9/01
5-10-12	Feb 1/08	6-22	Feb 9/01
5-10-13	Feb 1/08	6-23	Feb 9/01
5-10-14	Feb 1/08	6-24	Feb 9/01
5-10-15	Feb 1/08	6-25	Apr 10/02
5-10-16	Feb 1/08	6-26	Jun 14/11
5-10-17	Apr 22/08	7-1	Nov 21/12
5-10-18	Feb 1/08	7-2	Apr 16/10
5-10-19	Feb 1/08	7-3	Jul 12/10
5-10-20	Feb 1/08	7-4	May 2/19
5-10-21	Apr 22/08	7-4.1	Apr 10/02
5-10-22	Apr 16/10	7-4.2	Apr 10/02
5-10-23	Feb 1/08	7-5	Feb 9/01
5-10-24	Feb 1/08	7-6	Feb 9/01
5-10-25	Feb 1/08	7-7	Feb 9/01
5-10-26	Jan 25/11	7-8	Feb 9/01
5-10-27	Jan 25/11	7-9	Apr 16/10
5-10-28	Jan 25/11	7-10	Apr 16/10
6-1	Jul 3/12	7-11	Sep 8/04
6-2	Feb 9/01	7-12	Jan 25/11
6-3	Feb 9/01	7-12.1	Jan 25/11
6-4	Feb 9/01	7-12.2	Jan 25/11
6-5	Apr 10/02	7-12.3	Jan 25/11
6-6	Jul 3/12	7-12.4	Jan 25/11
6-7	Jul 3/12	7-13	Jul 12/10
6-8	Jul 3/12	7-14	Jul 12/10

LIST OF EFFECTIVE PAGES

<u>PAGE</u>	<u>DATE</u>	<u>PAGE</u>	<u>DATE</u>
7-15	Jul 12/10	7-48	Jun 14/11
7-15.1	Jul 3/12	7-49	Jun 14/11
7-15.2	Jul 12/10	7-50	Jun 14/11
7-16	Nov 21/12	7-51	Apr 16/10
7-17	Nov 21/12	7-52	Apr 16/10
7-18	Feb 9/01	7-53	Apr 16/10
7-19	Apr 11/07	7-54	Feb 9/01
7-20	Apr 11/07	7-55	Apr 10/02
7-21	Feb 9/01	7-56	Nov 21/12
7-22	Jan 25/11	7-57	Jul 3/12
7-23	Jan 25/11	7-58	Jul 12/10
7-24	Jan 25/11	7-59	Jul 12/10
7-25	Jan 25/11	7-60	May 2/19
7-26	Jan 25/11	7-61	May 2/19
7-27	Jan 25/11	7-62	Apr 10/02
7-28	Jan 25/11	7-62.1	Jan 25/11
7-28.1	Jan 25/11	7-62.2	Jul 12/10
7-28.2	Jan 25/11	7-63	Jul 12/10
7-29	Nov 21/12	7-64	Jul 12/10
7-30	Feb 9/01	7-65	Jun 14/11
7-31	Apr 10/02	7-66	Feb 9/01
7-32	Jul 16/15	7-67	Aug 29/11
7-33	Jan 25/11	7-68	Apr 28/16
7-34	Jan 25/11	7-69	Jan 25/11
7-35	Jan 25/11	7-70	Jan 25/11
7-36	Feb 9/01	7-70.1	Jan 25/11
7-37	Jul 3/12	7-70.2	Jan 25/11
7-38	Jul 3/12	7-71	Jan 25/11
7-39	Feb 9/01	7-72	Jan 25/11
7-40	Feb 9/01	7-73	Jul 16/15
7-41	Feb 9/01	7-74	Jul 12/10
7-42	Feb 9/01	7-75	Jul 12/10
7-43	Apr 10/02	7-76	May 2/19
7-44	Apr 10/02	8-1	Aug 11/06
7-45	Feb 9/01	8-2	Aug 11/06
7-46	Feb 9/01	8-3	Sep 5/03
7-47	Feb 9/01	8-4	Jul 16/15

LIST OF EFFECTIVE PAGES

<u>PAGE</u>	<u>DATE</u>	<u>PAGE</u>	<u>DATE</u>
8-5	Aug 10/10	10-4	Apr 16/10
8-6	Aug 10/10	10-5	Apr 16/10
8-7	Feb 9/01	10-6	Apr 16/10
8-8	Feb 9/01	10-7	Apr 28/16
8-9	Feb 9/01	10-8	Apr 16/10
8-10	Feb 9/01	10-9	Apr 16/10
8-11	Aug 11/06	10-10	Apr 16/10
8-12	Jun 14/11	10-11	Apr 16/10
8-12.1	Jun 14/11	10-12	Apr 16/10
8-12.2	Jun 14/11	10-13	Apr 28/16
8-13	Jul 3/12	10-14	Apr 28/16
8-14	Aug 11/06	10-15	Apr 16/10
8-15	Jun 14/11	10-16	Apr 16/10
8-16	Aug 11/06	10-17	Apr 28/16
8-17	Feb 9/01	10-18	Apr 28/16
8-18	Feb 9/01	10-19	Apr 16/10
8-19	Jul 3/12	10-20	Apr 16/10
8-20	Aug 10/10	10-21	Apr 16/10
8-21	Jul 16/15	10-22	Apr 16/10
8-22	Jul 16/15	10-23	Apr 16/10
8-23	Jul 3/12	10-24	Apr 16/10
8-24	Jul 3/12	10-25	Apr 16/10
8-25	Apr 16/10	10-26	Apr 16/10
8-26	Apr 16/10	10-27	Apr 16/10
8-27	Feb 9/01	10-28	Apr 16/10
8-28	Feb 9/01	10-29	Apr 16/10
9-1	Apr 16/10	10-30	Apr 16/10
9-2	Sep 8/04	10-31	Apr 16/10
9-3	Feb 9/01	10-32	Apr 28/16
9-4	Feb 9/01	10-33	Apr 28/16
9-5	Feb 9/01	10-34	Apr 28/16
9-6	Apr 16/10	10-35	Apr 28/16
9-7	Apr 16/10	10-36	Apr 28/16
9-8	Sep 8/04		
10-1	Apr 16/10		
10-2	Apr 16/10		
10-3	Apr 16/10		

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INTRODUCTION

INTRO-1. General

This manual contains the operating instructions, procedures and limitations for the Enstrom 480B helicopter. The manual is divided into two basic parts, the FAA approved Rotorcraft Flight Manual (RFM) and Supplemental Data Provided by The Enstrom Helicopter Corporation (Enstrom). Chapters 1, 2, 3, 4, and 5 make up the FAA approved RFM. It is required by Federal Regulations that this manual be carried in the helicopter at all times.

Chapter 5, *Optional Equipment Supplements*, contains the optional equipment supplements incorporated into this basic RFM. Refer to the Enstrom Helicopter Corporation web site and the Technical Support page for a listing of other approved Enstrom 480B Optional Equipment Supplements not contained in this basic RFM. The pilot is responsible for determining if other additional optional equipment supplements are to be carried in the helicopter.

INTRO-2. Warnings, Cautions, and Notes

Warnings, Cautions, and Notes emphasize important and critical instructions and are used for the following conditions:

WARNING

An operating procedure, practice, etc. which, if not correctly followed, could result in personal injury or loss of life.

CAUTION

An operating procedure, practice, etc. which, if not strictly observed, could result in damage to or destruction of equipment.

NOTE

An operating procedure, practice, etc., which is essential and requires additional information.

INTRO-3. Description

This manual contains the best operating instructions and procedures for the 480B helicopter under most circumstances. The observance of limitations, performance and weight and balance data provided is mandatory. The observance of procedures is mandatory except when modification is required because of multiple emergencies, adverse weather, terrain, etc. Your flying experience is recognized, and therefore, basic flight principles are not included. **THIS MANUAL SHALL BE CARRIED IN THE HELICOPTER AT ALL TIMES.**

INTRO-4. Table of Contents

The table of contents lists every titled paragraph, figure, and table contained in this manual.

INTRO-5. Reporting of Errors

Every effort is made to keep this publication current and error free. However, we cannot correct an error unless we know of its existence. You are encouraged to report errors, omissions, and recommendations for improving this publication by contacting The Enstrom Helicopter Corporation.

INTRO-6. Explanation of Change Symbols

Except as noted below, changes to the text and tables, including new material on added pages, are indicated by a vertical line in the margin. The vertical line will extend close to the entire area of the material affected. Symbols show current changes only. Change symbols are not utilized to indicate changes in the following:

1. Indexes, figures, and tabular data where the change cannot be readily identified.
2. Blank space resulting from the deletion of text, illustration, or a table.
3. Correction of minor errors, such as spelling, punctuation, relocation of material, etc. unless such correction changes the meaning of the material.

INTRO-7. Use of Words, Shall, Should, and May

Within this technical manual, the word "shall" is used to indicate a mandatory requirement. The word "should" is used to indicate a nonmandatory but preferred method of accomplishment. The word "may" is used to indicate an acceptable method of accomplishment.

INTRO-8. Definitions of Abbreviations

Table INTRO-1 provides definitions for abbreviations used in this manual. The same abbreviation applies for either singular or plural applications.

TABLE INTRO-1. LIST OF ABBREVIATIONS

<u>ABBREVIATION</u>	<u>DEFINITION</u>
ABS	Absolute
AGL	Above Ground Level
AH	Amp Hour
ALT	Altitude
B.L.	Butt Line
C	Celsius
CAS	Calibrated Airspeed
CG	Center of Gravity
C.L.	Center Line
CONF	Configuration
CONT	Continuous
END	Endurance
F	Fahrenheit
FAA	Federal Aviation Administration
FLT	Flight
FPM	Feet per Minute
F.S.	Fuselage Station
FT	Foot
FT/MIN	Feet per Minute
FWD	Forward

CHAPTER 1. OPERATING LIMITATIONS**TABLE OF CONTENTS**

<u>SECTION</u>	<u>DESCRIPTION</u>	<u>PAGE</u>
	Table of Contents	1-1
Section I	Introduction	1-3
Paragraph 1-1	Purpose.....	1-3
1-2	General	1-3
1-3	Operational Limits.....	1-3
Section II	General	1-3
Paragraph 1-4	Kinds of Operation	1-3
1-5	Minimum Crew Requirements	1-4
Section III	Helicopter & System Limits	1-5
Paragraph 1-6	Instrument Markings	1-5
1-7	Rotor Limitations	1-5
1-8	Transmission Limits.....	1-5
1-9	Engine Limits	1-6
1-10	Starter Limits	1-9
Section IV	Operation Limits	1-17
Paragraph 1-11	Airspeed Limits	1-17
1-12	Altitude Limits	1-18
1-13	Load Limits	1-23
1-14	Maneuvers	1-23
1-15	Environmental	1-24
1-16	Restrictions in Use of Anti-torque Pedals.....	1-25
1-17	Placards	1-25

LIST OF FIGURES

<u>FIGURE NO.</u>	<u>DESCRIPTION</u>	<u>PAGE</u>
1-1	Instrument Markings.....	1-11
1-2	Maximum Allowable Torque and N_2 ..	1-16.2
1-3	Airspeed Operating Limits	1-19
1-4	V_{NE} Envelopes.....	1-22
1-5	V_{NE} Placards	1-27

LIST OF TABLES

<u>TABLE NO.</u>	<u>DESCRIPTION</u>	<u>PAGE</u>
1-1	Kinds of Operation Equipment List.....	1-4

CHAPTER 1

OPERATING LIMITATIONS

SECTION I. INTRODUCTION

1-1. Purpose

1. This chapter includes operating limitations and restrictions that must be observed during ground and flight operations.

1-2. General

1. The operating limitations set forth in this chapter are the direct results of design analysis and flight tests. Compliance with these limits will allow the pilot to derive maximum utility from the helicopter.

1-3. Operational Limits

1. Anytime an operational limit is exceeded an appropriate entry shall be made in the aircraft log book. The entry shall state what limit or limits were exceeded, and the range and time beyond the limits including any additional data that would aid maintenance personnel in the proper disposition of the entry and inspection of the aircraft.

SECTION II. GENERAL

1-4. Kinds of Operation

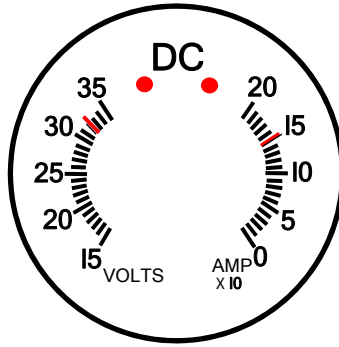
1. This aircraft is certified in normal category for day and night VFR operation in non-icing conditions when the appropriate instruments and equipment required by the airworthiness and/or operating rules are installed and approved and are in operable condition. Table 1-1 lists the equipment that is required to be operable for typical VFR operations. Additional equipment may be required by operational regulations. The pilot is responsible for determining if there are additional requirements.

Table 1-1. Kinds of Operation Equipment List

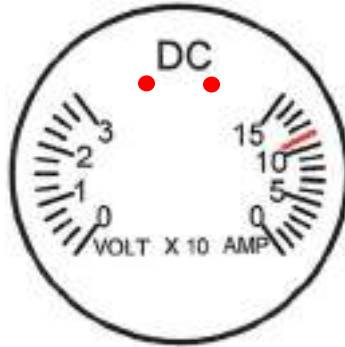
System and/or Component	VFR DAY	VFR NIGHT	NOTES
Airspeed Indicator	1	1	
Altimeter	1	1	
AMP/Volt	1	1	
Clock	0	0	
Compass	1	1	
Dual Tachometer	1	1	
Engine Oil Temperature/ Pressure	1	1	
Fuel Quantity Indicator	1	1	
N1 Indicator	1	1	
OAT	1	1	
Torque Indicator	1	1	
TOT Indicator	1	1	
Transmission Oil Temperature	1	1	
Anticollision Lights	0	0	
Instrument Lights	0	1	
Landing Light	0	1	
Position Lights	0	1	
Switch and Circuit Breaker Panel Lighting	0	1	

1-5. Minimum Crew Requirements

1. The minimum crew is one pilot. Solo from left seat only.



150 Amp System Indicator



110 Amp System Indicator

DUAL VOLT/AMMETER

VOLT		
32 Vdc	Red Radial	Maximum Voltage (S/N 5134 and sub.)
AMMETER		
150 Amps	Red Radial	Maximum Current (S/N 5134 and sub.)
110 Amps		Maximum Current (Prior to S/N 5134)

Figure 1-1. Instrument Markings

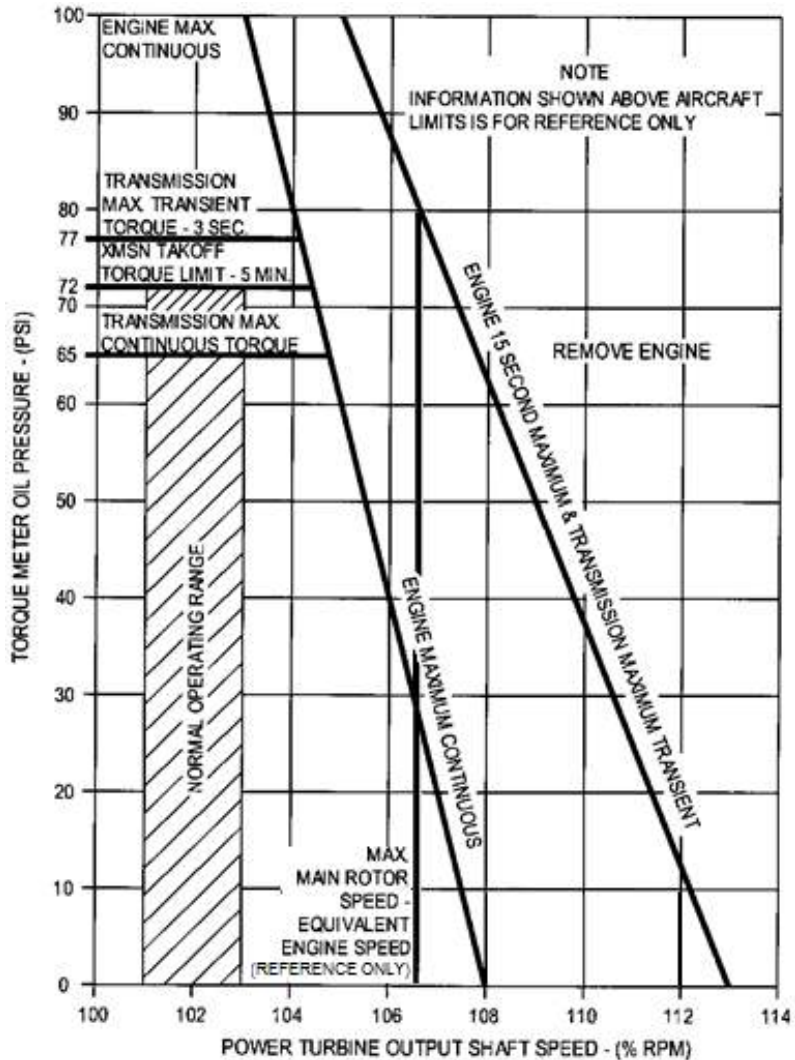


Figure 1-2. Maximum Allowable Torque and N₂

CHAPTER 2. NORMAL PROCEDURES**TABLE OF CONTENTS**

<u>SECTION</u>	<u>DESCRIPTION</u>	<u>PAGE</u>
	Table of Contents	2-1
Section I	Flight Planning.....	2-3
Paragraph 2-1	Flight Planning.....	2-3
2-2	Operating Limits	2-3
2-3	Weight, Balance and Loading	2-3
2-4	Performance	2-3
Section II	Operating Procedures and	
	Maneuvers	2-4
Paragraph 2-5	General	2-4
2-6	Checklist.....	2-4
2-7	Checks	2-4
2-8	Before Preflight Check	2-4
2-8.1	Preflight Check –	
	Fuel Management.....	2-5
2-9	Preflight Check – Exterior Check	2-6
2-10	Cabin Left Side	2-6
2-11	Aft Fuselage Left Side.....	2-7
2-12	Tailcone Left Side.....	2-9
2-13	Tailcone Right Side	2-9
2-14	Aft Fuselage Right Side	2-10
2-15	Fuselage Top Area.....	2-12
2-16	Cabin Right Side	2-12
2-17	Cabin Left Side	2-13
2-18	Before Starting Engine	2-13
2-19	Starting Engine	2-16
2-20	Engine Runup	2-19
2-21	Takeoff to Hover	2-20
2-22	Hovering Turns	2-20
2-23	Sideward and Rearward	
	Hovering Flight.....	2-21
2-24	Hover Taxi.....	2-21
2-25	Cyclic Trim.....	2-21
2-26	Hover Check.....	2-21
2-27	Before Takeoff	2-22
2-28	Normal Takeoff.....	2-23

CHAPTER 2. NORMAL PROCEDURES**TABLE OF CONTENTS**

<u>SECTION</u>		<u>DESCRIPTION</u>	<u>PAGE</u>
	2-29	Maximum Power Takeoff Profiles.....	2-24
	2-30	Crosswind Takeoff.....	2-26
	2-31	Climb.....	2-26
	2-32	Cruise.....	2-26
	2-33	Descent.....	2-26
	2-34	Before Landing.....	2-26
	2-35	Approach and Landing.....	2-27
	2-36	Landing From A Hover.....	2-28
	2-37	After Landing.....	2-28
	2-38	Engine Shutdown.....	2-29
	2-39	Before Leaving The Helicopter ...	2-30
	2-40	Night Flight.....	2-30
Section III		Passenger Briefing.....	2-31
Paragraph	2-41	Passenger Briefing.....	2-31
Section IV		Adverse Environmental Conditions.....	2-32
Paragraph	2-42	Cold Weather Operation.....	2-32
	2-43	Cold Weather Inspection.....	2-32
	2-44	Cold Weather Checks.....	2-34
	2-45	Snow.....	2-36
	2-46	Desert and Hot Weather Operations.....	2-39
	2-47	Icing Conditions.....	2-40
	2-48	High Altitude Operations.....	2-41
	2-49	High Altitude Cold Weather Operation.....	2-42
	2-50	Deceleration Check.....	2-42

LIST OF FIGURES

<u>FIGURE NO.</u>	<u>DESCRIPTION</u>	<u>PAGE</u>
2-1	Exterior Check.....	2-6

20. Check the TORQUE, ENGINE OIL TEMP/PRESS, TRANSMISSION OIL TEMP, TOT, N₁, VOLT/AMP, and FUEL QUANTITY indicator status during and after the power-on self-tests (para. 7-28.9).

(O) 21. Attitude indicator(s) – Reset by pulling the Fast Erect knob.

22. Warning lights – Check for the illumination of the ROTOR RPM and ENGINE OUT warning lights.

23. Caution panel – Test. Check that the MASTER CAUTION light, FIRE WARNING light, and all of the segments in the segmented caution panel illuminate. Release the switch and check that all lights go out except the ENGINE OUT and ROTOR RPM warning lights and DC GEN and ENG OIL PRESS caution lights.

24. Check the temperature and select correct V_{NE}/C.G. placard.

NOTE

V_{NE} is based on a combination of pressure altitude and temperature at flight conditions and take-off gross weight and takeoff c.g. Proper determination of take-off gross weight and c.g. is required to determine the appropriate V_{NE} envelope.

25. Clock – Checked and set.

(O) 26. Digital Fuel Quantity – Check. Enter new fuel quantity, if required, as follows:

- a. Determine total fuel quantity on board from the fuel quantity gauge and the fueling records.
- b. Press the center toggle switch to the left (fuel remaining) position. If it agrees with the quantity on board, release the toggle switch and press "ENTER".

- c. If it reads less than the quantity on board, hold the center toggle switch to the left and simultaneously press the "ENTER" button and hold. Fuel quantity will increment.
- d. Release all switches when the digital display reads the correct amount, then press "ENTER".
- e. If it reads more than the quantity on board, hold the center switch to the right and press the "ENTER" button and hold both. The fuel quantity will decrement.
- f. Release all switches when the digital display reads the correct amount. Then press "ENTER".

27. Engine out/low rotor audio – Test by releasing the collective friction, raising the collective until both audio alarms are heard, then lowering the collective to full down and resetting the collective friction.

28. Throttle – Check closed.

29. Cyclic trim – Check by displacing the cyclic trim switch coolie hat each direction - forward, aft, left, and right - for a few seconds to determine that the motors run the proper direction and reverse properly. Then center the cyclic.

30. Anticollision lights (STRB LTS or BCN LTS) – ON.

(N) 31. POS LTS switch – ON as required.

2-19. Starting Engine

1. Exhaust area – clear, free of combustible foliage.
2. Rotor blades – Check clear and untied.
3. Verify TOT.

NOTE

If the TOT is above 150°C, the pilot may elect to motor the engine with the throttle off until the TOT is below 150°C, prior to beginning this engine start sequence. If the engine is equipped with a start counter, this will count as a "START" but can be deducted in the engine records in accordance with the Rolls-Royce 250-C20 Series Operation and Maintenance Manual.

4. Engine – Start as follows:
 - a. Starter switch – Press and hold. Simultaneously start the clock stop watch function to time the start to 58% N₁.
 - b. TOT – Below 150°C. Motor engine as necessary to lower TOT below 150°C.
 - c. Throttle – Open quickly to the idle stop after the N₁ RPM passes through 12-15%. Observe recommended minimum N₁ speeds as noted below:

NOTE

If there is a delay of more than 3 seconds between opening the throttle and light off of the engine, the operator should return the throttle to the OFF position and motor the engine for 30 seconds to clear the fuel from the burner can.

OAT (Outside Air Temp)	Minimum N ₁ Speed
7°C and above	15%
7°C down to -18°C	13%
-18°C and below	12%

NOTE

It is not necessary to wait for the N₁ to peak.

- d. Monitor TOT for over temperature conditions. Refer to Chapter 1 for limitations.
- e. Starter switch – Release at 58% N_1 . Note elapsed time for start. Observe the starter limitations prescribed in Chapter 1 and the average engine starting time shown in Chapter 9.
- f. Engine oil pressure – Check.
- g. Gas producer – Check 59-65% N_1 .
- h. N_2 – Check stabilized.

CAUTION

If the main rotor is not moving when 30% N_1 is reached, abort the start and make an entry in the aircraft log book.

5. Ground power unit – Disconnect (if used).

CAUTION

Check that the ground power unit is disconnected prior to turning the Generator switch ON.

6. MAIN GEN switch – ON, check DC GEN caution light out, and Volt/Ammeter indicates a load. Wait until the ammeter load decreases below the redline before turning any other electrical system on.

7. Avionics master switch – ON when the ammeter indicates less than 50 amps.

CHAPTER 5**SUPPLEMENT 9****SEARCHLIGHT****TABLE OF CONTENTS**

<u>SECTION</u>		<u>DESCRIPTION</u>	<u>PAGE</u>
		Table of Contents	5-9-1
Section I		General	5-9-3
Paragraph	5-9-1	Introduction	5-9-3
	5-9-2	Description	5-9-3
Section II		Operating Limitations.....	5-9-4
Paragraph	5-9-3	General	5-9-4
	5-9-4	Placards	5-9-4
Section III		Normal Procedures	5-9-5
Paragraph	5-9-5	Preflight Check.....	5-9-5
	5-9-6	Searchlight Operation	5-9-6
	5-9-7	Searchlight/Gimbal Assembly Removal	5-9-7
	5-9-8	Searchlight/Gimbal Assembly Installation.....	5-9-8
	5-9-9	Control Box Removal.....	5-9-8
	5-9-10	Control Box Installation	5-9-8
Section IV		Emergency Procedures	5-9-9
Paragraph	5-9-11	Electrical System Failure.....	5-9-9
	5-9-12	Emergency Pop-Out Float Deployment.....	5-9-9
Section V		Performance	5-9-11
Paragraph	5-9-13	General	5-9-11
Section VI		Weight and Balance	5-9-12
Paragraph	5-9-14	General	5-9-12
	5-9-15	Lateral Offset Moment.....	5-9-13

LIST OF TABLES

<u>TABLE NO.</u>	<u>DESCRIPTION</u>	<u>PAGE</u>
5-9-1	Weight and Balance Information – (Standard Kit).....	5-9-12
5-9-2	Weight and Balance Information – (Pop-Out Floats)	5-9-12
5-9-3	Lateral Offset Moment Information – (Standard Kit).....	5-9-13
5-9-4	Lateral Offset Moment Information – (Pop-Out Floats)	5-9-13

SUPPLEMENT 7**SEARCHLIGHT****SECTION I. GENERAL****5-9-1. Introduction**

1. This supplement must be attached to the Basic Flight Manual when the Searchlight Kit, P/N 4220056 is installed on the aircraft. Operation in compliance with Chapter 1, Operating Limitations, of the Basic Flight Manual is mandatory except as modified by this supplement. Other approved sections and supplemental data are recommended procedures.

5-9-2. Description

1. The Searchlight Kit, P/N 4220056, provides for installation of a SpectroLab, Inc. SX-5 Starburst® Searchlight. Two mounting options allow for either a standard mount or an elevated mount. The elevated mount must be used if the aircraft is equipped with the Emergency Floats Kit, P/N 4220091.

2. The Searchlight Kit consists of a tubular mount that attaches to the right side of the landing gear assembly aft crosstube and the associated airframe wiring installation. The SX-5 Starburst® system consists of the searchlight and gimbal assembly, junction box assembly, control box assembly, and associated wiring harnesses. The electrical power circuit for the searchlight is protected by a 40 amp voltage limiter (fuse) located in the keel assembly under the cabin floor.

NOTE

This flight manual supplement provides general operating procedures for the SX-5 Starburst® Searchlight. Always refer to the latest revision of the SX-5 Starburst® Searchlight User's Manual (Doc# 031718) for specific operating procedures.

SECTION II. OPERATING LIMITATIONS**5-9-3. General**

1. Same as Basic Flight Manual.

5-9-4. Placards

1. The following placard must be installed in view of the aircraft crew (SpectroLab P/N 031751):

- MONITOR ELECTRICAL LOADMETER WITH SEARCHLIGHT ON. REDUCE ELECTRICAL LOAD AS NEEDED TO REMAIN WITHIN CONTINUOUS OPERATING LIMITS.
- MAGNETIC COMPASS UNRELIABLE WHEN SEARCHLIGHT IS OPERATING.
- TURN OFF SEARCHLIGHT WHEN ENTERING CLOUDS OR FOG. DO NOT OPERATE SEARCHLIGHT BELOW 50 FEET.
- RETURN SEARCHLIGHT TO HORIZONTAL BEFORE LANDING

2. The following placard must be installed in view of the aircraft crew if the aircraft is equipped with the emergency pop-out floats:

WARNING
TURN SEARCHLIGHT OFF
BEFORE DEPLOYING EMERGENCY
POP-OUT FLOATS

SECTION V. PERFORMANCE**5-9-13. General**

1. Same as Basic Flight Manual.

SECTION VI. WEIGHT AND BALANCE

5-9-14. General

1. A new weight and balance should be recalculated per the instructions in Chapter 6 of the Basic Flight Manual using the information listed below.

Table 5-9-1. Weight and Balance Information
(Standard Kit)

<u>Equipment</u>	<u>Weight</u> (lbs)	<u>Arm</u> (in)	<u>Moment</u> (in-lbs)
Searchlight Mount with Electrical Harness	5.4	170.1	918.5
Junction Box**	6.3	222.0	1398.6
Searchlight/Gimbal Assembly	21.5	171.3	3683.0
Total*	33.2	180.7	6000.1

Table 5-9-2. Weight and Balance Information
(Elevated Kit)

<u>Equipment</u>	<u>Weight</u> (lbs)	<u>Arm</u> (in)	<u>Moment</u> (in-lbs)
Searchlight Mount with Electrical Harness	7.8	168.8	1316.6
Junction Box**	6.3	222.0	1398.6
Searchlight/Gimbal Assembly	21.5	171.3	3683.0
Total*	35.6	179.7	6398.2

* Total does not include control box and cable (1.5 lbs) or non-removable portion of electrical harness.

** Standard location; location may vary depending on other optional equipment installations.

5-9-15. Lateral Offset Moment

1. Use the lateral offset moment information in Tables 5-9-3 or 5-9-4 when computing the lateral center of gravity for the aircraft.

Table 5-9-3. Lateral Offset Moment Information
(Standard Kit)

<u>Equipment</u>	<u>Lateral Offset Moment</u> (in-lbs)
Searchlight Mount with Electrical Harness	187.9
Junction Box**	55.4
Searchlight/Gimbal Assembly	1057.8
<hr/>	
Total*	1301.1

Table 5-9-4. Lateral Offset Moment Information
(Elevated Kit)

<u>Equipment</u>	<u>Lateral Offset Moment</u> (in-lbs)
Searchlight Mount with Electrical Harness	262.9
Junction Box**	55.4
Searchlight/Gimbal Assembly	1057.8
<hr/>	
Total*	1376.1

* Total does not include control box and cable (1.5 lbs) or non-removable portion of electrical harness.

** Standard location; location may vary depending on other optional equipment installations.



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**CHAPTER 7 HELICOPTER AND SYSTEMS
DESCRIPTION AND OPERATION**

TABLE OF CONTENTS

<u>SECTION</u>	<u>DESCRIPTION</u>	<u>PAGE</u>
Section VIII	Heating and Ventilation.....	7-54
Paragraph 7-53	Bleed Air Heating and Defroster System.....	7-54
	7-54 Windshield Demister	7-54
	7-55 Ventilation System	7-55
Section IX	Electrical Power Supply & Distribution System	7-56
Paragraph 7-56	General	7-56
	7-57 Battery	7-57
	7-58 External Power Receptacle.....	7-57
	7-59 Generator.....	7-58
	7-60 Generator Caution Light.....	7-59
	7-61 Controls and Indicators.....	7-59
Section X	Lighting.....	7-63
Paragraph 7-62	Position Lights	7-63
	7-63 Anticollision Lights.....	7-63
	7-64 Landing Light.....	7-63
	7-65 Instrument Lights	7-64
	7-66 Cabin Dome Light	7-64
	7-67 Map/Utility Light	7-65
Section XI	Flight Instruments	7-66
Paragraph 7-68	Airspeed Indicator	7-66
	7-69 Optional Pitot Heater.....	7-66
	7-70 Altimeter and Encoder.....	7-66
	7-71 Attitude Indicator	7-67
	7-72 Instantaneous Vertical Velocity Indicators.....	7-67
	7-73 Turn and Slip Indicator	7-67
	7-74 Outside Air Temperature Indicator	7-68
	7-75 Magnetic Compass	7-68
	7-75.1 Alternate Static Air Source	7-68

CHAPTER 7 HELICOPTER AND SYSTEMS DESCRIPTION AND OPERATION

TABLE OF CONTENTS

<u>SECTION</u>	<u>DESCRIPTION</u>	<u>PAGE</u>
Section XII	Caution & Warning Systems	7-69
Paragraph 7-76	Caution & Warning Systems	7-69
Section XIII	Miscellaneous Systems	7-75
Paragraph 7-77	Ignition Lock Switch.....	7-75
7-78	Hour Meter	7-75
7-79	Start Counter.....	7-75
7-80	Power Sockets.....	7-76
7-81	Headset Jacks.....	7-76

LIST OF FIGURES

<u>FIGURE NO.</u>	<u>DESCRIPTION</u>	<u>PAGE</u>
7-1	General Arrangement Diagram	7-9
7-2	Principle Dimensions Diagram	7-11
7-3	Instrument Panel	7-12
7-4	Pedestal Panel	7-14
7-5	Slider Control Panel	7-20
7-6	Fuel System Diagram	7-30
7-7	Collective Control Box	7-34
7-8	Collective Friction System	7-36
7-9	Cyclic Grip Switches.....	7-39
7-10	Power Train.....	7-47
7-10.1	N1-N2-NR-TOT Switch.....	7-62
7-11	External Power Receptacle.....	7-62.1
7-12	Fuse Panel – 110 Amp System.....	7-62.2
7-12.1	Fuse Panel – 150 Amp System.....	7-62.2
7-13	Warning and Caution Lights.....	7-71

7-60. Generator Caution Light

1. Anytime that the DC generator output voltage is less than the battery voltage or the generator is OFF or otherwise disconnected from the aircraft main bus, the generator caution light, marked **DC GEN** on the caution panel, will illuminate.

7-61. Controls and Indicators

1. Volt-Ammeter. The dual indicating volt-ammeter (**DC**), located on the instrument panel, is a microprocessor based indicator and indicates the main bus voltage (**VOLT**) and the current load (**AMP**) being used. The indicator's microprocessor performs a power-on self-test when power is connected to the indicator and also continuously monitors "sensor reasonableness" (Refer to para. 7-28.9). The microprocessor in the indicator will illuminate the LED RED when the maximum operating limits are exceeded (Refer to para. 7-76.2.c). The indicator is powered by the aircraft 28-volt electrical system through the **VOLT/AMP** circuit breaker.

2. Battery Switch. The **BATT** switch is located at the top of the center pedestal panel. Battery electrical power is supplied to the helicopter's electrical system when the switch is in the **ON** position. When the switch is in the **ON** position, it closes the circuit to the battery relay coil and battery power is then connected to the main electrical bus. When the switch is placed in the **OFF** position, it opens the circuit to the battery relay coil and battery power is disconnected from the main electrical bus.

3. Generator Switch. The generator switch, labeled **MAIN GEN**, is located at the top of the center pedestal panel to the left of the battery switch. In the **ON** position the generator field is energized through the generator control unit and 28-volt generator power is supplied through the generator relay to the main electrical system bus. In the **OFF** position, the generator is disconnected from the main electrical bus.

NOTE

On S/N's 5039-5076 and 5078-5084, the generator switch will be automatically tripped OFF if the engine starter button is pushed. It must be placed ON after the engine start is complete. On S/N's 5077, 5085 and subs., the generator switch must manually be cycled to RESET then ON if the starter button is pushed with the generator switch ON.

4. N1-N2-NR-TOT Switch. The **N1-N2-NR-TOT** switch (Figure 7-10.1), located at the top right side of the instrument panel, controls the emergency electrical power circuits that provide power to the gas producer (N₁) tachometer, Dual (N₂/N_R) tachometer, and the TOT indicator in case of a complete electrical system failure. Emergency power is supplied to the indicators by moving the switch from the **BUS** position to the **BATT** position. The emergency electrical power circuits are protected by the N1, N2, NR, and TOT circuit breakers located on the right side of the back wall in the engine compartment (Figure 7-11). A yellow LED, located next to the switch, illuminates when the switch is in the **BATT** position.

NOTE

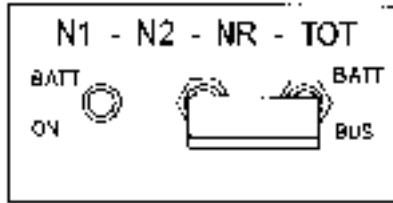
Early 480B's are equipped with a gas producer tachometer which does not require aircraft electrical power for operation. The emergency electrical power switch in these aircraft is labeled N2-NR-TOT.

5. Avionics Master Switch. The **AVI MSTR** switch (Figure 7-4), located at the top of the center pedestal panel, controls and provides electrical power to the avionics bus. Equipment such as GPS/Nav/Com, transponder, CDI, HSI, or EHSI, or other avionic units are typically connected to the avionics bus. Switching the **AVI MSTR** to the OFF position disconnects electrical power to the avionics bus.

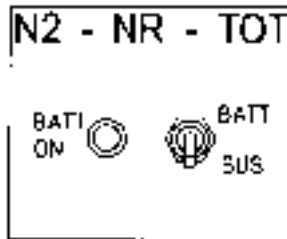
6. Circuit breakers and circuit breaker switches. The primary circuit breakers and circuit breaker switches for the aircraft are located either on the center pedestal panel or the instrument panel. Each individual circuit breaker/switch is labeled for the particular electrical circuit protected. In the event a circuit becomes overloaded, the circuit breaker protecting the circuit will pop out or the circuit breaker switch will release to the **OFF** position. The circuit may be reactivated by pushing the circuit breaker button back in or by cycling the circuit breaker switch thereby resetting the circuit breaker. Circuits for devices using direct power feed from the battery are protected by circuit breakers located directly beneath the external power receptacle on the right side of the backwall in the engine area.

7. Fuses. Nonessential equipment electrical circuits not protected by circuit breakers are fuse protected. The fuses are located on the left side of the center pedestal (Figure 7-12). For aircraft S/N 5134 and subsequent, the fuse panel is an option.

8. Current Limiters. The current limiter, located on the right side of the backwall in the engine compartment, is a non-resettable fuse that protects the main electrical bus in case of a direct short to ground. Optional current limiters are installed as needed for additional electrical circuits.



Current Configuration



Early 480B Configuration

Figure 7-10.1. N1-N2-NR-TOT Switch

SECTION XIII. MISCELLANEOUS SYSTEMS**7-77. Ignition Lock Switch**

1. The ignition lock switch, located on the left side of the center pedestal (Figure 7-12), must be in the **ON** (horizontal) position for engine start-up. The switch is wired in the engine start circuit between the start relay circuit breaker and the starter button. The switch must be in the **OFF** (vertical) position to remove the key.

7-78. Hour Meter

1. The hour meter, located on the left side of the center pedestal (Figure 7-12), records engine operating time. The hour meter is powered by the aircraft 28-volt electrical system through the **HR METER** circuit breaker and is controlled by an oil pressure switch mounted in parallel with the engine oil pressure transducer. On aircraft prior to S/N 5134, the hour meter circuit is protected by the **HR METER** fuse. Starting with aircraft S/N 5048, a collective microswitch is incorporated into the hour meter system. The hour meter in aircraft S/N 5048 and subsequent records flight time.

7-79. Start Counter

1. The start counter, located on the left side of the center pedestal, records when electrical power is supplied to the engine ignition exciter. Start count information is required for tracking life limited components of the engine. The start counter is powered by the aircraft 28-volt electrical system through the **IGN EXCITE** circuit breaker.

NOTE

Prior to serial number 5048, the start counter is located next to the ignition exciter on the engine.

7-80. Power Sockets

1. The aircraft may be equipped with optional power sockets. The power sockets provide a source of 28Vdc and/or 14Vdc power for powering portable/removable devices from the aircraft electrical system. The power sockets, located on the top or sides of the center pedestal assembly, are protected by either fuses or circuit breakers (refer to the supplemental schematic diagrams provided with the aircraft).

2. The power sockets are placarded with the voltage type and maximum current load.

7-81. Headset Jacks

1. The aircraft is equipped with headset jacks for each seat position. Insert the headset plug into the jack that corresponds with the seat in the aircraft.

NOTE

The headset jack locations described below are typical for a 4- or 5-place configuration.

a. The pilot and passenger #4 headset jacks (HDST PLT and HDST PASS) are located on the upper left side of the cabin backwall. The co-pilot headset jack (HDST CO-PLT) is located on the right side of the cabin behind the co-pilot seat near the floor. Passenger #1 (co-pilot seat position) headset jack (HDST PASS) is located on the right side of the lower console. Passenger #2 and passenger #3 headset jacks (HDST PASS) are located on the upper right side of the cabin backwall.

NOTE

Noise-cancelling powered headsets must be switched to ON.

2. Volume Adjustment. Refer to the specific model headset, ICS/VOX or audio panel operation manual for volume adjustment.