2. [illegible]
3. Overall death rate - 0.54% per year.
4. Birth rate - 4.2% per year.

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A population of 550 was assumed to be the one that may move back to an island. Values for other initial populations may be obtained by ratios of the results.

The total population at the end of 30 years is given by the compounding equation:

$$P_{30} = 550\ (1+0.038)^{30} = 1684$$

The number of births in 30 years are given by:

$$B = 0.042 \times 550 \int_0^{30} (1.038)^x\, dx$$

where x is the time between 0 and 30. This gives

$$B = \frac{0.042 \times 550}{\ln 1.038} [1.038^{30} - 1] = 1277$$

Similarly, the number of deaths in the 30 year period would be:

$$\text{Deaths} = 0.0054 \times 550 \int_0^{30} (1.038)^x\, dx$$

$$\text{Deaths} = \frac{0.0054 \times 550}{\ln 1.038} [1.038^{30} - 1] = 164$$

One other item needed is the reduction in 30 year dose to those born after the return because of the decrease in radiation levels and the smaller amount of time in the 30 year period that is spent on the island. For this, the total population dose for those born after returning assuming an initial dose rate of 1 rad/year is given by:

above. However, the magnitude of the relative risk in the U.S. used for the Marshallese will be high by a factor of somewhere around 2-3 because of the distortion caused by the very high proportion of young people who have a relatively low natural cancer incidence.

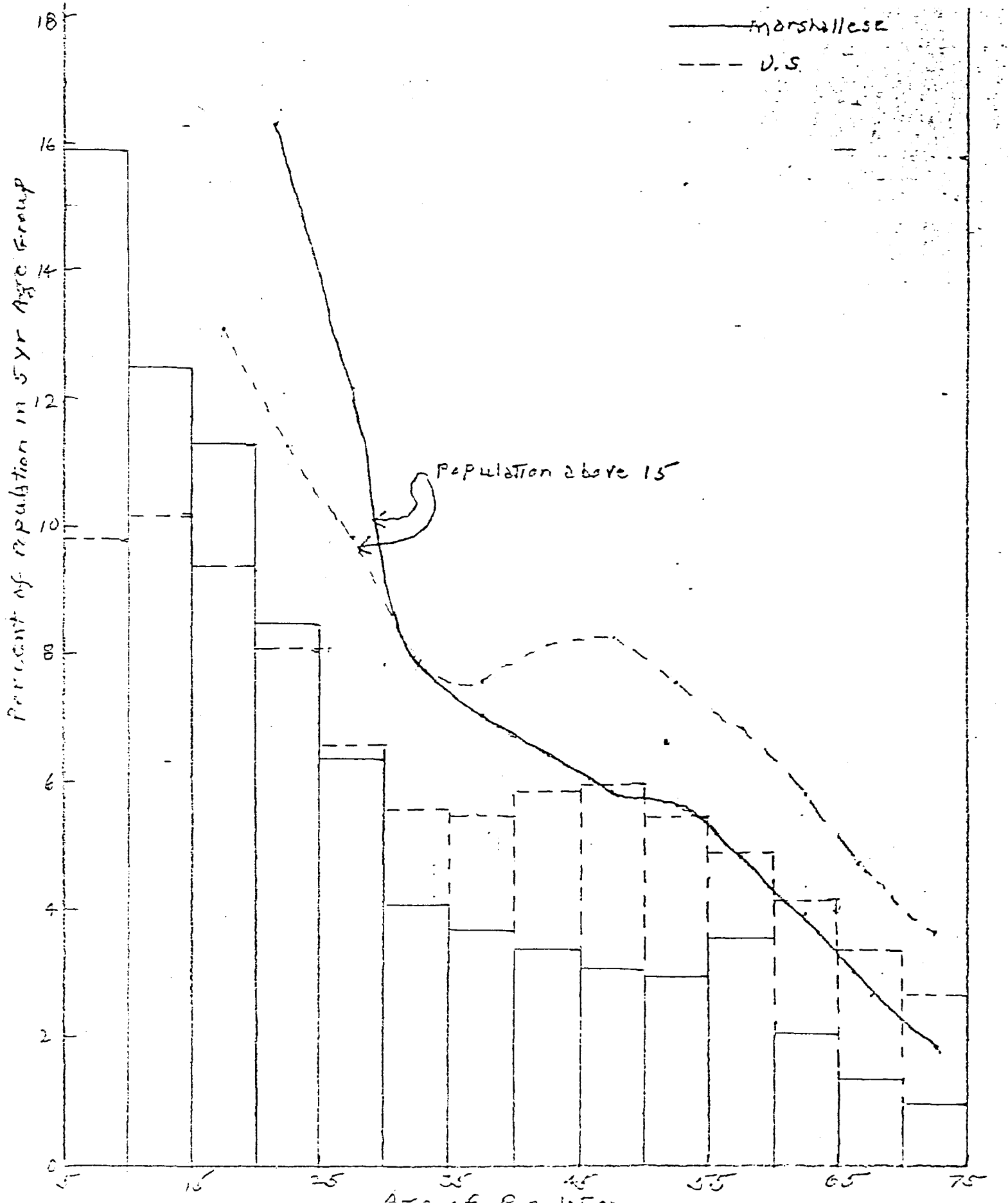
Sincerely yours,

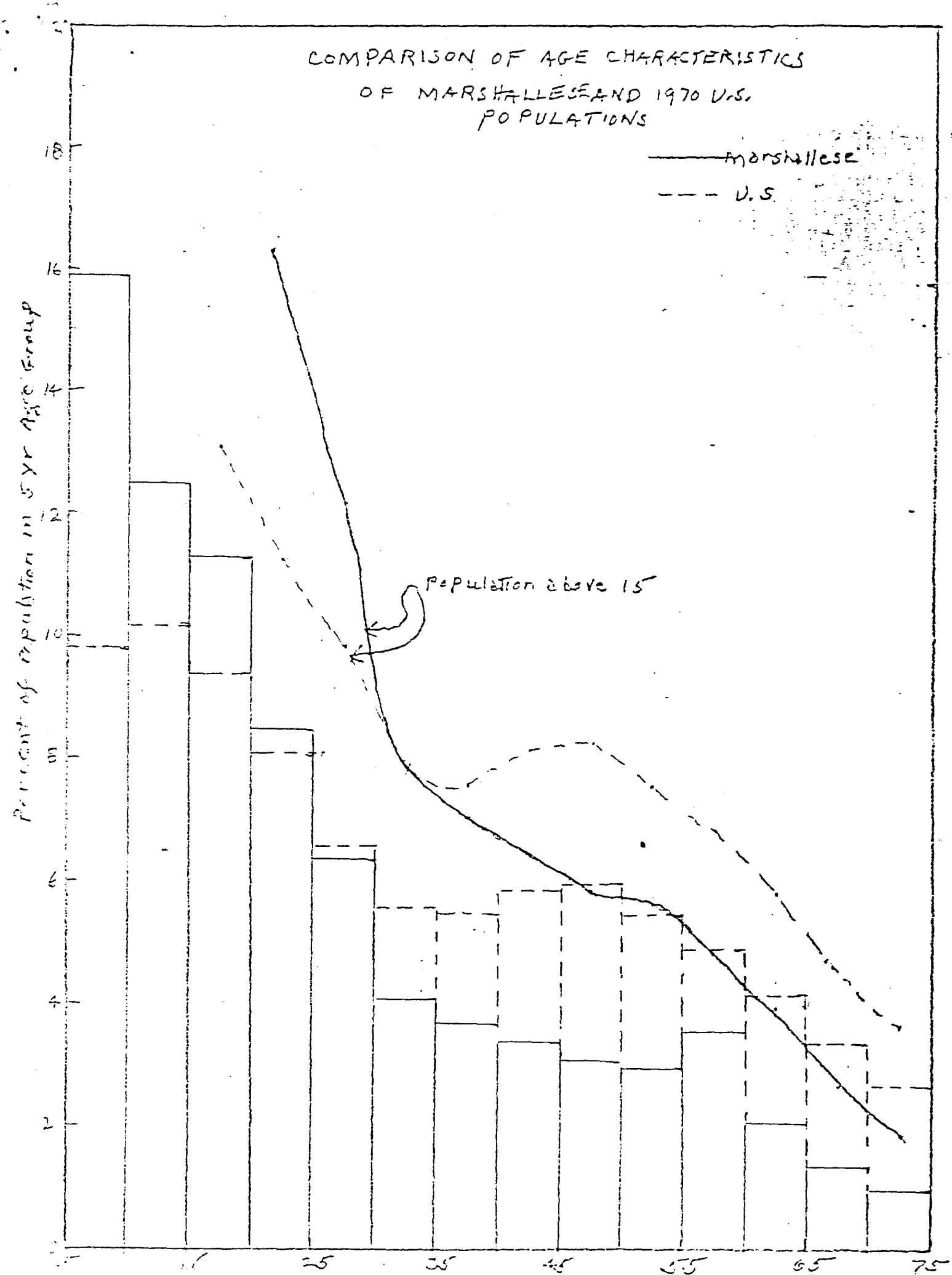
J. W. Healy

JWH:dl

Enc. a/s

xc: B. Wachholz, DOE/HQ, Washington, D.C., w/enc.


Marshallese
U.S.
Population above 15
Percent of population in 5 yr Age Group
Age of Population
0
2
4
6
8
10
12
14
16
18
15
25
35
45
55
65
75


COMPARISON OF AGE CHARACTERISTICS
OF MARSHALLESE AND 1970 U.S.
POPULATIONS
Marshallese
U.S.
Population above 15
Percent of population in 5 yr Age Group
18
16
14
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0
25
35
45
55
65
75