



# ARTS1064

GWYYb'DfcXi Wjcb' =

HYfa 'Hk c''##'&\$&\$

7ci fgY`Cj Yfj ]Yk

GHJZ`7cbHJW`8YHJ]`g

7cbj Ybcfg


7 ci fgY'8YHJ]`g

7 fYX]hDc]bhtg '\*`

Gi a a UfmicZ\hY'7 ci fgY

Gi VYWh5fYU.'8[^ E fgV]M6

6`hcXUmfg`a YX]U'f]W`k cfX'k Y`ZbX'U'j UghUffUmicZg`hcfm`h`b[ `dfUW]W`g": fca `: UWVcc\_`hja Y`]bYg`hc`j ]fU`  
j ]XYcgz`bYk g`g`hcf]Yg`UbX`UXj Yfh]gYa Ybhtg`U`W`a d`Yl` fUbb[ Y`cZbUffU]h] Y`ghfU]h[ ]Yg`UfY`i gYX`hc`cf[ Ub]gY`  
ZFU[ a Yb]Ufm]a U[ Yg`z`gci bXg`UbX`a Ya cf]Yg`]bhc`a YUb]b[ Z` `W`cbYbH`6`h`h.]g`W`ci fgY`mci `k ]`VY`]bHfcXi W`X`  
hc`Z bXUa YbH`U`W`bW`dhtg`UbX`h`W`b]ei Yg`cZbUffU]h] Y`ghmY`UbX`ghf] W`i fY`Uddfcdf]U]h`hc`U`fUbb[ Y`cZa YX]U`  
dfcXi W`]cb`Ybj ]fcb`a Ybhtg`"H`Y`W`ci fgY`Ya d`Ug]gYg`h`Y`XYj Y`cda YbhcZ`UbXg]cb`dfcXi W`]cb`g\_]`g`UbX`  
mci `k ]` [ U]b`dfcZ]W`YbW`h]b`h`Y`i gY`cZUi X]c!j ]gi U`Yei ]da YbhUbX`YX]h]b[ `gcZk UfY`]b`dfYdUfU]cb`Zcf`  
a cfY`UXj UbW`X`W`ci fgYg`Uh`Yj Y`g`&`UbX`" "

7 ci fgY`@YUfb]b[ `Ci hW`a Yg

%` ÆYbh]ZmUbX`]a d`Ya Ybh`h`Y`Z bXUa YbH`U`Y`Ya Ybhtg`UbX`h`W`b]ei Yg`cZg`hcfm`h`b[ ]]b`a YX]U'f]W`  
Ybj ]fcb`a Ybhtg`"  
&` D`Ubz`g`lcc`h`UbX`dfcXi W`g`l`cf`h`Ui X]c!j ]gi U`g`hcf]Yg`"  
' "` @]b\_`W`YU]h] Y`dfcXi W`]cb`k ]h`h`YcfY]h]W`U`UbX`W`]h]W`U`\_bck`YX[ Y`"  
( " K`cf\_`W`U`VcfU]h] Y`m]b`U`a UbbYf`h`U]h]g`Y`h]W`z`gUZ`UbX`Uk UfY`cZ]bXi ghfmg]UbXUfXg`cZVYgh`  
dfUW]W`"

HYUW]b[ `GhfU]h[ ]Yg`

H`]g`W`ci fgY`]bHfcXi W`g`gh`XYbhtg`hc`h`Y`Z bXUa YbH`U`g\_]`g`UbX`h`W`b]ei Yg`cZa YX]U]h`X`bUffU]h] Y`  
ghcfm`h`b[ "5g`cbY`cZ`h`Y`W`cfY`dfUW]W`cf]YbH`X`W`ci fgYg`z`h`Y`h`UW]b[ `ghfU]h[ ]Yg`d`UW`Ub`Ya d`Ug]g`cb`  
`YUfb]b[ `VmXc]b[ "Gh`XYbhtg`k ]`VY`[ ]j Yb`h`Y`cddcf`h`b]m]hc`XYj Y`cd`h`Y]f`h`W`b]W`g\_]`VUgY`h`fci [ \`]b!`  
WUgg`UW]h] ]h]Yg`UbX`UggYgga Ybh]Ug\_g`"H`Ymk ]`U`gc`k`cf\_`h`fci [ \`\_Ym]h`YcfY]h]W`U`UbX`h`W`b]W`fYUX]b[ g`  
cb`bUffU]h] Y`ghmY`UbX`ghf] W`i fY`]b`dfYdUfU]cb`Zcf`h`Y]f]b!WUgg`UW]h] ]h]Yg`UbX`UggYgga Ybh]Ug\_g`"5g`Ub`  
]bHfcXi W`cfm`W`ci fgY`Z`h`Y`h`UW]b[ `a`Y`h`c`Xg`UfY`Z`W`gYX`cb`g`l`ck ]b[ `gh`XYbhtg`l`ck`UbX`Y`d]b[ `h`Ya`hc`  
XYj Y`cd`U`Yj Y`cZ`W`a dY`h`bW`z`fU]h`Yf`h`Ub`XYj Y`cd]b[ \][ \!`Yj Y`Yl`dYf]YbW`cf`a`UghYfm`5h`h`Y`gUa`Y`  
h]a`Y`z`gh`XYbhtg`k ]`Y`Ufb`l`ck`hc`U`W`W`gg`\_bck`YX[ Y`UbX`fYgci`fW`g`z`Ug`k`Y`Ug`h`Y`j`U`i`Y`cZ]b`W`dfcU]h]b[`  
dY`Yf`Z`Y`X`V`U`W\_]bhc`h`Y`Y`Ufb]b[ `W`W`Y`z`k` \]W`k`j`hc`YbUV`Y`h`Ya`hc`W`cb]bi`Y`hc`XY`Y`d`Y`b`h`Y]f`Y`Ufb]b[ `UbX`  
dfYdUfY`h`Ya`Zcf`a`cfY`UXj UbW`X`a`YX]U`dfcXi W`]cb`W`ci fgYg`Uh`Yj Y`g`&`UbX`" "

5ggYgga Ybh

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5ggYgga YbhHUg_	K Y][ \h	8i Y'8UHŸ	Gh XYbh@YUfb]b[ Ci hWta Yg'5ggYggYX
GhcfmDfcdcgU`	' \$i	&&#*\$ #&\$&\$'%%) - `DA	%z&Z
9X]h]b[ `HUg_`	' \$i	&* # \$ + #&\$&\$'%%) - `DA	%Z
J ]XYc`Dfc`YVh	( \$i	#\$#\$, #&\$&\$'%%) - `DA	%z&

5ggYgga Ybh8YHJ]`g

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GhUfhXUHŸ. `Bch5dd`]WUV`Y

@Yb[ h. .; \$ \$ ! % \$ \$ \$ k cfXg

8YHJ]`g.

5ggYgga Ybh8YgW]dh]cb`]g`Uj`U]`UV`Y`cb`A`ccX`Y`"

Gi Va ]gg]cb`bchYg.5`D8: `j`]U`A`ccX`Y`"

Hi fb]h]b`gYH]b[ .`

8YHJ]g.

5ggYgga Ybh8YgW]dh]cb]g]Uj U]UV`Y`cb`A ccX`Y"

Gi Va ]gg]cb`bcH]g.5`"n]d`Z`XYf`W`bH]b]b[ `U`D8: `cZdfcXi W]cb`a UHf]U`g`UbX`@B? `fc`h`Y`Z]bU`Z]a `j]U  
A ccX`Y"

Hi fb]h]b`gYH]b[ . H\]g]g]bchU`Hi fb]h]b`Ugg][ ba Ybh



F Ygci fWg

DfYgWf]VYX`F Ygci fWg`

9I hfU`UfX`Xfj] Y`!`a ]b]a i a `) \$\$\$; 6

F YWca a YbXYX`F Ygci fWg

- 7ck [ ]`ž@`f&\$\$) ĚK f]h]b[ `G\cfh: ]a g. `Gfif Wf fY`UbX`7 cbhYbhZcf`GWYYbk f]hYfgž&bX`YX"ž@cbY 9U[ `Y`Di V"ž@cg`5b[ Y`Ygž7 5
- f] ]b[ ž8"?"`f&\$\$\*Ě`DfcXi W]b[ `UbX`8]fYW]b[ `hY`G\cfh: ]a `UbX`J ]XYcž` fX`YX"ž: cWU`DfYggž C I ZcfXžI "?"
- ? UmžG" f% - %&: ]a `8]fYW]b[ .`G\ch6mG\ctžA ]WUY`K ]YgY`DfcXi W]cbgž7 5
- C fdYbžJ "f&\$\$' Ě: ]a `9X]h]b[ .`H\Y`5fhcZhY`9I dfYggj] YžK U`Zck Yfž@cbXcb
- GHXY`Yfž>"`UbX`A WK ]`]Ua ž?"`f&\$\$- Ě`GWYYb`A YX]U. `5bU`mg]b[ : ]a `UbX`HY`Yj ]g]cbž5`Yb / I bk ]bžBGK ž5i g]fU`]U

7ci fgY`9j U`i Uh]cb`UbX`8Yj Y`cda Ybh

Mci f`ZYXVUW`\_]g`Ub`YI hfYa Y`m]a dcf]Ubh]UbX`j U`i UV`Y`fYgci fW`Zcf`i g`hc`]a dfcj Y`h`]g`Wci fgY`UbX`a U`\_Y`]h a cfY`fY`Yj Ubh]c`gh`XYbhgf]b`YXg" Mci `UFY`UV`Y`hc`Yj U`i Uh`Y`UbX`dfcj ]XY`ZYXVUW`\_cb`h`]g`Wci fgY`h`fci [ \

Gi Va ]gg]cb`cZ5ggYgga YbhiHUg\_g

Hi fb]h]b`Gi Va ]gg]cb

Ʒmci`YbWci bHYf`U`dfcV`Ya`k` \Yb`UHYa` dh]b[`hc`gi`Va`]hmc`i`f`Ugg][`ba`YbhiHfci`[`\`Hi`fb]h]b`z`d`YUgY`  
HY`Yd`cbY`9I`HYfbU`Gi`ddcfhcb`-`,`)`"``"``%cf`Ya`Uj`H`Ya`cb`YI`HYfbU`HY`hgi`ddcfh4`i`bgk`"YXi`"Ui`"Gi`ddcfh`  
`ci`fg`UfY`,`.\$\$Ua`-`-%\$.\$\$da`cb`k`YY`XUmg`UbX`-`.\$\$Ua`-`).\$\$da`cb`k`YY`YbXg`fI`\*)`XUmg`U`mY`UfI`Ʒmci`  
UfY`i`bUV`Y`hc`gi`Va`]hmc`i`f`Ugg][`ba`YbhiXi`Y`hc`U`Zi`h`k`]H`Hi`fb]h]b`mci`a`UmUdd`m`Zc`f`Ub`YI`HYbg]cb`z`Vi`hmc`i`  
a`i`ghfYH]b`mci`f`h]W`Yhbi`a`VYf`Zca`9I`HYfbU`Gi`ddcfhU`cb[`k`]H`Ubmc`H`Yf`fY`Yj`UbhXcW`a`YbHg`L`hc`  
]bWi`XY`Ug`Yj`]XYbVW`hc`gi`ddcfhmc`i`f`YI`HYbg]cb`Udd`]W]h]cb`"Ʒmci`Ya`Uj`9I`HYfbU`Gi`ddcfhmc`i`k`]`  
Ui`hca`UH]W]`m`fYW]j`Y`U`h]W`Yhbi`a`VYf`z`Vi`h]Zmci`HY`Yd`cbY`mci`k`]`b`Y`Y`X`hc`gd`Y`W]Z]W]`m`Ug`\_`Zc`f`cbY`"  
Hi`fb]h]b`U`gc`d`fcj`]XYg`i`dXUH`g`cb`H`Y]f`gm`g`HYa`g`hU`h`g`cb`Hk`]H`Y`f`"

;`YbYfU`m`z`UggYgga`YbhiHUg\_g`a`i`ghVY`gi`Va`]H`Y`X`Y`Y`W`f`cb]W]`m`j`]U`Y`]H`Y`f`Hi`fb]h]b`cf`U`A`ccX`Y`  
Ugg][`ba`Ybhi`b`]b`ghU`b`VW`g`k` \YfY`H`g`]g`b`ch`d`c`g`g]V`Y`z`]h`k`]`V`Y`g`h`U`H`X`cb`mci`f`W`ci`fgY`g`A`ccX`Y`g`]H`k`]H`  
U`HY`fb`U`h]`Y`gi`Va`]gg]cb`XYH]`g`"

:`cf`]b`Zc`fa`UH]cb`cb` \ck`hc`gi`Va`]h]Ugg][`ba`YbHg]cb`]bY`j`]U`A`ccX`Y`. \`h`d`g`#`gh`XYbhi`bgk`"YXi`"Ui`#`ck`!  
gi`Va`]h]Ugg][`ba`Ybhi`a`ccX`Y`"



## 5 WUXYa ]W< cbYgmiUbX`D`U[ ]Uf]ga

D`U[ ]Uf]ga `]g`i`g]b[ `h`Y`k`c`f`X`g`c`f`]X`Y`U`g`c`Z`c`h`Y`f`g`i`U`b`X`d`f`Y`g`Y`b`h]b[ `h`Y`a` `U`g`m`c`i`f`c`k`b`" `#`W`U`b`h`U`\_`Y`a` `U`b`m`  
Z`c`f`a` g`z`Z`c`a` `X`Y`]V`Y`f`U`h`Y` `W`X`Y`U`h]b[ `h`c` `U`W`W`Y`X`Y`b`h`U` `m`i`W`c`d`m]b[ `Z`c`a` `U`g`c`i`f`W` `k` ]h`c`i`h`U`W`\_`b`c`k` `Y`X[ `Y`a` `Y`b`h`

I`B`G`K` `[`f`c`i`d`g`d`U[ ]Uf]ga `]b`h`c` `h`Y` `Z`c` `c`k` ]b[ `W`U`h`Y`[`c`f`]Y`g.

- i bXYfghUbx'mci f'f][ \hg'UbX'fYgdcbg]V]h]Yg'Ug'U'gh XYbhUhl BGK
- VY'Uk UfY'cZd'U[ ]Uf]ga ž'Wcdmf][ \hž' BGK 'Gh XYbh7cXY'cZ7cbXi W'Ubx'5Ww'dhUV'Y'I gY'cZ I BGK '⇒H'F Ygci fW'g'Dc`]Wm
- VY'Uk UfY'cZh'Y'ghUbxUfXg'cZVY\Uj ]ci f'YI dYW'X'cZYj Yfmcby']b'h'Y'I BGK 'Wca a i b]m
- 'cWJh'gYfj ]W'g'UbX'j]bZcfa Uh'cb'UVci hl BGK 'UbX'I BGK '@]VfUfm

Gca Y'cZh'YgY'UfYUg'k ]''VY'ZJa ]]Uf'hc'mci ž'ch'Yfg'k ]''VY'byk "'; U]b]b[ 'U'gc'X'i bXYfghUbx]b[ 'cZU''h'Y fY'UH'X'UgdYW'g'cZ9@-G9'k ]''\Y'd'mci 'a U\_Y'h'Y'a cghcZmci f'gh X]Yg'Uhl BGK ""

[\hhd.##ji V'YW'i \]XYg"'\]VfUfm'i bgk "YXi "Ui #' \]gY#JVci h' \]gY](#)

5 WUXYa ]W=Zcfa Uh]cb

: cf`YggYbh]U`ghi XYbh]bZcfa Uh]cb`fY`Uh]b[ `tc.