



# ARTS2876

I bXYfghUbX]b[ 'h\Y`GY`Z

HYfa `C.bY`#`&\$&\$

GWcc`cZGcWJU`GWYbWg`#`I BGK ``5ftg`UbX`GcWJU`GWYbWg



7ci fgY`Cj Yfj JYk

`GHUZZ7cbhUW`i8YHJ`g`

`7cbj Ybcfg`

B Ua Y	9a Uj`	5j Uj`UVj`]m	@cWUj`cb	D\cbY
A Y`Ub]Y`K \]hY	a Y`Ub]Y`k \]hY4 i bgk "YXi "Ui	K YXbYgXUmj %%Ja !%&da `UbX H\i fgXUmj %%Ja !%&da ž'cf`Vm Uddc]bha Ybh	A 6%*'	- ' , ) `&' \$(

`Hi hcfg`

B Ua Y	9a Uj`	5j Uj`UVj`]m	@cWUj`cb	D\cbY
F ]W_]Y!@YY A W@Ui f]b!Ga ]h	f`a WUi f]b!ga ]h4 i bgk "YXi "Ui	H68	H68	H68

GWXcc``7cbhUW`i`bZcfa Uh]cb

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Fcca `%) -

A cfj Yb`6fck b`7&\$

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d\cbY. '\$&-' , ) `% \$+

7 ci fgY'8YHJ]`g

7 fYX]h'Dc]bHg '\*`

Gi a a UfmcZ'h\Y'7 ci fgY

9UW'cZi g'\Ug'U'gY'ZUbX'Ub']XYbh]mVmj ]fhi Y'cZVY]b[ '\i a Ub''6i hXc'ch\Yf''j] ]b[ 'VY]b[ g'\Uj Y'U'gY'Z3  
8c'ch\Yf''j] ]b[ 'VY]b[ g'\Uj Y'gcW]Ym]b'h\Y'gUa Y'k Um\i a Ubg'Xc3''6'h]g'W'ci fgY'Z'mci 'k]' 'W'bg]XYf'gca Y  
hUX]h]cbU'Uggi a dh]cbg'cZgY'Z'ccX'fY"[ "z'h\Y'W'dUW]m'Z'f'fYUgcb'z'gdYYW'z'UbX'a Ya'c'f'm'Z'f'ca 'U'f'Ub[ Y'cZ

Hi hf]U`g. 'Hi hf]U`g`k ]`VY`i`gYX`hc`cf[ Ub]gY`ga U`"[ fci dg`hc`YghUV`]g\`U`Wc`UVcfUHj`Y`k`cf\_]b[  
Ybj ]fcba Ybhk \YfY`gh XYbthg`WUb`YUfb`Zca`cbY`UbcH`YF`"

F YUX]b[ `E i Ygh]cbg. `: cf`YUW`k`YY\_`m`fYUX]b[ žmci`k ]`Z]bX`fYUX]b[ `Wc`a`dfY\`Ybg]cb`ei`Ygh]cbg`dcgh`X`hc`  
H`Y`I`b]j`Yfg]m`@A`G`"H\`Y`g`Y`k ]`"Y`d`hc`cf]Ybhmc`i`k ]H`fYgd`Y`W`hc`H`Y`Uf[ i`a`Ybthg`dfY`g`Y`bh`Y`X`]b`H`Y`  
Ugg][ bYX`fYUX]b[ g`"

5ggYgga Ybh

5ggYgga YbhHUg\_g`

5ggYgga YbhHUg_	K Y][ \h	8i Y'8UHŸ	Ghi XYbh@YUfb]b[ Ci hŤa Yg'5ggYggYX
K cf_Vcc_`	) \$i	- 'A UfWŸ'fK YY_g'&/ " 'Ť/&+ 5df]'fK YY_g'( 'hc '%\$Ť	&ž
; fci d': UW]h]cb`	&\$i	K YY_g'( ž) ž+ž, 'UbX'-'	%ž
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5ggYgga Ybh8YHU]`g

5ggYgga Ybh% 'K cf\_Vcc\_`

GhUfhXUHŸ.`

@Yb[ hŸ. '5ddfcl ]a UH`m) \$\$'k cfXg'dYf'k YY\_`

8YHU]`g. 'Ghi XYbhg'k ]''dfYdUfY'k f]hŸ'b'Ybhf]Yg'cZ%&'dU[ Yg'cb'hŸY'Ugg][ bYX'fYUX]b[ g'YUWŸ'k YY\_'HŸY  
k cf\_'k ]''VY'gi Va ]hŸX'UbX'UggYggYX'dYf]cX]WŸ'mihŸfci [ \ 'hŸY'hŸfa ": YYXVUW\_.'K f]hŸ'b'Ťa a Ybhg'UbX  
[ fUXYX'U[ U]bghU'WŸ]hŸf]U'g\YYh'

5XX]h]cbU'XYHU]`g.

Mci 'k ]''gi Va ]hmci f'k cf\_Vcc\_'Ybhf]Yg'žcf'K YY\_g'&'UbX'' 'cb'-' 'A UfWŸ '&\$\$'žcf'[ fUXYX'ZYXVUW\_''

5ggYgga Ybh' . '9ggUm

GhUfhXUHy . '

@Yb[ h. '%) \$\$'k cfXg

8YhU]`g. 'Gh XYbhtg`k ]`k f]h' Ub`YggUmfp) \$\$'k cfXgE`hUhFYZYWg`cb`&!' `W]h]WU`YUfb]b[ `YI dYf]YbWg`]b  
fY`Uhcb`hc`Wci fgY`WcbhYbH`H\]g`]g`hY`Z]bU`UggYgga Ybh]b`hY`Wci fgY": YYXVUW\_`K`f]hYb`Wca a Ybhtg`UbX  
[ fUXYX`U[ U]bghU`W]hYf]U`g\YYH'

5XX]h]cbU`XYhU]`g.

H\Y`YggUm]g`Xi Y`cb`%A Um&\$\$`Uh%%) - `d"a "

Hi`fb]h]b`gYh]b[ .`H\]g`Ugg][`ba Ybh]g`gi Va`]hYX`h`fci [ \`Hi`fb]h]b`UbX`gh XYbhtg`WU`b`gYY`Hi`fb]h]b`g]a`]Uf]hm  
fYdcftg"

5 HbXUbW F Yei ]fYa Ybhg





	F YUX]b[	8 Yff]XUž>UWēi Yg f0% - +@\$\$ (Ł'H\Y'5b]a U`H\Uh H\YfYZcfY'≡5a fA cfY'Hc': c`ck Ł'đ'A UH\Yk 7 U'UfWē'5bX'DYfYf'5HfYfrcb'f0Xg"Ł'3` [ S^ BZ[āeabZk

# F Ygci fWg

DfYgWf]VYX`F Ygci fWg`

Df]bhWcd]Yg`cZhY`k YY\_mUgg][ bYX`fYUX]b[ g`Uj Y`VYYb`Wca d]`YX`]bhc`Ub`f5F HG&, +\*`Gh`Xm? ]frik`\\Wk`]g Uj U]UV`Y`Zcf`di fWkUgY`UhhY`I`BGK`'6cc\_g\cd""9`YWfcb]MWcd]Yg`cZhY`fYUX]b[ g`UfY`Ugc`Uj U]UV`Y`cb hY`5F HG&, +\*`A`ccX`Y`dU[ Y.`[\hkd.#a`ccX`Y`h`fi`bgk`"YXi`"Ui](#)

# F YWca a YbXYX`F Ygci fWg

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

Gh`XYbhZYXVUW\_k ]`VY [ UhYfYX`h`fci [ \`a`m9I`dYf]YbW`gi`fj`YmgZ`UbX`mci`k ]`VY [ ]j`Yb`cddcfh`b]h]Yg h`fci [ \`ci`h`hY`gYa`YghY`f`h`c [ ]j`Y`]b`Zcfa`U`ZYXVUW`"H\Y`"Ugh]a`Y`=hUi [ \h3DFE`\$\*) ( G`VWdefS`V[ Y`fZW E`WXk`Ug`]b`&\$%-`"H\]g`Wc`cfhcZgh`XYbhg`[ Uj`Y`dcg]h] Y`ZYXVUW`cb`hY`Wci`fgY"

6UgYX`cb`h`lg`ZYXVUW\_z`=\Uj`Y`a`UXY`hY`Z`ck`]b[ `WXUb[ Yg`h`hY`Wci`fgY.

%`7`cbh`bh!`=\Uj`Y`a`cX]ZYX`hY`Wc`bh`bh]b`cfXY`f`h`c`df]j`]Y[ Y`XYd`h`fU`hY`f`h`Ub`VfYUX`h`[ ]j`Yb`hY`dfYggi`fYg`cZ`hY`h`f]a`YghY`f`gmgh`Ya`/`

&`5bbci`bW`a`Ybhg`!`=k`]`i`d`cUX`j`]XYc`gY[ a`Ybhg`h`c`A`ccX`Y`]b`cfXY`f`h`c`UXXfYgg`]ggi`Yg`fY`U`hYX`h`c`UggYgga`Ybh`UbX`Wci`fgY`Vi`g]bYgg`"H\]g`k`]`[ ]j`Y`i`g`a`cfY`h`a`Y`]b`\$` U\`

Gi Va ]gg]cb`cZ5ggYgga YbhHUg\_g

Gi Va ]gg]cb`cZ5ggYgga YbhHUg\_g

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Ʒmci`YbWci`bHYf`U`dfcV`Ya`k`Yb`U`HYa`dh]b[`hc`gi`Va`]hmc`i`f`Ugg][`ba`Ybh`h`fci`[`\`Hi`fb]hb`z`d`YUgY`  
HY`Yd`cbY`9I`HYfbU`Gi`ddcfhcb`-`,`)`'`'`'`%cf`Ya`U]`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`UfL`Ʒmci`  
UfY`i`bUV`Y`hc`gi`Va`]hmc`i`f`Ugg][`ba`YbhXi`Y`hc`U`ZUi`hik`]h`Hi`fb]hb`mci`a`Um`Udd`mi`Zc`f`Ub`YI`HYbg]cb`z`Vi`hmc`i`  
a`i`gh`fY`hU]b`mci`f`h]W`Yhbi`a`VYf`Zca`9I`HYfbU`Gi`ddcfhU`cb[`k`]h`Ubmc`h`Yf`fY`Yj`Ubh`Xc`W`a`Ybhg`L`hc`  
]bWi`XY`Ug`Yj`]XYbW`hc`gi`ddcfhmc`i`f`YI`HYbg]cb`Udd`]W]hcb`Ʒmci`Ya`U]`9I`HYfbU`Gi`ddcfhmc`i`k`]`  
Ui`hca`U]W]m`fY`W]j`Y`U`h]W`Yhbi`a`VYf`z`Vi`h]Zmci`HY`Yd`cbY`mci`k`]`b`YYX`hc`gd`YW]W]m`Ug`Zc`f`cbY`  
Hi`fb]hb`U`gc`dfcj`]XYgi`dXU`HY`g`cb`h`Y]f`gmgh`Ya`gh`U`h`g`cb`Hk`]hYf`"

;`YbYfU`m`z`UggYgga`YbhHUg\_g`a`i`gh`VY`gi`Va`]hYX`Y`YW`fcb]W]m`j`]U`Y]h`Yf`Hi`fb]hb`cf`U`A`cc`X`Y`  
Ugg][`ba`Ybh`h`b`]bg`h`Ub`W`g`k`YfY`h`g`]g`bchidcgg]V`Yz`]hk`]`VY`g`h`YX`cb`mci`f`Wci`fgY`g`A`cc`X`Y`g`]h`k`]h`  
U`HYfbU]j`Y`gi`Va`]gg]cb`XYhU]g`"

:`cf`]b`Zc`fa`U]cb`cb`\`ck`hc`gi`Va`]hUgg][`ba`Ybhg`cb`]bY`j`]U`A`cc`X`Y`.\`h`tdg`#`gh`XYbh`i`bgk`"YXi`"Ui`#`ack`!  
gi`Va`]hUgg][`ba`Ybh`a`cc`X`Y`"

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

D`U[ ]Uf]ga `]g`i g]b[ `hY`k cfXg`cf]XYUg`cZchYfg`UbX`dfYgYbh]b[ `hYa `Ug`mci f`ck b" `hWUb`hU`Y`a Ubm  
Zcfa gž`Zca `XY`]VYfUHY`WXYU]b[ `hc`UWV]XYbhU`mW`dm]b[ `Zca `U`gci fW`k ]h`ci hUW\_bck`YX[ Ya Ybh`

I BGK `[ fci dg`d`U[ ]Uf]ga `]bhc`hY`Zc`ck ]b[ `WUHY`[ cf]Yg.

7 cdm]b[ .`i g]b[ `hY`gUa Y`cf`j Yfmg]a ]Uf`k cfXg`hc`hY`cf][ ]bU`hYI hcf]XYU`k ]h`ci hUW\_bck`YX[ ]b[ `hY`  
gci fW`cf`i g]b[ `ei chU]cb`a Uf\_g" `H\]g`U`gc`Udd`]Yg`hc`]a U[ Ygž`UfhUbX`XYg][ b`dfc`YWgž`Ug`k Y`Ug  
dfYgYbhU]cbg`k \YfY`gca YcbY`dfYgYbh]g`UbchYf`g`]XYUg`cf`k cfXg`k ]h`ci hWYX]h`

hUddfcdf]UHY`dUfUd`fUg]b[ .`7`U`b[ ]b[ `U`ZYk`k cfXg`UbX`d`fUgYg`k`Y`a cghmifYU]b]b[ `hY`cf][ ]bU`  
ghfi W`fY`UbX`#`f`dfc[ fYgg]cb`cZ]XYUg`cZ`hY`cf][ ]bU`ž`UbX`]bZcfa U]cb`k ]h`ci hUW\_bck`YX[ Ya Ybh`H\]g`U`gc  
Udd`]Yg`]b`dfYgYbhU]cbg`k \YfY`gca YcbY`dUfUd`fUgYg`UbchYf`g`]XYUg`cf`k cfXg`k ]h`ci hWYX]hU`bX`hc  
d]YW]b[ `hc[ YhYf`ei chYg`UbX`dUfUd`fUgYg`]bhc`U`bYk`k \c`Yž`k ]h`ci hUddfcdf]UHY`fYZYfYbW]b[ "

7 c`i g]cb.`k cf\_]b[ `k ]h`chYfg`Vi hdUgg]b[ `cZ`hY`k cf\_]Ug`U`dYfgcb`g`]bX]j ]Xi U`k cf\_"`7 c`i g]cb`U`gc  
]bWi XYg`dfcj ]X]b[ `mci f`k cf\_`hc`UbchYf`gh`XYbhVYZc`fY`hY`Xi Y`XUHYž`cf`Zc`f`hY`di fdcgY`cZ`hY`a

- i bXYfghUbx'mci f'f][ \hg'UbX'fYgdcbg]V]h]Yg'Ug'U'gh XYbhUhl BGK
- VY'Uk UfY'cZd'U[ ]Uf]ga ž'Wc'dmf][ \hž' BGK 'Gh XYbh7cXY'cZ7cbXi W'Ubx'5W'W'dhUV'Y'I gY'cZ  
I BGK '⇒H'F'Ygci f'W'g'Dc`]W'h
- VY'Uk UfY'cZ'U'g'U'bx'Uf'X'g'c'Z'V'Y'\Uj ]ci f'Y'I d'Y'W'X'c'Z'Y'j Y'f'm'c'b'Y'']b'h'Y'I BGK 'W'c'a'a'i'b]m
- 'c'W'U'h'g'Y'f'j ]W'g'UbX'j'b'Z'c'f'a U'h'c'b'U'V'c'i h'l BGK 'UbX'I BGK '@]V'f'U'f'm

Gca Y'cZ'U'g'Y'U'f'Y'U'g'k ]''V'Y'Z'J'a ]]U'f'hc'mci ž'c'h'Y'f'g'k ]''V'Y'b'Y'k ''; U]b]b[ 'U'gc'X'i bXYfghUbx]b[ 'cZU''h'Y  
f'Y'U'h'X'U'gd'Y'W'g'c'Z'9@-G'9'k ]''\Y'd'mci 'a U\_Y'h'Y'a c'g'h'c'Z'mci f'g'h X]Y'g'U'hl BGK ''

[\h'c'.#\]j' V'Y'W'f'i \]X'Y'g'' \]V'f'U'f'm'i b'g'k "Y'X'i "U'i #' \]g'Y'#\]V'c'i h' \]g'Y](#)

5 WUXYa ]WbZcfa Uhcb`

: cfYggYbhU`ghi XYbh]bZcfa Uhcb`fY`Uh]b[ `rc.

- fYei YghZcfYI hYbg]cb/