

ARTS3092

A YX]U'UbX'HfUbgZcfa Uh]cb`]b'h\Y'5g]U!DUWZ]W

HYTa Z&\$&%

7 ci fgY`Cj Yfj]Yk

GHJZZ`7 cbHJW`8YHJ]`g

7cbj Ybcfg

B Ua Y	9a Uj`	5j Uj`UVj`]m	@cWUjcb	D\cbY
Gw`hG\UbYf	g"U\UbYf4 i bgk "YXi "Ui	K YXbYgXUm %\$!%:]b`C b`]bY 7`Uggfcca g 7 ci fgY`F cca		

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F cca `! %&@Yj Y`" žF cVYfhK YVghYf`6i]X]b[`fj %(`

D\cbY. `f&&L`-` ;) `(,) *

9a Uj. [gUa 4 i bgk "YXi "Ui](#)

K YVg]hY. [k.k.k "Ufmg"i bgk "YXi "Ui #gUa](#)

5W_bck`YX[Ya YbhcZ'7ci bHfm

I B GK `5fngž8Yg][b`UbX`5fWk]fYWhi fY? Ybg]b[hcb`UbX`DUXX]b[hcb`Wla di gYg`UfY`Vi]hcb`5Vcf][]bU`
@UbXg"K Y`dUmci f`fYgdYWhg`hc`hY`6]X}[U`UbX` ; UX][U`dYcd`Yg`k`c`UfY`hY`7i`gfcX]Ubg`cZ`hY`gY`UbXg"
K Y`UW_bck`YX[Y`hY`5Vcf][]bU`UbX`Hc`fYg`G`fU]h`g`UbXYf`dYcd`Ygž`hY` :]fgh5i`gfcU`]Ubgžk`c`gY`UbXgž
k]bXg`UbX`k`U`fYg`k`Y`U`bck`g`UfYž`UbX`dUm`fYgdYWhi`hc`hY`f`i`b]ei`Y`j`U`i`Ygž`UbX`hY`f`V`b`h]bi]b[`UbX
YbXi`f]b[`W`h`fYg`k`\\]W`XYYdYb`UbX`Yb`f]W`hY`Z`cZci`f`b`U`h]cb`UbX`W`a`a`i`b]h`Yg`"

U[Y`W`ci`f`hY`gmicZ`hY`C`Z]W`cZ`hY`D`fc`J`]W`!7`UbW`c`f`b`X][Ybci`g`[L`B`G`K`f`g`b`X\]\[Ybci`g`g`f`U`h`\[`m](#)

7ci fgY'8YHJ]`g

I b]hg'cZ7fYX]h*`

Gi a a UfmicZ\Y'7ci fgY

H\]g'Wci fgY'YI d`cfYg'XYVUH'g'WcbWfb]b['fUbgbUH]cbU`]ga žfY[]cbU`]gUH]cb'UbX['cVU`]gUH]cb']b'HY

5ggYgga Ybh

D`YUgY`bchY`h`Uhmci`a`i`ghia`U`Y`U`gYf]ci`g`UHYa`dhUih\Y`tk`c`Zcfa`U`k`f]HYb`UggYgga`YbhUg_g`fBggYgga`Ybhg`%/`" `E`hc`VY`Y`][`]V`Y`hc`dUgg`h`g`Wci`fgY"

5ggYgga YbhUg_	K Y][\h	8i Y`8UH`	7ci fgY`@YUfb]b[Ci hWca Yg`5ggYggYX
%`A`]X!HYfa` `9I Ua	' `)	%&#%\$#&\$&\$`\$`-`.\$`\$`5A	%z`&
&`"Hi`hc`f]U`";`fci`d`DfYgYbhU]cb	&\$	K`YY`_g`" `!%\$	%z`&z`" `z`(`
'`" `F`YgYUfW`D`UdYf	(`)	&&#%#&\$&\$`\$`-`.\$`\$`5A	%z`&z`" `z`(`

5ggYgga Ybh`A`]X!HYfa` `9I Ua

GHUfhXUH. ` \$) `#%\$#&\$&\$`\$`-`.\$`\$`5A

5ggYgga Ybh`Yb[`h. `.%z`\$`\$`\$`k`cfXg

Gi Va]gg]cb`bchYg. `6Y`gi`fY`hc`W`Y`W`_mci`f`Z`Y`k` \Yb`mci` `gi`Va`]f`Gi`Va`]gg]cbg`7`5`B`B`C`H`VY`fYd`U`W`X

fYwEj YfYXE" Gh XYbtg WJb fYUX U" UVci hH Y' I BGK GdYWU 7 cbg]XYfUhc b' dc] Wn\YfY
!\hfdg. #gh XYbhi bgk "YXi "Ui #gdYWU! Wcbg]XYfUhc b

Zmci UfY'i bUV'Y'hc U'gc Wca d'YH' h'Y'gi dd'Ya YbHufmYI Ua 'cj Yf'U'gYj Yb'XUmidYf]cXZmci 'g\ci 'X'i gY
mci f'XcW a YbH'X'WfW a ghUbW'g'hc Udd'mZcf'U'Y'k]h'XfUk U'k]h'ci hUWXYa]WdYbU'hmk]h'ZY
fYa]gg]cb" Gh XYbtg WJb fYUX U" UVci hH Y' I BGK : YY'F Ya]gg]cb' dc] Wn\YfY!
\hfdg. #gh XYbhi bgk "YXi "Ui #ZY!fYa]gg]cb

5ggYgga Ybh&. Hi hcf]U' ; fci d'DfYgYbhU]cb

5ggYgga Ybh`Yb[h. ' \$!(\$'a]bi h'g'XYdYbX]b['cb'g]nY'cZ[fci d#WUgg
Gi Va]gg]cb' bch'g. DfYgYbhU]cbg'k]`VY'WcbXi WYX']b'mci f'hi hcf]U'g
8i Y'XUH'. 'K YY_g' ' !%\$

Gh XYbtg fYW'j Y'ZYXVUW'g\YYh]b'WUgg"

H\]g']g' bchU'Hi fb]h]b'Ugg][ba Ybh

5XX]h]cbU'XYH]`g

H\]g']g' U' [fci d'Ugg][ba Ybh'

: i fH'Yf'XYH]`g'cZ'h]g'Ugg][ba Ybhk]`VY'dfcj]XYX']b' h'Y'Wci fgY'a ccX'Y"

5ggYgga Ybh' . F YgYUfW' DUdYf

5ggYgga Ybh`Yb[h. :&) \$\$'k cfXg
Gi Va]gg]cb' bch'g. '6Y'gi fY'hc W'YW' mci f'Z'Y'k \Yb' mci 'gi Va]h'Gi Va]gg]cbg'75BBCH'VY'fYd'UW'X
UZYf'h'Y'Xi Y'XUH' dUggYg" K \UH'j Yf' mci '\Uj Y'gi Va]h'X'k]`VY'`cW_YX']b'Uh'h'Y'h'a Y'h'Y'Xi Y'XUH'
dUggYg" Mci 'WJb' bch'W'Ub[Yg'h]g" Zmci ']b'h' b'X'hc'gi Va]h'UH'Z'UbX'\Uj Y'dfYj]ci g'mgi Va]h'X'U'XfU'Z'
d'YUgY'a U_Y'gi fY' mci 'XY'Y'h'Y'XfU'Z'h'VY'Z'fY'h'Y'Xi Y'h'a Y'dUggYg"
8i Y'XUH'. '&#%#&\$&\$ \$- . \$\$'5A

Gh XYbtg fYW'j Y'k f]h'Yb'ZYXVUW']b'Hi fb]h]b"

&Z) \$\$'k cfXg"

H\]g'Ugg][ba Ybh]g'gi Va]h'X'h'fci [\ 'Hi fb]h]b'UbX'gh XYbtg Xc' bchigYY'Hi fb]h]b'g]a]'Uf]m'fYdc'f'g"

5XX]h]cbU'XYH]`g

: i fH'Yf'XYH]`g'cZ'h]g'Ugg][ba Ybhk]`VY'dfcj]XYX']b' h'Y'Wci fgY'a ccX'Y""5b'Ugg][ba YbhXYgW]d]h]cb'k]`
VY'dcgh'X'Xi f]b['C!k Y_k]h' h'Y'UggYgga YbhW]h'f]U" 'D'YUgY' bch' h'Uh]Zmci f'k cf_']g']b'h'ffi dh'X'Vm
WfW a ghUbW'g'VY'ncbX' mci f'W'cb'f'c'`mci 'a UmVY'Y'] []V'Y'Z'c'f'U'g'c'f'h'Y'fa 'YI h'bg]cb'j]U'h'Y'I BGK GdYWU
7 cbg]XYfUhc b'dfc'W'gg" Mci 'WJb' fYUX'U" UVci h'U'h'dfc'W'gg'\YfY'!\hfdg. #gh XYbhi bgk "YXi "Ui #gdYWU!

Wcbg]XYfUhc"b"

D`YUgY`bchY`hUhkY`UghXUmhc`gi Va]hk cf_k]h`Ub`Uddfcj YX`gdYW]U`Wcbg]XYfUhc]b`YI hYbg]cb`k]`VY`* h`
8YWYa VYf`Uh- Ua "Zmci`UFY`i bUV`Y`hc`Wca d`YhY`hY`UggYgga Ybhk]h]b`hUhja Y`ZUa Y`Xi Y`hc
WfW a ghUbWg`ci hg]XY`mci f`Wcbfc`Zmci`g\ci`X`XcW a YbhkcgY`WfW a ghUbWg`UbX`Udd`miZcf`UH
k]hXfUk U`Zca`hY`Wci fgY`k]h`ZY`fYa]gg]cb`Zca`hY`I b] Yfg]m`Gh XYbfg`WUb`fYUX`U`UVci hZY
fYa]gg]cb`YfY`!\hdg`#gh XYbhi bgk`YXi`Ui`#ZY`fYa]gg]cb

	Hi hcf]U`	<ck`XcYg`hY`bhfYbYhUZYVh`hY`VU`UbW`cZ` W`bfc`UbX`ZYXca`]b`5g]Ub`W`i`bf]Yg3`K`U`hUfY` hY`dc`]h]Vg`Ufci`bX`hY`Xca`Ygh]W]hcb`cZ`hY` bhfYbYh]b`W`i`bf]Yg`Y`H\U]`UbX`UbX`hY`DF`7`3`
K YY_ ; . %Bcj Ya VYf!) `Bcj Ya VYf	@YVh`fY	A YX]U`UbX`A`cV`]h]Yg`!`D\cbY`7i`h`fYg
	Hi hcf]U`	K`Y`k`]X]gW`gg`hY`]ggi`Yg`Ufci`bX`a`cV`]Y`d\cbY` W`h`fYg`]b`5g]U`K`Y`k`]Y`I`Ua`]bY`hY`]bhf]d`Um` VY`k`YY`b`a`cV`]Y`d\cbY`]bXi`gh]Yg`UbX`hY` Yj`c]`]b[`W`h`fYg`cZa`cV`]Y`i`gY`k`]h]b`hY`fY[]cb`
K YY_ - . ; `Bcj Ya VYf! &Bcj Ya VYf	@YVh`fY	5g]Ub` ; Ua`]b[`7i`h`fYg
	Hi hcf]U`	K`Y`k`]X]gW`gg`hY`]fgY`cZcb`]bY`UbX`a`cV`]Y` [`Ua`]b[`z`Ug`k`Y`Ug`Y`Gdc]fg`]b`gca`Y`5g]Ub` W`i`bf]Yg`
K YY_ %\$. %`Bcj Ya VYf` !`%`Bcj Ya VYf	@YVh`fY	F`Yj`]Yk`UbX` :]bU`7`ca`a`Yb]g`cb`hY` 7`ci`fgY`
	Hi hcf]U`	:]bU`]g]b[`M`ci`f`F`YgYUfW`DUdYf`

F Ygci fWg

DfYgW]VYX F Ygci fWg

Gi Va]gg]cb`cZ5ggYgga YbhiHUg_g

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

Ʒmci`YbWci bHYf`U`dfcV`Ya`k` \Yb`UH`Ya` dh]b[`hc`gi`Va`]hmc`i`f`Ugg][`ba`Ybhi`h`fci`[`\`Hi`fb]h]b`z`d`Y`Ug`Y`
HY`Yd`l`cb`Y`9I`HY`fb`U`Gi`ddc`fh`cb`-`'`,`)`"``'``%`cf`Ya`U]`h`Ya`i`cb`YI`HY`fb`U`HY`hgi`ddc`fh`4`i`bgk`"YXi`"Ui`""Gi`ddc`fh`
l`ci`fg`UfY`,`.\$`\$Ua`-`-%`\$.`\$`\$da`i`cb`k`YY`_X`Umg`U`bX`-`.\$`\$Ua`-`-`).`\$`\$da`i`cb`k`YY`_Y`bX`g`f`l`*)`X`Umg`U`m`Y`U`f`l`"Ʒmci`
UfY`i`b`UV`Y`hc`gi`Va`]hmc`i`f`Ugg][`ba`Ybhi`Xi`Y`hc`U`Z`Ji`h`k`]h`Hi`fb]h]b`mci`i`a`Um`Udd`m`Z`f`U`b`YI`HY`bg]cb`z`Vi`hmc`i`
a`i`gh`f`Y`h]b`mci`f`h]W`Y`hbi`a`VY`f`Z`ca`9I`HY`fb`U`Gi`ddc`fh`f`U`cb[`k`]h`U`b`m`c`h`Y`f`f`Y`Y`U`b`h`X`c`W`a`Y`b`h`g`k`h`c`
]b`Wi`XY`U`g`Y`j`]X`Y`b`W`hc`gi`ddc`fh`mci`f`YI`HY`bg]cb`Udd`]W`h]cb"Ʒmci`Ya`U]`9I`HY`fb`U`Gi`ddc`fh`mci`k`]`
Ui`h`ca`U`h]W`U`m`f`Y`W`]j`Y`U`h]W`Y`hbi`a`VY`f`z`Vi`h]Z`mci`HY`Yd`l`cb`Y`mci`k`]`b`Y`Y`X`hc`gd`Y`W`Z]W`U`m`Ug`_`Z`f`c`b`Y`"
Hi`fb]h]b`U`gc`d`fc`j`]X`Y`g`i`d`X`U`h`Y`g`c`b`h`Y`]f`g`m`g`h`Ya`i`g`h`U`h`g`c`b`H`k`]h`Y`f`"

;`Yb`Y`f`U`m`z`Ugg`Y`gga`Yb`hi`U`g`_`g`a`i`gh`V`Y`gi`Va`]h`Y`X`Y`Y`W`f`c`b]W`U`m`j`]U`Y`]h`Y`f`Hi`fb]h]b`c`f`U`A`cc`X`Y`
Ugg][`ba`Yb`h`i`h`]b`g`h`U`b`W`g`k` \Y`f`Y`h`l`g`]g`b`c`h`d`c`g`g]V`Y`z`]h`k`]`V`Y`g`h`U`h`X`c`b`mci`f`W`ci`fg`Y`g`A`cc`X`Y`g`]h`k`]h`
U`h`Y`fb`U`h]`Y`gi`Va`]gg]cb`X`Y`h]g`"

:`cf`]b`Z`fa`U`h]cb`c`b`l`ck`hc`gi`Va`]h`Ugg][`ba`Yb`h]g`c`b]b`Y`j`]U`A`cc`X`Y`.\`h`d`g`#`g`h`X`Y`b`h`i`bgk`"YXi`"Ui`#`ck`!
gi`Va`]h`Ugg][`ba`Yb`h`a`cc`X`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`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`

5 WUXYa]WbZcfa Uh]cb

8i Y`tc`Yj`c`j`]b[`UX]]W`VmBGK` <YU`h`z`gh` XYbh`a` i` gh`WXYW`Zc`f`i` dXU`h`X`]bZcfa` Uh]cb`fY[`UfX]b[`cb`]bY`
`YUfb]b[`Zc`f`U`"5`fng`z`8`Yg][`b`UbX`5`fW]`h`W`i` fY`W`i` fgYg`h`]g`h`fa` `fj`]U`A` ccX`Y`c`f`W`i` fgY`]bZcfa` Uh]cb`
dfcj`]XYX`"Ł

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

- fYei` Ygth`Zc`f`YI` h`bg]cb/
- `UH`gi` Va`]gg]cbg[`i`]XY`]bYg/
- fYj`]Yk`cZa` Uf_g/
- I`BGK` <YU`h`UbX`GUZ`h`m`d`c`]W`Yg/
- YI`Ua`]bUh]cb`dfc`W`Xi` fYg/
- gdYW]U`W`cbg]XYfUh]cb`]b`h`Y`Yj` Ybh`cZ`]`b`Ygg`c`f`a`]gUXj` Ybh` fY/
- gh` XYbh`Yei`]m`UbX`X]gUV`]m/
- UbX`c`h`Yf`YggYbh]U`UWXYa`]W]bZcfa` Uh]cb`z`g`YY

[\hdg.#k k k "Ufng"i bkg "YXi "Ui #W ffYbhgh XYbh#UWXYa \]W\]bZcfa Uh\]cb#dfchWc`g\[`i` \]XY`\]bYg#](#)

⇒ U[Y`7`fYX]h

D\chc`Vm]5a` UbXU`>cbYg`cb`l` bgd`Ug\

7F ⇒ CG

7F ⇒ CG`Dfcj`]XYf`7`cXY.` \$\$\$- , ;