Appendix F

AUTOBOGUS format

The AUTOBOGUS file is created by the Autobogus 1 case and used as input to the Autobogus 2 case. The file lists details (as described below) of the suspect observations removed during the Autobogus 1 submittal. After an Autobogus 1 submittal, the user may modify the AUTOBOGUS file for input to an Autobogus 2 submittal of RAWINS.

The AUTOBOGUS file is output from the Autobogus 1 case as FORTRAN unit 40, and input to the Autobogus 2 case as FORTRAN unit 10.

An example of an AUTOBOGUS file as output from RAWINS follows (titles and dashed lines are for clarification only):

```
   DATE     N T   IDENT   L V   PRES    TEMP     DIR      SPD     FLAG  X  Y    I       J      RH       HT
-------------------------------------------------------------------------------------------------------------
 87062312   1 2 23955  1  1 6   862.0 88888.0 88888.0 88888.0 F*** 37 88 88.36  37.39 88888.0 88888.0
 87062312   2 2 24944  1  1 6   859.0 88888.0 88888.0 88888.0 F*** 69 86 85.77  68.73 88888.0 88888.0
 87062312   3 2 30309  1  1 6   992.8 88888.0 88888.0 88888.0 F  * 54 80 79.69  54.47 88888.0 88888.0
 87062312   1 2 98440  1  1 1 88888.0 88888.0   220.0    91.6 F*** 77 28 28.22  76.78 88888.0 88888.0
 87062312   2 2 59567  1  1 1 88888.0 88888.0   250.0    23.1 F    74 38 37.54  74.30 88888.0 88888.0
 87062312   1 2 SP3    1  1 2 88888.0 88888.0   330.0    14.4 F    75 42 41.99  74.92 88888.0 88888.0
 87062312   2 2 44347  1  1 2 88888.0 88888.0   360.0     9.8 F  * 57 64 64.23  57.27 88888.0 88888.0
 87062312   3 2 44373  2  1 2 88888.0 88888.0   340.0     8.7 F    56 63 63.20  56.41 88888.0 88888.0
 87062312   1 2 34122  1  1 3 88888.0   -21.9 88888.0 88888.0 F***  5 88 88.32   4.68 88888.0 88888.0
 87062312   2 2 38613  1  1 3 88888.0    18.4 88888.0 88888.0 F  * 27 64 64.04  26.70 88888.0 88888.0
 87062312   3 2 38750  1  1 3 88888.0    13.0 88888.0 88888.0 F  *  8 66 66.21   8.25 88888.0 88888.0
 87062312   1 1 31088  1  2 3 88888.0     9.8 88888.0 88888.0 F  * 86 87 87.02  85.77 88888.0 88888.0
 87062312   2 1 31168  1  2 3 88888.0     8.2 88888.0 88888.0 F    83 82 82.02  82.94 88888.0 88888.0
 87062312   3 1 34122  1  2 3 88888.0   -21.9 88888.0 88888.0 F***  5 88 88.32   4.68 88888.0 88888.0
-------------------------------------------------------------------------------------------------------------
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Description of AUTOBOGUS variables.

DATE:	Eight digit date/time identifier, in the format YYMMDDHH.
N:	A count of the observations flagged for a given date, variable, and level.
T:	Type of level: 1: mandatory level; 2: surface; -1: new nonmandatory level.
IDENT:	Five digit station identifier, followed by a flag (1 or 2) to indicate which occurrence of the station was flagged.
L:	Pressure level index of the flagged observation: 1 = surface, 2 = 1000, 3 = 850, etc.; highest values refer to nonmandatory pressure levels.
V:	Variable type: $1 = u$, $2 = v$, $3 = T$, $6 = p_o$.
PRES:	Value of flagged p_o (mb); or 88888.0 if p_o value was OK.
TEMP:	Value of flagged T (°C); or 88888.0 if T value was OK.
DIR:	Value of flagged wind direction (degrees) or 88888.0 if wind direction was OK.
SPD:	Value of flagged wind speed (m s^{-1}), or 88888.0 if wind speed was OK.
FLAG:	Logical flag, output as F. Change to T for second submittal, if flagged observation is OK. Change to B for second submittal, if flagged observation was bad, and a bogus observation is substituted. The F flag is followed by zero or more stars. These stars indicate the relative size of the difference:

F   : Difference value greater than ERRMAX.
F   *: Difference value greater than 1.33 × ERRMAX.
F **: Difference value greater than 1.67 × ERRMAX.
F***: Difference value greater than 2.0 × ERRMAX.

X: Approximate x-coordinate of flagged observation.

Y: Approximate y-coordinate of flagged observation.

I: I coordinate of flagged observation.

J: J coordinate of flagged observation.

RH: Value of flagged relative humidity (%); or 88888.0 if RH was OK. RH values are not corrected by autobogus.

HT: Value of flagged geopotential height (m); or 88888.0 if ϕ was OK HT values are not corrected by autobogus.

Before submittal of the Autobogus 2 case, the user should examine the autobogus output file and the autobogus plots to determine if the values flagged in the autobogus file are indeed erroneous values. For any flagged values that the user has determined were good data, the user should change the flag to T (to retain the flagged value). For any flagged values that are indeed erroneous, the user should leave the flag set to F (to delete the value). If the flagged value is erroneous, the user also has the option to insert a bogus value in place of the flagged value. To do this, the user should set the flag to B (to replace the value) and insert the new bogus value in place of the flagged value.