c/o Sikorsky Aircraft Div., 6900 Main St., Stratford, CT 06601-1381

United States of America
FEDERAL COMMUNICATIONS COMMISSION
EXPERIMENTAL
RADIO STATION CONSTRUCTION PERMIT
AND LICENSE

EXPERIMENTAL	K A 2 X Z H
(Nature of Service)	(Call Sign)
XD MO	3891-EX-PL-93
(Class of station)	(File number)

NAME UNITED TECHNOLOGIES CORPORATION

Mobile: Vicinity of Western Long Island Sound, NY (Area bounded by 4120N
(Location of station)
7330W4055N7330W4120N7230W4055N7230W)

Subject to the provisions of the Communications Act of 1934, subsequent acts, and treaties, and all regulations heretofore or hereafter made by this Commission, and further subject to the conditions and requirements set forth in this license, the licensee hereof is hereby authorized to use and operate the radio transmitting facilities hereinafter described for radio communications.

Frequency MHz	Authorized Power (watts)	Emission Designator
2290.5	4 (ERP)	2M72F2D

Frequency Tolerance: ± 0.005%

Operation: In accordance with Sc. 5.202(a), (b) & (c) of the Commission's Rules.

Special Conditions:

1. The station identification requirements of Section 5.152 of the Commission's rules are waived.

This authorization effective November 23, 1993 and will expire 3:00 A.M. EST October 1, 1995

FEDERAL COMMUNICATIONS COMMISSION

Federal Communications Commission
Washington, D.C. 20554

Approved by OMB
3060-0065
Expires 12/31/89

APPLICATION FOR NEW OR MODIFIED RADIO STATION AUTHORIZATION UNDER PART 5 OF FCC RULES
EXPERIMENTAL RADIO SERVICE (OTHER THAN BROADCAST)

A. Applicant's Name and Post Office address
(Give street, city, state, and ZIP Code. See Instruction No. 4)

United Technologies Corporation
Sikorsky Aircraft Division
6900 Main Street
Stratford, CT 06601-1381

DO NOT WRITE IN THIS BLOCK

File No. 3891-EX-PL-92

2.(a) Application for *(check only one box)*

☒ New Station ☐ Modification of existing authorization

2.(b) For Modification indicate below

File No.: Call Sign:

3. Application for modification indicate change in (check all that apply)

☐ Frequency ☐ Emission ☐ Power ☐ Location

☐ Other particulars *(describe below or in attached Exhibit No. _____)*

4. Particulars of Operation *(See instructions below)*

Frequency (State Whether kHz or MHz) (A)	POWER (B)	POWER (C)	POWER (D)	EMISSION (E)	MODULATING SIGNAL (F)	NECESSARY BANDWIDTH (kHz) (G)
2290.5 MHz	5 W	4 W	MEAN	F2D	(1) 860 KHz	2720 KHz
					(3) 500 KHz	

(A) List each frequency or frequency band separately. (If more space is required, attach as Exhibit No. _____).
(B) Insert maximum R.F. output power at the transmitter terminals. Specify units.
(C) Insert maximum effective radiated power from the antenna (If pulsed emission specify peak power).
(D) Insert "MEAN" or "PEAK" (See definitions in Part 5).
(E) List each type of emission separately for each frequency. (See Section 2.201 FCC Rules.)
(F) Insert as appropriate for the type of modulation:
(1) the maximum speed of keying in bauds;
(2) maximum audio modulating frequency;
(3) frequency deviation of carrier;
(4) pulse duration and repetition rate.
For complex emissions, describe in detail in the space provided below.
(G) Describe how the necessary bandwidth was determined in space provided below.

F_t = 430 KHz TM data freq
F_b = 2 x 430 KHz = 860 KHz Baud freq (Manchester encoding)
dF = 500 KHz Freq deviation
BW = 2 x (dF + Fb) = 2720 KHz (Carson's rule)

5(a). Proposed location of transmitter and transmitting antenna (Check only one box)

☐ FIXED/BASE ☒ MOBILE ☐ BASE & MOBILE

(b) If permanently located at a fixed location, give below

State	County	City or Town

Number and street (or other indication of location)

(c) Geographical coordinates exact to the nearest second

North Latitude	West Longitude
° ' "	° ' "

(d) If mobile, describe the exact area of operation

Area bounded by: N4120 W7330
N4055 W7330
N4120 W7230
N4055 W 7230
Western Long Island Sound

(e) Geographical coordinates of the approximate center of proposed area of operation (mobile applications)

North Latitude	West Longitude
41 ° 05 ' 00 "	73 ° 00 ' 00 "

6. Is a directional antenna *(other than radar)* used? ☐ Yes ☒ No

If "YES", give the following information:

(a) Width of beam in degrees at the half-power point _____
(b) Orientation in horizontal plane _____
(c) Orientation in vertical plane _____

7. Is this authorization to be used for fulfilling the requirement of a government contract with an agency of the United States Government? ☐ Yes ☒ No

If "Yes", attach as EXHIBIT No. _____, a narrative statement describing the government project, agency, and contact number.

8. Is this authorization to be used for the exclusive purpose of developing radio equipment for export to be employed by stations under the jurisdiction of a foreign government? ☐ Yes ☒ No

If "Yes", attach as EXHIBIT No. _____, the following information:
(a) The contract number and the name of the foreign government concerned.

9. Is this authorization to be used for providing communications essential to a research project? (The radio communication is not the objective of the research project). ☒ Yes ☐ No

If "Yes", attach as EXHIBIT No. 1, a narrative statement providing the following information:
(a) A description of the nature of the research project being conducted.
(b) A showing that the communications facilities requested are necessary for the research project involved.
(c) A showing that existing communications facilities are inadequate.

10. If all the answers to Items 7, 8, and 9, are "No", attach as EXHIBIT No. _____, a narrative statement describing in detail the following:

(a) The complete program of research and experimentation proposed including description of equipment and theory of operation.
(b) The specific objectives sought to be accomplished.
(c) How the program of experimentation has a reasonable promise of contribution to the development, extension, expansion, or utilization of the radio art, or is along line not already investigated.

11. (a) Give an estimate of the length of time that will be required to complete the program of experimentation proposed in this application.

(b) If less than 2 years, give the length of time in months that the authorization requested in this application will be required. 18 months

12. Would a Commission grant of this application come within Section 1.1307 of the FCC Rules, such that it may have a significant environmental impact? ☐ Yes ☒ No

If you answer yes, submit an Environmental Assessment required by Section 1.1311.

13. List below transmitting equipment to be installed (if experimental, so state):

MANUFACTURER	TYPE	NO. OF UNITS
Microcom Corporation	T705S	1

14. Is the equipment listed in Item 13 capable of station identification pursuant to Section 5.152?

☐ Yes ☒ No

15. Will the antenna extend more than 6 meters above the ground, or if mounted on an existing building will it extend more than 6 meters above the building, or will the proposed antenna be mounted on an existing structure other than a building?

☐ Yes ☒ No

If "Yes", give the following (See Instruction 9):

(a) Overall height above ground to tip of antenna is _____ meters.

(b) Elevation of ground at antenna site above mean sea level is _____ meters.

(c) Distance to nearest aircraft landing area is _____ kilometers.

(d) List any natural formations of existing man-made structures (hills, trees, water tanks, towers, etc.) which, in the opinion of the applicant, would tend to shield the antenna from aircraft and thereby minimize the aeronautical hazard of the antenna.

(e) Submit as EXHIBIT No. _____, a vertical profile sketch of total structure including supporting building, if any, giving heights in meters above ground for all significant features. Clearly indicate existing portion, noting particulars of aviation obstruction lighting already available.

16. Applicant is *(check only one box)*

☐ Individual ☐ Association ☐ Partnership ☒ Corporation

☐ Other *(describe below)*

17. Is applicant a foreign government or a representative of a foreign government?

☐ Yes ☒ No

18. Has applicant or any party to this application had any FCC station license or permit revoked or had any application for permit, license or renewal denied by this Commission?

☐ Yes ☒ No

If "Yes", attach as EXHIBIT No. _____, a statement giving call sign of license or permit revoked and relate circumstances.

19. Will applicant be owner and operator of station?

☐ Yes ☒ No

20. Give name, title, and telephone number (include area code) of person who can best handle inquiries pertaining to this application.

John Hornby, Senior Test Engineer, (203) 386-3503

21. List below all exhibits in numerical sequence and the item number of form requiring the exhibit identified.

EXHIBITS AND ITEM NO. OF FORM

Exhibit Number	Item No. of Form	Exhibit Number	Item No. of Form	Exhibit Number	Item No. of Form
1	9				

22. **CERTIFICATION**

ATTENTION: Read this certification carefully before signing this application.

THE APPLICANT CERTIFIES THAT:

(a) Copies of the FCC Rules Parts 2 and 5 are on hand; and

(b) Adequate financial appropriations have been made to carry on the program of experimentation which will be conducted by qualified personnel; and

(c) All operations will be on an experimental basis in accordance with Part 5 and other applicable rules, and will be conducted in such a manner and at such a time as to preclude harmful interference to any authorized station; and

(d) Grant of the authorization requested herein will not be construed as a finding on the part of the Commission

(1) that the frequencies and other technical parameters specified in the authorization are the best suited for the proposed program of experimentation, and

(2) that the applicant will be authorized to operate on any basis other than experimental, and

(3) that the Commission is obligated by the results of the experimental program to make provision in its rules including its table of frequency allocations for applicant's type of operation on a regularly licensed basis.

APPLICANT CERTIFIES FURTHER THAT:

(e) All the statements in the application and attached exhibits are true, complete and correct to the best of the applicant's knowledge; and

(f) The applicant is willing to finance and conduct the experimental program with full knowledge and understanding of the above limitations; and

(g) The applicant waives any claim to the use of any particular frequency or of the electromagnetic spectrum as against the regulatory power of the USA.

Signed and dated this 30th day of August, 19 93.

Name of Applicant United Technologies Corporation, Sikorsky Aircraft Division
(correspond with name given on page 1)

By R.M. Bougie
(print) *(signature)*

Title V.P. Contracts & Counsel

WILLFUL FALSE STATEMENTS MADE ON THIS FORM ARE PUNISHABLE BY FINE AND IMPRISONMENT. U.S. CODE, TITLE 18, SECTION 1001.

Check Appropriate Classification:

- ☐ Individual Applicant
- ☐ Member of Applicant Partnership
- ☐ Office of Applicant Corporation or Association
- ☒ Authorized Employee

NOTIFICATION TO INDIVIDUALS UNDER PRIVACY ACT OF 1974 AND THE PAPERWORK REDUCTION ACT OF 1980

Information requested through this form is authorized by the Communications Act of 1934, as amended, and specifically by Section 308 therein. The information will be used by Federal Communications Commission staff to determine eligibility for issuing authorizations in the use of the frequency spectrum and to effect the provisions of regulatory responsibilities rendered the Commission by the Act. Information requested by this form will be available to the public unless otherwise requested pursuant to Section 0.459 of FCC Rules and Regulations. Your response is required to obtain this authorization.

THE FOREGOING NOTICE IS REQUIRED BY THE PRIVACY ACT OF 1974, P.L. 93-579, DECEMBER 31, 1974, 5 U.S.C. 552a(e)(3), and the Paperwork Reduction Act of 1980, P.L. 96-511, December 11, 1980, 44 U.S.C. 3507.

EXHIBIT 1: Description of Research Project per Question 9, FCC Form 442 (2/87)

The research project for which this application is submitted involves the integration of an air-to-surface missile system (the Penguin missile, manufactured by Norsk Forsvarsteknologi [NFT], Norway) with Sikorsky Aircraft's S-70B-6 helicopter. A telemetry transmitter has been placed in the missile.

During flight tests, referred to as "captive carry" tests, the helo will fly patterns over western Long Island Sound while the telemetry unit transmits data to be recorded by the ground receiving station. Post-flight analysis of this data will determine the optimal values of critical software filter constants.

The flight data must be collected and recorded via telemetry for the following reasons:

1) there is not enough space on the aircraft for installation of recording equipment;
2) the recording equipment is not flight-worthy;
3) NFT requires an initial real-time look at data and there is no room in the aircraft for NFT observers;
4) the NFT-owned telemetry system has been used in the past and is "proven"; any modifications to the procedure and hardware would require expensive non-recurring engineering effort.

Sikorsky has no telemetry equipment that is adaptable to the missile. Therefore, because of the unique requirements of the transmitter (size, weight) and the nature of the data to be collected, a license for use of this particular frequency is needed.

UNITED TECHNOLOGIES SIKORSKY AIRCRAFT

6900 Main Street
Stratford, Connecticut 06601-1381
203/386-4000

SEL - 6276

August 23,1993

Federal Communications Commission
Experimental Radio Services
P.O. Box 358320
Pittsburgh PA. 15251 - 5320

Subject: Request for Experimental Radio Station License in the Aviation Services

Ref: (a) CFR 47, Part 5, Subpart B, Sections 5.55 and 5.67

(b) CFR 47, Part 5, Subpart C, Section 5.102

(c) CFR 47, Part 5, Subpart E, Section 5.203

Enc: (1) FCC Form 442, Application for Experimental Radio Station License

(2) Exhibit (1) to FCC Form 442

(3) FCC Form 155, Fee Processing Form

(4) Sikorsky Aircraft Division check for $35.00 made payable to the Federal Communications Commission.

1. The Sikorsky Aircraft Division of United Technologies Corporation respectfully requests that an Experimental Radio Station License be granted in accordance with the requirements of References (a) thru (c) and as provided by Enclosures (1) thru (4).

2. The subject license will be used for the conduct of aircraft flight test operations applicable to U.S and Foreign Government contract requirements.

3. It is requested that the subject license be forwarded to the attention of the undersigned. Questions regarding this matter may be directed to Mr. Vincent Macri at (203) 386-7918

Very truly yours,

UNITED TECHNOLOGIES CORPORATION

Edward J. Liptak

Edward J. Liptak, Deputy Director A.S.I
Test Engineering
SIKORSKY AIRCRAFT DIVISION
EJL/VM

Approved by OMB
3060-0440
Expires 12/31/90

FEDERAL COMMUNICATIONS COMMISSION

FEE PROCESSING FORM

FOR FCC USE ONLY

Please read instructions on back of this form before completing it. Section I MUST [illegible] applying for concurrent actions which require you to list more than one Fee Type Code, you must also complete Section II. This form must accompany all payments. Only one Fee Processing Form may be submitted per application or filing. Please type or print legibly. All required blocks must be completed or application/filing will be returned without action.

SECTION I

APPLICANT NAME (Last, first, middle initial)

UNITED TECHNOLOGIES CORPORATION

MAILING ADDRESS (Line 1) (Maximum 35 characters - refer to Instruction (2) on reverse of form)

SIKORSKY AIRCRAFT DIVISION

MAILING ADDRESS (Line 2) (if required) (Maximum 35 characters)

6900 MAIN STREET

CITY

STRATFORD

STATE OR COUNTRY (if foreign address)	ZIP CODE	CALL SIGN OR OTHER FCC IDENTIFIER (If applicable)
CT	**06601**	

Enter in Column (A) the correct Fee Type Code for the service you are applying for. Fee Type Codes may be found in FCC Fee Filing Guides. Enter in Column (B) the Fee Multiple, if applicable. Enter in Column (C) the result obtained from multiplying the value of the Fee Type Code in Column (A) by the number entered in Column (B), if any.

	(A) FEE TYPE CODE	(B) FEE MULTIPLE (if required)	(C) FEE DUE FOR FEE TYPE CODE IN COLUMN (A)	FOR FCC USE ONLY
(1)	**E A E**	**1**	**$ 35.00**	

SECTION II — To be used only when you are requesting concurrent actions which result in a requirement to list more than one Fee Type Code.

	(A) FEE TYPE CODE	(B) FEE MULTIPLE (if required)	(C) FEE DUE FOR FEE TYPE CODE IN COLUMN (A)	FOR FCC USE ONLY
(2)			$	
(3)			$	
(4)			$	
(5)			$	

ADD ALL AMOUNTS SHOWN IN COLUMN C, LINES (1) THROUGH (5), AND ENTER THE TOTAL HERE. THIS AMOUNT SHOULD EQUAL YOUR ENCLOSED REMITTANCE. →

TOTAL AMOUNT REMITTED WITH THIS APPLICATION OR FILING	FOR FCC USE ONLY
$	

SIKORSKY AIRCRAFT CORPORATION

Contracts & Counsel

Facsimile Cover Sheet

To:	Nancy Hey
Company:	Experimental Branch Federal Communication Commission
Phone:	202-418-2432
Fax:	202-418-1918
From:	**Ilona M. Eisler**
Company:	SIKORSKY AIRCRAFT CORPORATION 6900 Main Street, M/S S106A P. O. Box 9729 Stratford, CT 06615-9129
Phone:	(203) 386-5011
Fax:	(203) 386-6646
Date:	July 18, 2001
Pages incl. cover page:	1

Comments:

Please be advised that, effective January 1, 1995, United Technologies Corporation, Sikorsky Aircraft Division, has become a wholly-owned subsidiary, Sikorsky Aircraft Corporation (SAC). SAC has accepted, assumed, and continues and develops such business as a wholly-owned subsidiary of United Technologies Corporation.

If you have any questions, please feel free to contact Carrie Morrissey at (203) 386-5458 or myself. Thank you.