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## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 23

[Docket No. CE176; Special Condition Number 23-111-SC]

#### Special Conditions: Extra Flugzeugbau GmbH, Model EA-400 Airplane, Protection of Systems for High Intensity Radiated Fields (HIRF)

**AGENCY:** Federal Aviation Administration, DOT.

**ACTION:** Final special conditions, request for comments.

**SUMMARY:** These special conditions are issued to Extra Flugzeugbau GmbH, for an amended type certificate for the EA-400 airplane. This airplane will have novel and unusual design features when compared to the state of technology envisaged in the applicable airworthiness standards. These novel and unusual design features include the installation of an electronic attitude direction indicator installed by Extra Flugzeugbau GmbH for which the applicable regulations do not contain adequate or appropriate airworthiness standards for the protection of these systems from the effects of high intensity radiated fields (HIRF). These special conditions contain the additional safety standards that the Administrator considers necessary to establish a level of safety equivalent to the airworthiness standards applicable to these airplanes.

**DATES:** The effective date of these special conditions is February 27, 2002. The Federal Aviation Administration (FAA) must receive any comments on or before April 11, 2002.

**ADDRESSES:** Submit comments to FAA, Central Region, Office of the Regional Counsel, Attention: Rules Docket No. CE176, 901 Locust, Room 506, Kansas City, Missouri 64106. You may view any

comments at this location between 8 a.m. and 4 p.m., Monday through Friday, except Federal holidays.

#### FOR FURTHER INFORMATION CONTACT:

Ervin E. Dvorak, Aerospace Engineer, Standards Office (ACE-110), Small Airplane Directorate, Aircraft Certification Service, Federal Aviation Administration, 901 Locust, Room 301, Kansas City, Missouri 64106; telephone 816-329-4123; facsimile 816-329-4090.

**SUPPLEMENTARY INFORMATION:** The FAA has determined that notice and opportunity for prior public comment hereon are impracticable because these procedures would significantly delay issuance of the approval design and thus delivery of the affected aircraft. In addition, the substance of these special conditions has been subject to the public comment process in several prior instances with no substantive comments received. The FAA, therefore, finds that good cause exists for making these special conditions effective upon issuance.

#### Comments Invited

Interested persons are invited to submit such written data, views, or arguments, as they may desire. Communications should identify the regulatory docket or notice number and be submitted in duplicate to the address specified above. All communications received on or before the closing date for comments will be considered by the Administrator. The special conditions may be changed in light of the comments received. All comments received will be available in the Rules Docket for examination by interested persons, both before and after the closing date for comments. A report summarizing each substantive public contact with FAA personnel concerning this rulemaking will be filed in the docket. Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this notice must include a self-addressed, stamped postcard on which the following statement is made: "Comments to Docket No. CE176." The postcard will be date stamped and returned to the commenter.

#### Background

On September 5, 2001, Extra Flugzeugbau GmbH, Flugplatz Dinslaken Schwarze Heide, 46569 Hünxe, Federal Republic of Germany,

made an application to the FAA for an amended type certificate for the EA-400 airplane. The EA-400 airplane is currently approved under TC No. A43CE. The proposed modification incorporates a novel or unusual design feature, such as an electronic attitude direction indicator that is vulnerable to HIRF external to the airplane.

#### Type Certification Basis

Under the provisions of 14 CFR part 21, § 21.101, Extra Flugzeugbau GmbH must show that the EA-400 airplane meets the following provisions, or the applicable regulations in effect on the date of application, 14 CFR part 23 at Amendment 23-54.

#### Discussion

If the Administrator finds that the applicable airworthiness standards do not contain adequate or appropriate safety standards because of novel or unusual design features of an airplane, special conditions are prescribed under the provisions of § 21.16.

Special conditions are normally issued in accordance with § 11.19 as required by and become a part of the type certification basis in accordance with § 21.101(d).

Special conditions are initially applicable to the model for which they are issued. Should the applicant apply for a supplemental type certificate to modify any other model already included on the same type certificate to incorporate the same novel or unusual design feature, the special conditions would also apply to the other model under the provisions of § 21.101(a)(1).

#### Novel or Unusual Design Features

Extra Flugzeugbau GmbH plans to incorporate certain novel and unusual design features into an airplane for which the airworthiness standards do not contain adequate or appropriate safety standards for protection from the effects of HIRF. These features include an electronic attitude direction indicator, which are susceptible to the HIRF environment, that were not envisaged by the existing regulations for this type of airplane.

#### Protection of Systems From High Intensity Radiated Fields (HIRF)

Recent advances in technology have given rise to the application in aircraft designs of advanced electrical and electronic systems that perform

functions required for continued safe flight and landing. Due to the use of sensitive solid state advanced electronics circuits, these advanced systems are readily responsive to the transient effects of induced electrical current and voltage caused by the HIRF. The HIRF can degrade electronic systems performance by damaging components or upsetting system functions.

Furthermore, the HIRF environment has undergone a transformation that was not foreseen when the current requirements were developed. Higher energy levels are radiated from transmitters that are used for radar, radio, and television. In addition, the number of transmitters has increased significantly. There is also uncertainty concerning the effectiveness of airframe shielding for HIRF. Furthermore, coupling to cockpit-installed equipment through the cockpit window apertures is undefined.

The combined effect of the technological advances in airplane design and the changing environment has resulted in an increased level of vulnerability of electrical and electronic systems required for the continued safe flight and landing of the airplane. Effective measures against the effects of exposure to HIRF must be provided by the design and installation of these systems. The accepted maximum energy levels in which civilian airplane system installations must be capable of operating safely are based on surveys and analysis of existing radio frequency emitters. These special conditions require that the airplane be evaluated under these energy levels for the protection of the electronic system and its associated wiring harness. These external threat levels, which are lower than previous required values, are believed to represent the worst case to which an airplane would be exposed in the operating environment.

These special conditions require qualification of systems that perform critical functions, as installed in aircraft, to the defined HIRF environment in paragraph 1 or, as an option to a fixed value using laboratory tests, in paragraph 2, as follows: The applicant may demonstrate that the operation and operational capability of the installed electrical and electronic systems that perform critical functions are not adversely affected when the aircraft is exposed to the HIRF environment defined below:

Frequency	Field strength (volts per meter)	
	Peak	Average
10 kHz–100 kHz .....	50	50
100 kHz–500 kHz .....	50	50
500 kHz–2 MHz .....	50	50
2 MHz–30 MHz .....	100	100
30 MHz–70 MHz .....	50	50
70 MHz–100 MHz .....	50	50
100 MHz–200 MHz .....	100	100
200 MHz–400 MHz .....	100	100
400 MHz–700 MHz .....	700	50
700 MHz–1 GHz .....	700	100
1 GHz–2 GHz .....	2000	200
2 GHz–4 GHz .....	3000	200
4 GHz–6 GHz .....	3000	200
6 GHz–8 GHz .....	1000	200
8 GHz–12 GHz .....	3000	300
12 GHz–18 GHz .....	2000	200
18 GHz–40 GHz .....	600	200

The field strengths are expressed in terms of peak root-mean-square (rms) values, over the complete modulation period.

or,

(2) The applicant may demonstrate by a system test and analysis that the electrical and electronic systems that perform critical functions can withstand a minimum threat of 100 volts rms per meter, electrical field strength, from 10 kHz to 18 GHz. When using this test to show compliance with the HIRF requirements, no credit is given for signal attenuation due to installation.

A preliminary hazard analysis must be performed by the applicant, for approval by the FAA, to identify either electrical or electronic systems that perform critical functions. The term “critical” means those functions whose failure would contribute to, or cause, a failure condition that would prevent the continued safe flight and landing of the airplane. The systems identified by the hazard analysis that perform critical functions are candidates for the application of HIRF requirements. A system may perform both critical and non-critical functions. Primary electronic flight display systems, and their associated components, perform critical functions such as attitude, altitude, and airspeed indication. The HIRF requirements apply only to critical functions.

Compliance with HIRF requirements may be demonstrated by tests, analysis, models, similarity with existing systems, or any combination of these. Service experience alone is not acceptable since normal flight operations may not include an exposure to the HIRF environment. Reliance on a system with similar design features for redundancy as a means of protection against the effects of external HIRF is generally insufficient since all elements

of a redundant system are likely to be exposed to the fields concurrently.

### Applicability

As discussed above, these special conditions are applicable to the EA-400 airplane. Should Extra Flugzeugbau GmbH apply at a later date for a design approval to modify any other model on the same type certificate to incorporate the same novel or unusual design feature, the special conditions would apply to that model as well under the provisions of § 21.101(a)(1).

### Conclusion

This action affects only certain novel or unusual design features on the specified airplane model(s). It is not a rule of general applicability and affects only the applicant who applied to the FAA for approval of these features on the airplane.

The substance of these special conditions has been subjected to the notice and comment period in several prior instances and has been derived without substantive change from those previously issued. It is unlikely that prior public comment would result in a significant change from the substance contained herein. For this reason, and because a delay would significantly affect the certification of the airplane, which is imminent, the FAA has determined that prior public notice and comment are unnecessary and impracticable, and good cause exists for adopting these special conditions upon issuance. The FAA is requesting comments to allow interested persons to submit views that may not have been submitted in response to the prior opportunities for comment described above.

### List of Subjects in 14 CFR Part 23

Aircraft, Aviation safety, Signs and symbols.

### Citation

The authority citation for these special conditions is as follows:

**Authority:** 49 U.S.C. 106(g), 40113 and 44701; 14 CFR part 21, §§ 21.16 and 21.101; and 14 CFR part 11, 11.19.

### The Special Conditions

Accordingly, by the authority delegated to me by the Administrator, the following special conditions are issued as part of the type certification basis for the EA-400 airplane modified by Extra Flugzeugbau GmbH to add an electronic attitude direction indicator.

1. Protection of Electrical and Electronic Systems from High Intensity Radiated Fields (HIRF). Each system that performs critical functions must be

designed and installed to ensure that the operations, and operational capabilities of these systems to perform critical functions, are not adversely affected when the airplane is exposed to high intensity radiated electromagnetic fields external to the airplane.

2. For the purpose of these special conditions, the following definition applies: Critical Functions: Functions whose failure would contribute to, or cause, a failure condition that would prevent the continued safe flight and landing of the airplane.

Issued in Kansas City, Missouri, on February 27, 2002.

**James E. Jackson,**

*Acting Manager, Small Airplane Directorate, Aircraft Certification Service.*

[FR Doc. 02-5810 Filed 3-11-02; 8:45 am]

BILLING CODE 4910-13-P

## SOCIAL SECURITY ADMINISTRATION

### 20 CFR Part 416

RIN 0960-AF60

#### Determining Income Under the Supplemental Security Income Program; Student Child Earned Income Exclusion

**AGENCY:** Social Security Administration.

**ACTION:** Final rule.

**SUMMARY:** We are revising our rules on deeming of income so that we use the same increased earned income exclusion amounts for both eligible and ineligible students in Supplemental Security Income (SSI) households. Beginning with earned income for January 2001, the monthly and yearly SSI student child earned income exclusion (SEIE) amounts were increased for eligible children based on final rules published in the **Federal Register** on December 29, 2000. The same increase should have been made for ineligible children for purposes of deeming calculations, but it was inadvertently not included in the published final rules. Under SSA's longstanding rule, the same SEIE amounts have applied to the income of both eligible and ineligible children. Consistent with the increase made in the final rules published December 29, 2000, this final rule applies the same increase in the SEIE to ineligible children.

**EFFECTIVE DATE:** This rule is effective on March 12, 2002.

**FOR FURTHER INFORMATION CONTACT:** Georgia E. Myers, Regulations Officer, Office of Process and Innovation Management, L2109 West Low Rise

Building, Social Security Administration, 6401 Security Boulevard, Baltimore, MD 21235-6401, [regulations@ssa.gov](mailto:regulations@ssa.gov), (410) 965-3632 or TTY (410) 966-5609 for information about these rules. For information on eligibility or claiming benefits, call our national toll-free numbers, 1-800-772-1213 or TTY 1-800-325-0778 or visit our Internet web site, Social Security Online, at <http://www.ssa.gov>.

#### Electronic Version

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**SUPPLEMENTARY INFORMATION:** Section 1612 of the Social Security Act (the Act) describes the meaning of "income" for purposes of the SSI program. This section also explains what is excluded from income. Section 1612(b)(1) provides an exclusion from earned income for a child who is a student regularly attending a school, college, or university, or a course of vocational or technical training designed to prepare for gainful employment. The section also provides that the Commissioner may prescribe the maximum amount of the exclusion. Prior to January 2001, regulations at §§ 416.1112(c)(3) and 416.1161(c) provided, for a child who is a student, an SEIE of up to \$400 a month of earned income with an annual limit of \$1,620.

If an SSI eligible individual lives in the same household with a parent or spouse who does not receive SSI benefits (hereafter referred to as an "ineligible parent" or "ineligible spouse"), the ineligible parent's or spouse's income may be considered available (deemed) to the eligible individual. This concept is called "deeming" and is provided for in section 1614 of the Act. In determining the amount of an ineligible parent's or spouse's income to consider in determining the individual's eligibility and benefit amounts, we deduct an allocation for other children living in the household who are not eligible for SSI benefits (hereafter referred to as "ineligible children") (see § 416.1160(c)(2)). We reduce the amount of this allocation by the amount of the ineligible child's own income (see § 416.1161(c)). However, if an ineligible child is a student who is working, his

or her earned income is reduced by the amount of the SEIE exclusion before that income is used to reduce the amount of the allocation.

On December 29, 2000, we published final rules in the **Federal Register** (65 FR 82905) to, among other things, revise § 416.1112(c)(3) of our regulations. Effective for earned income beginning in January 2001, these revisions increased the maximum monthly and yearly SEIE amounts used in determining SSI eligibility and payment amounts for student children, and provided for the automatic adjustment of the monthly and yearly exclusion amounts each year based on increases in the cost of living. Under our longstanding rules, the SEIE maximum exclusion amounts have been the same for ineligible children as for eligible children. However, the new rules applied the new exclusion amounts to eligible children but inadvertently did not include ineligible children for deeming calculation purposes. The preamble to those rules noted that the prior amounts had been in place since 1974, and stated that the change in these amounts was being made in response to increases in school expenses since that time. The rationale for this increase is equally applicable to ineligible student children as for eligible student children.

This final rule amends the regulations to apply the same increase in the SEIE amounts to ineligible children as for eligible children. We are now addressing the oversight noted above in order to be consistent with our longstanding policy of having the same SEIE amounts for both eligible and ineligible children and with the regulatory increase in the SEIE amounts already made for eligible children. This final rule therefore amends § 416.1161(c) to provide a cross-reference to the eligible child regulation in § 416.1112(c)(3) that provides for a SEIE in 2001 of up to \$1,290 a month with an annual limit of \$5,200, and automatic adjustments each subsequent year as provided in that section. These amounts have increased for calendar year 2002 to \$1,320 and \$5,340, respectively.

The effects of this rule change are most easily understood by considering an example. John, an ineligible student, lives with his mother and his SSI eligible brother, Mark. In June, July and August of 2002, John earns \$750 each month to defray his school expenses in the fall. His mother also works and her earnings are deemed to Mark. As part of the deeming computation we deduct from the mother's earnings a living allowance allocation of \$272 each month for John subject to reduction for