Interpretation 67

To: J3
From: Interpretations Subgroup
Date: May 30, 2000
Subject: Interpretation 67

The Interpretations Subgroup reviewed the ballot results of Interpretation 67. The Interpretations Subgroup agreed to fix this defect in Fortran 95 and document it as an incompatibility in both Fortran 90 and FORTRAN 77.

NUMBER: 000067
TITLE: Writing zeros
KEYWORDS: list-directed output, namelist output
DEFECT TYPE: Erratum
STATUS: Passed by J3 letter ballot

The standard currently requires a real zero to be written in exponential form when using list-directed or namelist output.

QUESTION: Is this requirement intentional or an oversight?

ANSWER: The requirement is an oversight.

DISCUSSION:
The G edit descriptor was changed in Fortran 90 to format a real zero as if an F edit descriptor were provided in most cases. The same change was not made for list-directed or namelist output, but should have.

REFERENCES: ISO/IEC 1539-1:1997(E),
Sections 10.5.4.1.2, 10.8.2, and 10.9.2.1

EDITS:

For Fortran 95:
[3:32+] In section 1.5.1, add the following as list item (3):
(3) List directed and namelist output statements produce a real constant zero for a real value that is zero, and for the real or imaginary part of a complex value that is zero. In Fortran 95, these real constants are produced with the effect of an F edit descriptor, instead of an E edit descriptor.

[4:24+] In section 1.5.2, add the following as list item (7):
(7) List directed and namelist output statements produce a real constant zero for a real value that is zero, and for the real or imaginary part of a complex value that is zero. In Fortran 95, these real constants are produced with the effect of an F edit descriptor, instead of an E edit descriptor.

[177:41] In section 10.8.2 (List-directed output), fifth paragraph, change "If the magnitude x is within this range" to "If the magnitude x is within this range or is zero"

[182:33] In section 10.9.2.1 (Namelist output editing), third paragraph, change "If the magnitude x is within this range" to "If the magnitude x is within this range or is zero"

For 00-007r1 (Fortran 2000):
[3:24+] In section 1.5.2 (Fortran90 compatibility), add the following sentence to the end of the first paragraph.
"The following Fortran 90 features have different interpretations in this standard."

[3:25-29] In section 1.5.2, turn the 2nd paragraph into list item (1).

[3:29+] Add the following as list item (2).
(2) List directed and namelist output statements produce a real constant zero for a real value that is zero, and for the real or imaginary part of a complex value that is zero. In Fortran 2000, these real constants are produced with the effect of an F edit descriptor, instead of an E edit descriptor.

[4:21+] In section 1.5.2, add the following as list item (7):

(7) List directed and namelist output statements produce a real constant zero for a real value that is zero, and for the real or imaginary part of a complex value that is zero. In Fortran 2000, these real constants are produced with the effect of an F edit descriptor, instead of an E edit descriptor.

[229:10] In section 10.9.2 (List-directed output), fifth paragraph, change "If the magnitude x is within this range" to "If the magnitude x is within this range or is zero"

[234:4] In section 10.10.2.1 (Namelist output editing), third paragraph, change "If the magnitude x is within this range" to "If the magnitude x is within this range or is zero"

SUBMITTED BY: Robert Corbett

HISTORY:	J3/99-193	m150	Submitted
	J3/99-213r1	m150	approved uc
	J3/00-210	m153	Passed by letter ballot

[End of J3 / 00-210]