



# ARTS2095

8][ ]hU`HYW\bc`c[ ]Yg`UbX`hY`GY`Z

HYfa `Cby`#`&\$%-



7ci fgY`Cj Yfj ]Yk

`GHUZZ7cbhUWhi8YHJ`g`

`7cbj Ybcfg`

B Ua Y	9a Uj`	5j Uj`UVj`]m	@cWjhcb	D\cbY

7 ci fgY'8YHJ)`g

7 fYX]hDc]bHg`\*`

Gi a a UfmicZ\hY'7 ci fgY

Gi VYWh5fYU.`? WWS[5 g fgdWS` V FWUZ` a`aYk

H\]g`Wci fgY`YI d`cfYg`hY`k Umg`h`UhX][ ]H`a`YX]U`UbX`hY`Wbc`c[ ]Yg`g`UdY`ci f`Wc`Y`W]j`Y`UbX`]bX]j` ]Xi`U`i`bXYfg]UbX]b[ g`cZ`hY`gY`Z`" `hXfUk`g`Vch`h`YcfYh]W]UbX`dcdi`Uf`UW]ci`bhg`cZ`hY`fY`Uh]cbg\]d`VY`h`YYb`hY`Wbc`c[ ]Yg`z`]bX]j` ]Xi`U`g`UbX`W`h`fYg`Mci`k`j`YI`Ua`]bY`hY`W`b]bi`]hYg`UbX`X]gW`b]bi`]hYg`VY`h`YYb`c`X`UbX`bYk`"gY`Za`U\_]b[ `dfUW]W]g`gi`W`Ug`ci`fbU]b[ #V`c[ [ ]b[ /UbX`gY`Z`dcf]U]h`fY`#gY`Z]Yg`z`h`c`W`bg]XYf`hY`k`Umg`h`Uha`YX]U`UbX`hY`Wbc`c[ mVch`g`UdY`z`UbX`UfY`g`UdYX`Vm]gc]W]c!`W`h`fU`i`bXYfg]UbX]b[ g`cZ]XYb]h]m`Z`fa`Uh]cb`"Mci`k`j`YI`d`cfY`hY`k`Umg`h`Uh]hY`Wbc`c[ ]Yg`UbX`a`YX]U`d`Uh]Z`fa`g`W`bg]f]U]b`gca`Y`gY`j`Yg`UbX`YbU`V`Y`chY`fg`"K`Y`k`j`U`g`c`W`bg]XYf`hY`k`Umg`h`Uh]gY`Za`U\_]b[ `dfUW]W]g`]b]hY`fgY`W]k`]h`X`U]h]!`[`Uh]Y`f]b[ `dfUW]W]g`z`XYg][ b`dfc]W]ggY`g`z`Vi`g]bY`gg`a`cXY`g`z`UbX`di`V`]W]dc`]W]h`Hcd]W]g`]b]W]i`XY`" ]Z]!\`UW\_]b[ `UbX`hY`ei`Ub]h]Z]YX`gY`Za`cj`Ya`Yb]z`a`]W]c]W]Y`V]f]m]UbX`V]f]UbX]b[ z`a`YX]U]hY`X`]b]h]a`UW]Y`g`]b`X`U]h]b[ `UbX`\`cc`\_!`i`d`Udd`W`h`fY`g`z`UbX`V]ca`Y]f]W]g`UbX`gi`fj`Y`]Ub]W]"

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

%`9j`U`i`Uh`U`f]Ub[ Y`cZ]X][ ]H`hY`Wbc`c[ ]Yg`z`]b]W]i`X]b[ `gc]W]U`a`YX]U`d`Uh]Z`fa`g`UbX`dfUW]W]g`&`5dd`m]h`YcfYh]W]Z]Ua`Yk`cf`\_g`]b`cf]XYf`h`YI`d`U]b`hY`]a`dUW]icZa`YX]U`UbX`hY`Wbc`c[ mcb`]bX]j` ]Xi`U`UbX`W`c`Y`W]j`Y`YI`dfY]gg]cbg`cZ]XYb]h]m]`" `7ca`a`i`b]W]U]h`W]YU]f]m]UbX`dY]f]gi`Ug]j`Y`m]b`Vch`j`Yf]VU`UbX`k`f]h]Y`b`W`cb]h]Y]h]g`"(`8Yg][ b`UbX`W`cb]Xi`W]h]V]Ug]W]f]Y`gY`U]f]W]z`Vch`]b]XY`dY`b]XY`b]h]m]UbX`]b`hY`Ua`g`z`Xf]Uk`]b[ `cb`UW]U]XYa`]W]UbX`bcb!`UW]U]XYa`]W]Y]f]gci`f]W]g`"

HYUW] ]b[ `G]h]f]U]hY`[ ]Yg`

H\]g`Wci fgY`dfcj`]XYg`gh`XYb]h]k`]h`hY`c`ddc]f]h`b]m]h`c`X]Y]Y`cd`W]h]W]U`UbX`W`cb]W]d]h`U`Z]Ua`Yk`cf`\_g`Z`cf`i`bXYfg]UbX]b[ `X][ ]H`hY`Wbc`c[ m]UbX`]h]g`fY`Uh]cbg\]d`h`hY`gY`Z`":`UW]!`h`!`Z]UW`Y`W]h`fYg`Uh]hY`g]h]U]f]h]cZ`hY`Wci`fgY`YI`hY`bX`hY`gY`h]f]Y`U]X]b[ g`h`c`]b]h]c]Xi`W`\_`Y]m]h`YcfYh]W]W`cb]W]d]h]g`Z`ca`hY`fY`U]X]b[ g`z`W]U]gY`gh`X]Yg`z`UbX`fYgY`U]f]W]a`Y`h`c`Xg`UbX`a`Y`h`c`Xc`c[ ]Yg`Xf]Uk`b`Z`ca`hY`Z]Y`Xg`cZ`g]W]Y]b]W]UbX`hY`Wbc`c[ m]gh`X]Yg`z`a`YX]U`gh`X]Yg`UbX`W`h`fU`gh`X]Yg`"5Z]Yf`hY`]b]h]U`Y`W]h`fYg`z`gh`XYb]h]g`dfY`d]U]fY`Z`cf`h`h`c]f]U`g`h`f]ci`[ \`Z]YI`]V`Y`cb`]b]Y`UW]j`]h]Yg`z`g`c]f]h]X][ ]H`Y`W]h`fYg`UbX`gY`h]f]Y`U]X]b[ g`"Hi`h`c]f]U`g`Yb]W`ci`fU[ Y`W]h]W]h`fY`Z]Y`W]h]cb`cb`\_`Y]m`fY`U]X]b[ g`UbX`W]U]gY`gh`X]Yg`z`Vi`]X]b[ `cb`gh`XYb]h]g`ck`b`cV]gY]f]U]h]cbg`cZ`f]Y]Y]f]m]X]U]m]f]Y]b[ U[ Ya`Yb]h]k`]h`X][ ]H`hY`Wbc`c[ ]Yg`"Hi`h`c]f]U`g`U`g`c`dfcj`]XY`gi`ddc]f]h]UbX`Z`fa`Uh]Y`Z]Y`X]V]U]W`\_`cb`UggY`gga`Yb]h]g`"G]h`XYb]h]g`U]fY`Yb]W`ci`fU[ YX`h`c`dfc]Xi`W`a`i`h]a`cX]U`UbX`]b]h]f]U]W]h]Y`k`cf`\_`Z`cf`UggY`gga`Yb]h]U`cb[ g]X]Y`k`f]h]Y`b`gi`Va`]gg]cbg`"

## 5ggYgga Ybh

H\]g'7ci fgY'Cj Yfj ]Yk 'dfcj ]XYg'mci 'k ]h'h\Y'VUg]W]bZcfa U]cb'UVci h'h\Y'Wci fgY'UbX'YI d'U]bg'ja dcfUbh I B GK 'dc'j]Wm'8YHU]g'Zcf'YUWX'UggYgga YbhUFY'Uj U]UV'Y'cb'A ccX'Y"

Hc'dUgg'h\]g'Wci fgY'Zmci 'a i gha U\_Y'U'gYf]ci g'UhhYa dhUh5ggYgga Ybhg'%UbX'' "

H\Y'dfYZffYX'fYZfYbW]b[ 'gmghYa 'Zcf'h\]g'Wci fgY'jg'<Ufj UfX'zk \]Wk 'jg'Ub'j]b!hI hfYZfYbW]b[ 'gmghYa " H\YfY'UFY''b\_g]b'h\Y''<Y'dZ 'F Ygci fW'g''cb'A ccX'Y'UVci h\ck 'hc'i gY'<Ufj UfX''Mci 'a Umi gY'Ubch\Yf gmghYa 'Zcf'Ub'UggYgga Ybh]Zmci 'k ]g\z'Vi hirci 'a i ghUdd'm]hWcbg]ghY'bhmiUbX'UWW fUH'Y'm"

## 5ggYgga YbhHUg\_g'

5ggYgga YbhHUg_	K Y][ \h	8i Y'8UH'	Gh XYbh@YUfb]b[ Ci hWca Yg'5ggYggYX
K f]h]b[ 'HUg_	( \$i	#\$#\$' #&\$%- '%%) - 'DA	%z&z
hX]j ]Xi U'F YgYUfW' Dfc YW' 8Yj Y'cda Ybh	) i	Bch5dd']WUV'Y	%z&z(
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## 5ggYgga Ybh8YHU]`g

5ggYgga Ybh% K f]h]b[ 'HUg\_

GhUfhXUH'. 'Bch5dd']WUV'Y

@Yb[ h. '&z\$\$\$k cfXg

8YHU]g. '&z\$\$\$!k cfX'k f]h]b'Ugg][ ba Ybh'zZYXVUW'dfcj ]XYX'j ]U'Hi fb]h]b"

Hi fb]h]b'gYh]b[ . H\]g'Ugg][ ba Ybh]g'gi Va ]h'X'h'fci [ \ 'Hi fb]h]b'UbX'gh XYbhg'W]b'gYY'Hi fb]h]b'g]a ]Uf]m fYdcffg"

5ggYgga Ybh' . 'bX]j ]Xi U`F YgYUfW`Dfc YW`h

GhUfhXU`hY . 'Bch5dd`]WUV`Y

@Yb[ h\ . '&ž) \$\$!k cfXgžcf`Yei ]j U`Ybh

8YhU]`g . '&ž) \$\$!k cfX`cf`Yei ]j U`YbhfYgYUfW`d`fc`YW`žZYXVUW`\_`d`fcj ]XYX`j ]U`Hi fb]h`b"

Gi Va ]gg]cb`bchYg.5b`UXX]h]cbU`ž`bcb!Hi fb]h`b`"]b`\_`k ]``VY`d`fcj ]XYX`ž`f`h`Y`gi Va ]gg]cb`cZUbmibcb!hYI h U`Y`Ya Yb`h`g"

Hi fb]h`b`gYh]b[ . 'H\]g`Ugg][ ba Ybh]g`gi Va ]hYX`h`fci [ \ `Hi fb]h`b`UbX`gh XYbhg`WU`b`gYY`Hi fb]h`b`g)a ]Uf]hm`fYd`c`f`g"



F Ygci fWg

DfYgWf]VYX`F Ygci fWg`

D`YUgY`gYY`A ccX`Y`Zcf`U`fYei ]fYX`fYUX]b[ g`UbX`fYgci fWg"

F YWca a YbXYX`F Ygci fWg

D`YUgY`gYY`A ccX`Y`Zcf`U`fYei ]fYX`fYUX]b[ g`UbX`fYgci fWg"

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

Gh XYbhZYXVUW\_ ]gj U`i YX`]b`h`g`Wci fgY`UbX`Y`dg`i`g`]a`dfcj`Y`mci`f`YUfb]b[ `YI`dYf]YbVW" `b`h`Y`dUghz`  
UbUmg]g`cZA`m9I`dYf]YbW`gi`fj`YmfYgi`hgZ`Ug`k`Y`Ug`X]fYVhZYXVUW\_`Zca`gh`XYbhgZ`Ug`YX`hc`fYXi`WX`  
bi`a`VYfg`cZfYUX]b[`gZ`bYk`Wci`fgY`hcd]Wg`UbX`h`Y`fYZ]bYa`Ybh`cZUggYgga`Ybh]bglfi`W]cbg":`cf`YI`Ua`d`Yz`  
h`Y`YI`dYVW]cbg`Zcf`5ggYgga`Ybh` `bX]j`]Xi`U`F`YgYUfW`Dfc`YVh`Uj`Y`VYYb`a`cf`WYUfmgYhici`hZ`ck`]b[`  
gh`XYbhZYXVUW\_"

Gi Va ]gg]cb`cZ5ggYgga YbhHUg\_g

Gi Va ]gg]cb`cZ5ggYgga YbhHUg\_g

Hi fb]hb`Gi Va ]gg]cb

zmc i`YbWci bhYf`U`dfcV`Ya`k` \Yb`U`H`Ya` dh]b[ `hc`gi Va ]hmc i`f`Ugg][ ba YbhHfci [ \`Hi fb]hbzd`YUgY  
H`Y`d`l`cb`Y`9I`H`f`b`U`Gi` ddcfhcb`-`'` ,` )` " ` ' ` ' ` %cf`Ya` U]`H`Ya` `cb`YI`H`f`b`U`H`f`gi` ddcfh4` i` b`gk` "YXi` "Ui` "Gi` ddcfh  
`l`ci` fg`UfY` ,` .`\$\$Ua` -`-%\$.`\$\$da` `cb`k` YY`\_`XUmg`U`b`X`-` .`\$\$Ua` -`i` )` .`\$\$da` `cb`k` YY`\_`YbXg`f`l` \*)` `XUmg`U`m`Y`U`f`l`" zmc i  
UfY`i` bUV`Y`hc`gi Va ]hmc i`f`Ugg][ ba YbhXi`Y`hc`U`Z`U`i`h`k`]H`Hi`fb]hb`mci`a`UmiUdd`miZc`f`Ub`YI`H`f`b`g]cbz`Vi`hmc i  
a`i`ghf`Y`H]b`mci`f`h]W`Y`h`bi`a`VYf`Z`ca`9I`H`f`b`U`Gi` ddcfhf`U`cb[ `k`]H`U`b`m`c`H`Y`f`f`Y`j`U`b`h`X`c`W`a`Y`b`h`g`l`hc`  
]b`W`i`X`Y`U`g`Y`j`]X`Y`b`W`hc`gi` ddcfhmc i`f`YI`H`f`b`g]cb`Udd`]W`h]cb" zmc i`Ya`U]`9I`H`f`b`U`Gi` ddcfhmc i`k`]`  
Ui`hc`a`U`h]W`U`m`f`Y`W`]j`Y`U`h]W`Y`h`bi`a`VYf`z`Vi`h]Z`mc i`H`Y`d`l`cb`Y`mci`k`]`b`Y`Y`X`hc`gd`Y`W`Z]W`U`m`U`g`\_`Z`c`f`cb`Y`"  
Hi`fb]hb`U`gc`d`fc`j`]X`Y`g`i`d`X`U`H`Y`g`i`cb`H`Y`j`f`g`m`g`h`Ya`i`g`h`U`h`g`i`cb`H`k`]H`Y`f`"

; YbYfU`mz`UggYgga YbhHUg\_g`a`i`ghVY`gi Va ]H`Y`X`Y`Y`W`f`cb]W`U`mj`]U`Y`]H`Y`f`Hi`fb]hb`cf`U`A`cc`X`Y`  
Ugg][ ba Ybh`H`b`]b`g`h`U`b`W`g`k` \Y`f`Y`H`L`g`]g`b`c`h`i`d`c`g`g]V`Y`Z`]h`k`]`V`Y`g`h`U`H`X`i`cb`mci`f`W`ci`fg`Y`g`A`cc`X`Y`g`]H`Y`k`]H`  
U`H`f`b`U`h]j`Y`gi Va ]gg]cb`XY`H]`g`"

: cf`]b`Z`c`fa`U`h]cb`cb`l`ck`hc`gi Va ]h]Ugg][ ba Ybh`g`cb`]b`Y`j`]U`A`cc`X`Y` .` \`h`d`g` .`#`g`h`XY`b`h`i` b`gk` "YXi` "Ui` #`ack`!  
gi Va ]h]Ugg][ 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 gZ`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[ YgZ`UfhUbX`XYg][ b`dfc`YWgZ`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`Z`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[ Y`hYf`ei chYg`UbX`dUfUd`fUgYg`]bhc`U`bYk`k \c`Y`Z`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`XUHY`Zc`f`Zc`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'Y'ghUbxUfXg'cZVY\Uj ]ci f'YI dY'W'X'cZYj Yfmcby']b'h'Y'I BGK 'W'a a i b]m
- 'cW'W'h'gYfj ]W'g'UbX' ]bZ'fa U]cb'UVci hl BGK 'UbX'I BGK '@]VfUfm

Gca Y'cZ'Y'gY'UfY'Ug'k ]''VY'ZJa ]]Uf'hc'mci ž'c'h'Y'fg'k ]''VY'bYk "'; U]b]b[ 'U'gc`]X'i bXYfghUbx]b[ 'cZU''h'Y fY'U'Y'X'UgdY'W'g'cZ9@-G9'k ]''\Y'd'mci 'a U\_Y'h'Y'a cgh'cZ'mci f'gh X]Yg'Uhl BGK ""

[\h'hd.##gi V'Y'W'i \]X'Y'g" \]V'f'U'f'm'i b'gk "Y'X'i "U'i #' \]g'Y'#J'V'c'i h' \]g'Y](#)

5 WUXYa ]WbZcfa Uh]cb`

: cfYggYbh]U`gh XYbh]bZcfa Uh]cb`fY`Uh]b[ `rc.

• fYei Ygh]Zc`YI hYbg]cb/