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ගුවන්සර

G u w a n s a r a

ගුවන් ක්ෂේත්‍රය පිළිබඳ ශ්‍රී ලංකාවේ ප්‍රථම සිංහල අධ්‍යාපනික සඟරාව

සිවිලින කලාපය | 2011

FREE ISSUE

ලොව විශාලතම

■ මගී ගුවන් යානය

ශ්‍රී ලංකා

නිදහස් ගුවනේ

■ අසිරිය විඳගමු

■ Dubai Air Show





Singapore Air Show

The Singapore Air show, among the world's Top 3 aviation events, is the largest aerospace and defense event in Asia.



What's Inside

| Aircrafts

A 380 02 f, dj úYd, ; u u. S. j kahdkh

F 22 02 mi j k mri mrdj g wh; af, dj kùk; u hþ . j kahdkh

| History

rdj K . j ka; dE Kh 02 Y%, dxfl h . j ka. ukab; sydi h

fy, fl dmgrh 02 fy, fl dmgrfhab; sydi h

. j kafi j d b; sydi h 02 m<uqf, dd hpDfhkami q. j kafi j dfõ ohKj

| Feature Articles

E - ticket 02 . j kafE ; fhaKj m% K; d

wj i kacj kd dj 02 l ms dkat, fudachj %Ok uy; df. au; l fhka

COSCAP-SA 02 j i rl g j rl amej e; fj k fl di d emaol Kqwdi hd; j j evi gyk

Y%, xl d kþyi a. j k 02 Y%, xl d kþyi a. j fkawi B h ú | . uq

"l a d . j kaf; dgm< 02 f, dj NhdKI u . j kaf; dgm< w; Bka3 j k ; ek yrñ . j kaf; dgm<

úYj h 02 fkdkej ; K úYj h

| Guwansara

m q a , u" wdKuvj j evi gyk 02 . j kafi j d fE ; h msn| mdi , ai s fkaeokj ; al s fi j evi gykaud, dfõ i õj k wEhr

. j ka r fj í wvúh 02 . j kafi j d fE ; h msn| Y%, xl dfõ m% u fj í wvúh

mdi , a. j kafi j d i udç 02 mdi , a. j kafi j d i udç y=kd. kuq

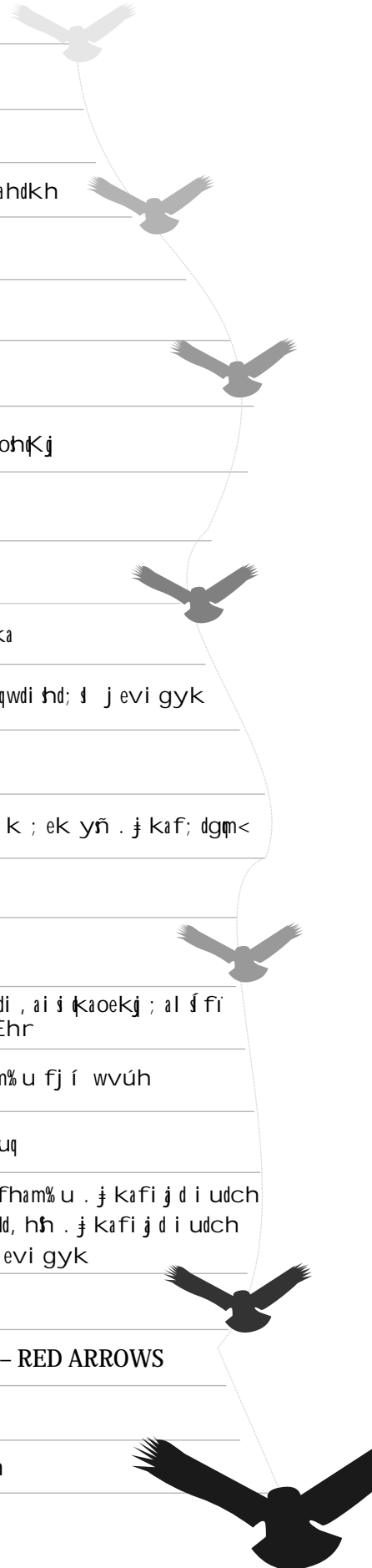
m, a ug; a. j kafi j d j evi gykl a 02 m q a , u wOHdmk l , dmFham% u . j kafi j d i udch j k m, a u kfj dõHd úoHd, hñ . j kafi j d i udch u. kai bdkí l rk , o j evi gyk

| Entertainment

Aerobatic Teams 02 Royal Air Force Aerobatic Team – RED ARROWS

mB. KI úafhdal %vd 02 H.A.W.X mB. KI úafhdal %vdj

Stealth 02 . j kahdkd Ndú; l rñkakmo j k , o Ñ; hgh



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mðdk i xi ð drl
foð l òi , i urÕj
i xi ð drl
pkÈud fl dâ; j l ð =
i xi ð drl uKav, h
. ÿ ydkaonf¾rd
kç ka f; kçfl dka
. hksñ, a ú; dkÈÑ
ÿ, dxc, Sudmáh.f. a
fnodyeíi l <uKdl rkh
fhdydkaf; kçfl dka
úfYl dx.

wl dkafyÜáf. a
rYñ wfi fi ð r
pkçj, ñkj x.
mß. Kl mgqi e, i iq
rx. k m% doa

PðhrEm
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m% dYkh
i ú, a. j Kafi j d wél dßh
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. xf. dvú, " kç. f. dv" 011-2820220"



fuj r l j rfhka
oel fj kçka
l ekvd . j kai y
wNHj l dY
fl !; ð d. drfha
m%ÖY Yd, dfö
PðhrEmhl ð

fuu fl !; ð d. drh f, dj mj ; k
i úfYl ð fl !; ð d. dr j , ka tl l a
j k w; r 1960 j i f¾S új D; fl dg
we; ' fuh 1967 j i f¾S l efkähdkq
úoHd yd ; dÈ K fl !; ð d. drh i u.
tl j we; sw; r bkawk; ãej
l efkähdkqúoHd i y ; dÈ K cd; ð
fl !; ð d. drh f, i m% , s j we; '

fuyswdi kç j YfhkaúúO j 0. j ka
hðkd j . _130 l g wdi kç m%ðKhl a
mj ; ð

Aviation and Space Museum, Canada

In 1967, the Museum joined with the
Canada Science and Technology
Museum, then known as the National
Museum of Science and Technology



. j kafi j d fÈ ; ð mçn |
mdi , al ð (kioekj) ; al ð fí
j evi gyk
mq a , u wOHmk l <dmh"
wiKuvj

Airbus A380

Giant of the Skies

02

The world's largest and most luxurious passenger plane

thd¾ni a380





mi q h od yi nkaf; dg oi a % a
 l ñg/ i ùu mej ; sw; r tyos
 i ú, a. j kafi j d wèl dßfhã
 i ú, a. j kafi j d i xj %OK i y
 wOHdmkã tã l h úi ka
 boßfhaosyi nkaf; dg
 oi a % ð h ; < mej e; ùug
 khñ; . j kafi j d l ñl a ðh
 m&n| j evi gykaud, dj m&n|
 boßm; al ð ul ao i ý l rk , oß

tyos. j kã r i Ördfõ f; j k
 l , dmh md%, ði ka =uka %. re
 kdu, ardcmE ue; s ùd i y
 ol Kqm<d; ai Nd uy weu; s
 . re Ydkaúch, d, aue; s ùd
 fj ; m&s ekúu o i ý fl reKã





. ʃ kã rg j i r l ai mš u kñ; ʃ; ka
 Y%, xl d i ú, a. ʃ kafi ʒ d wêl dβfha
 wOHI d fckrd, ayd mØdk úOdhl kš Odí
 tÉ ti i Sku, á β ue; š €df. am, j φh

i ú, a. ʃ kal fl a h yd i i nkØ
 oekpu i ui a Y%, dxfl h ck; dj
 fj; , nd šfi ux. , mhj r f, i
 wdri N l rk , o . ʃ kã r ff; ŷudi d
 i Ördfö i öj k l , dmh kš ÷ al rk
 wj i a dfö Y%, xl d i ú, a. ʃ kafi ʒ d
 wêl dβfhawOHI d fckrd, ʒ rhd
 j Yfhkam% dYhl akš ÷ al š ug
 yel úu uu b; d w. h fl dg i < l ñ'

rg kj udj ; l al rd fhduj we; s
 fuu wj êh . ʃ kafi ʒ d l fl a h
 Ti fi o bÉBhg hdu i |yd i yi u
 l d, h nj udf. aúYj di hhs r fÜ
 wd%OI h Yl a su; al š u ki . ʃ ka
 fi ʒ dj j eksÉhKql fl a %Y%, xl dj
 ; < o Yš %ÉhKj g , l úh hq h' fi
 j k úg; ai ú, a. ʃ kafi ʒ dj
 f, dā fhawxl tfl am% dyk udOH
 j ʒ o mj ; k hi hi . egz i y
 ýl d r; d fya fj kaY%, xl d ck; dj
 ; < fi mš n| mj ; k oekpu mš dKh
 mj ; k f k ab; d w, m uÜgul h' kuq a
 hi l fl a h l arg ; < Yš %
 i xj %Okhl g , l úug ki kd. Bl
 ck; dj fuku . ŷóh ck; dj o
 tl fi aoeKj ; aúu b; d j eo. ; h'
 túg meK k. k . egz
 fndfyduhl gu úi ÷ i h mš dj
 ; < k u fi dh d . ekš fi yel h dj
 , efnk nj udf. aúYj di hhs

by; mej i Oeekpu i i fm% K fhaýl d r; dj h y=kd. ; a
 i ú, a. ʃ kafi ʒ d wêl dβfhā i ú, a. ʃ kafi ʒ d
 i xj %Ok i y wOHdmkd t d l h fi ol ʒ d i ýl r we; s
 l h dj , h b; d i d%: l tl l š mi q h l d, j l j dk fō š
 b; d fj fyi l r fuku oea wj Odki i y. ;
 l ghq a l aj 0. ʃ kafi ʒ d l fl a h mš n| oekpu . ug
 f. k h d fi l ghq a fi j k úg Tj k ab; d i š efj ka
 l h d; ul l rñ kai á'

; dl d , l oekpu fi dh d . u w; yer mØdk kd. Bl
 mš oáY fj ; ck; dj t d rdYSj k fuj kawj êhl
 . ʃ kã r ; < ka. ʃ kafi ʒ d l fl a h mš n| f; dr; €e
 . ŷóh mš oáY fj ; i i fm% K h l š ug yel úu
 i enúkau wm wd h; kh l af, i , o i úYd,
 ch. ŷ Khl š úfYd fhkai xy, udOH uq š l r
 . kñ kam < l rkq, nk fuu i Ördj mi q h l d, h
 mrdj gu . u yd k. rh hd l rk , o mØdk
 i k kš fook fuj , ul aú we; snj Tn úi k awm fj ;
 ol j k , o m% pdr Ti fi ab; d fyd c kameyeÉ, s fō'

i ú, a. ʃ kafi ʒ dj ki j 0mg, amrdi hl a; < úyýK
 úl h l d, dk r Emh j l ŷ f h ka. ŷóh mš oáY fj ;
 me; š rñ kawe; ' oekai ý l < hq ʃ; aoeá j . l š l ka
 kj erÉ f; dr; €e uyck; dj fuku mdi , ai š k afj ;
 , nd š uhs th fuj r i öj k l , dmh; ai u. kat < ol k
 . ʃ kã r i Ördj u. kaukd i xhuhl k ahq ʒ bgq
 l rñ kai á k w; r . ʃ kafi ʒ d l fl a h yd i i nkØ
 i i uka %K ud, dj ; < kat amš n| j eäyrg; a; yj r e
 l r we; '

wj i kaj Yfhkai ú, a. ʃ kafi ʒ d i xj %Ok i y
 wOHdmkd t d l h úi kai ýl rk kd j 0 fuu cd; d
 fufyjr ; j yrg; ai d%: l f, i bgq š ug i ú, a. ʃ ka
 fi ʒ d wêl dβh fuf; l a, ndýkai yfhda h kn| j
 bÉBhg; a, nd š ug l ghq = l rk w; r fuu l fl a h
 i i nkØ fhka f. ú . h l d, fha, ; aw; del š Ti fi a
 Y%, dxfl h ck; dj g M, odh š fi ʒ dj l abgq l š ug Tn
 i h z fokdgu yel š öj dhs mš %: kd l rñ'

Airbus A380

Giant of the Skies

The world's largest and most luxurious passenger plane



thd³/₄ni a380

The A380's first commercial flight departs from Singapore's Changi Airport to Sydney on 25th October 2007

. ජ කා ර මි ඉ න් I , dmfhkawm
Tng f, dj úYd, ; u NdKav
m%dyk . ජ kahdkh j k AN 225
hdkh y=kj d ýkaw; r fuj r
f, dj m%q; u . ජ kahdkd
k d mdok i ud. ul aj k thd³/₄ ni a
(Airbus) i ud. u úi kakmo j l
oej eka hd" f, dj úYd, ; u u. S
m%dyk . ජ kahdkh j k thd³/₄
ni a380 (Airbus 380) . ජ kahdkh
m%n| f; dr; #e bÈBm; al f ug
woyi al f<uq

thd³/₄ ni a380 (Airbus 380) . ජ ka
hdkh u. kg . ukal < yel s
; Úgqfol l kai uká; " úYd,

m%Yh" c³/₄ukh" i md[q h
yd tx. , ka h hk rg j , §
A 380 hdkfhafi dgi akmoj l
w; r
Rolls – Royce, Safran,
United Technologies,
General Electric yd
Goodrich tu fi dgi akmo
j k , o m%dk i ud. 'i 5 fõ'
m%dk k d mdokd. drh
m%YfhaToulouse ysm%ygd
; n%w; r hdkfhai úi , anj
k d by; k d mdokd. drh
mj d w; ; kakmoúug
thd³/₄ni ai ud. ug i syú
; i Ks

m<, an| ayd tkõka04 l ka
kuj lhifrdmsh thd³/₄ni ai ud. u
úi kakmoj k , ool s f, dj
úYd, ; u u. S. ජ kahdkh j k
A 380 . ජ kahdkh -i m%ci fndã
(Superjumbo) hk i r; , a
kdufhkay=kj h s fuysux. ,
. ජ kambri eBh 2005 wfm% a27
j k Èk m%YfhaToulouse yS i ý
l < w; r 2007 TI f; dn³/₄ ui 25
j k Èk m% u j HdmdBl . ජ ka
. uk i x. m%refõ i g
'i fU% hdfõ i ãksol j d A 380
. ජ kahdk fham% u . eki l rej d
j li x. m%re . ජ kai ud. u úi ka
i ýl rk , È' oekg fuu hdkd

Singapore Airlines, Emirates, Qantas yd Air France hk . ĵ ka i ud. ĩ j , . ĵ ka. ukai |yd fhdod . kkd w; r 2011 ckj dĒ ui ol ĵ d . ĵ kahdkd 59 l a kmojd ; ū uo úFYd h'

j %l 1994 § thd% ni ai ud. u A 3XX kñkaúYd, u. S. ĵ ka hdkhl akmoüfi j HdmD; hl a wdri N l <y' úúO wdl D; § ka thd% ni a340 hdkh wdYfhka kmojk , È' tu j l j dkfō fndhx . ĵ ka hdkd i ud. u i ; ĵ úYd, ; u u. S . ĵ kahdkh j k fndhx 747 mej ; s w; r hĭ hĭ fya kau; Tj ħf. a . ĵ kahdkd kmoüfi j HdmD; § ka l ymhl a w; yġj k , È' thd%ni a . ĵ ka hdkd i ud. ug th uy; a wi ĵ ei s a , l aj 0 w; r Tj ħafmrg; aj vd oea Wkkġj l ka; u j HdmD; § ka mj ; ĵ d f. k hk , È'

2002 j i r thd%ni ai ud. ug i úFYd S j 0 j i r l § A 380 hdk fha fl dgi akmoüu wdri N l rk , o'foa tu j i f'h' m%Yh" c%ukh" i md[ħ h yd tx. , ka h hk rg j , § A 380 hdk fha fl dgi akmoj 0w; r Rolls – Royce, Safran, United Technologies, General Electric yd Goodrich tu fl dgi akmo j k , o mDdk i ud. ĩ 5 fō' mDdk kġ mdokd. drh m%YfhaToulouse ysmgyd ; n0w; r hdk fhai ūi , a nj kġ d by; kġ mdokd. drh mj d wġ; § ka kmoüug thd%ni a

i ud. ug i ūü ; ĩ Kš wfkl arg j , kmojk , o , o ; gġ n| fl dgi " bĒBmi fl dgi j eks hdkfhawfkl ġ amDdk fl dgi a wj i dk fham%YfhaToulouse fj ; m%dykh l ū u i ū fl reKš m<uj r fuu fl dgi am%dykh l ū fi § úúO . egġ dġ ; ; ĵ hkg mj d uyħ §ug thd%ni ai ud. ug i ūúh' úFYd fhka thd%ni a i ud. u i h . ĵ kahdkd fl dgi a m%dykhg fhdod . kkd -fĭ ' . d' (A300-600ST, Beluga) kñka yeĸkfj k úYd, m%dyk . ĵ ka hdkh A 380 hdk fhamDdk fl dgi am%dykhg bvl v rys ūu bkamDdkh' tu kġ d úYd, fk!! d u. kD f. dv ĩ ñkaúYd,

wfkl arg j , kmojk , o , o ; gġ n| fl dgi " bĒBmi fl dgi j eks hdkfhawfkl ġ a mDdk fl dgi awj i dk fha m%YfhaToulouse fj ; m%dykh l ū u i ū fl reKš m<uj r fuu fl dgi a m%dykh l ū fi § úúO . egġ dġ ; ; ĵ hkg mj d uyħ §ug thd%ni a i ud. ug i ūúh' úFYd fhka thd%ni a i ud. u i h . ĵ kahdkd fl dgi am%dykhg fhdod . kkd -fĭ ' . d' (A300-600ST, Beluga) kñkayeĸkfj k úYd, m%dyk . ĵ kahdk fha A 380 hdk fhamDdk fl dgi am%dykhg bvl v rys ūu bkamDdkh'



għar: u. k. A 380 hdk fha
 fl dgi awdr Ē s j m%Yh fj ;
 f. k taug i yj k s hdk fhai h'
 tl , i al s fi l ghq =ku j l mi q
 ; ka wdf, m l s u i |yd hdkh
 Hamburg Finkewerder . j ka
 f; dgm< fj ; f. k hk , Ē'
 A 380 hdk fhaj % . ógr 3100 l
 m%oá fhawdf, m l s u i |yd j eh
 ù we; s; ka m%údkh , ógr 3600
 l s

i h' l ghq =kuj d wj i kaj l
 hdk fhaw; ayod ne, s' yd m l Ē K
 l ghq =i y l s fi wNsfhda h
 thd%ni ai ud. ug ndrúK' fi
 i |yd Tj ka úi ka A 380 hdk d 5l a
 kmoj k , Ē' 2005 wfm% a27 j k
 Ēk A 380 hdkh i h m% u i d%: l
 mhi eBh i y l rk , Ē' hdkh meoj l
 Jacques Rosay, . j ka khuj d meh

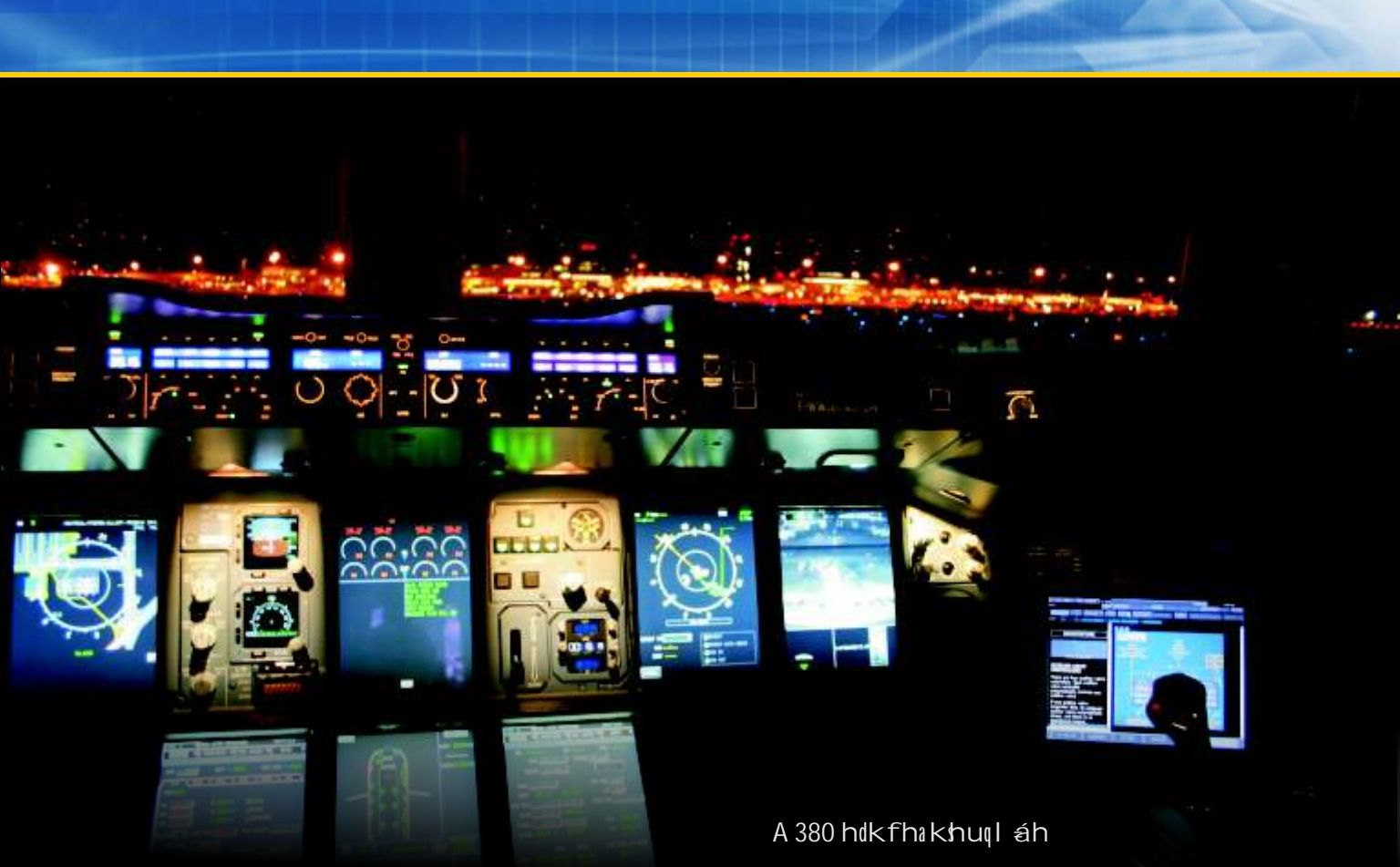
03 l ai y nks a =54 l . j ka
 . ukal d, hl s kawk; fej
 ; ukayg fuu A 380 hdkh -l v d
 nhí s , hl ā fukaj l nj mj i d
 ; nqk s 2005 foi eí n% ui 01 j k
 Ēk hdk fha WmBu fō. h (Mach
 0.96) j d%: d l rk , o w; r 2006
 ckj dB ui 10 j k Ēk hdk fha
 tkó kaj , m l Ē K l ghq =
 i d%: l f, i i y l rk , o kuq a
 hdk fha; gqj , oeänj yd ord
 . ekfi yel hdj m s n | i y l <
 m l Ē K h wi d%: l úh'

mi j tu ; gqkj er Ē wh s kai l i a
 l s u i |yd ; j ; al s f, da a?i 30
 muK nr m%údkh l atl al rk , Ē'
 bkami q 2006 ud%: =ui 26 j k
 Ēk hf rdmh . j kawdr Ē K
 tóká h (European Aviation

Z 2005 wfm% a27 j k Ēk
 A 380 hdkh i h m% u
 i d%: l mhi eBh
 i y l rk , Ē' hdkh
 meoj l Jacques Rosay,
 . j ka khuj d meh 03
 l ai y nks a =54 l
 . j ka. ukal d, hl s ka
 wk; fej ; ukayg fuu
 A 380 hdkh
 -l v d nhí s , hl ā fuka
 j l nj mj i d ; nqk s
 2005 foi eí n% ui 01
 j k Ēk hdk fha WmBu
 fō. h (Mach 0.96)
 j d%: d l rk , o s

Z





A 380 hdkfha khuql áh

Z A 380 hdkh by< uyf, au. ka315 l o my< uyf, a u. ka538 l ao /f. k hd yel s whßka kuj d we; ' fuu hdkfha uq au . ekij l rej d j l i x. mmte . ð kai ud. u mji k wkoug Tj kafí ol j d u. ka ñ, hkh l amuk mdykh l r we; '

Safety Agency - EASA) yd weuBl d t l í ; ackmo Federal Aviation Administration (FAA) i ud. í úi kaA 380 hdkh ; < u. ka853 l amuk i rÉ s j /f. k hd yel s nj ; yj re l rk , È'

i h' mÍ È K l ghq =i |yd i d%: l j uyqÿkaA 380 hdkh i |yd f, dj m%l rgj , kawekj ij , efnkkq úh' kuq awod< Èkfha s wj YH j lA 380 hdkd m%dk h ku l r şug thd%ni ai ud. u wfmdfydi ; aj l w; r ; j ; audi 6 l muK l d, hl a tai |yd j eh j k nj Tj kam% dY l r i áhy' thd%ni amDdk kafuhg fya = f, i m% dY l f<ahdkfha wNHka r l ghq =i |yd j eä l d, hl aj eh j k nj hş WodyrKhl af, i hdkfhaj hßka l ghq =i |yd j h% j . _ógr 100*000 muK i a dk 40*300 l g

muK i úl şug wj YH nj i ud. u úi kafmkj d ýkaw; r fuj eks m%dohkaj ; dj kafol l ş muK i ýúK'

fuysm% u . ekij l rej d j l i x. mmte . ð kai ud. u mej i fõ fndhx 747 - 400 hdkhg j vd fuu hdkh w%ó l uh j Yfhka j di odhl nj h' fi i q . ekij l rej kaj l Emirates, Qantas yd Air France hk i ud. í o tu u; fhu i áu úfYd h'

A 380 hdkh by< uyf, au. ka 315 l o my< uyf, au. ka538 l ao /f. k hd yel s whßka kuj d we; ' fuu hdkfha uq au . ekij l rej d j l i x. mmte . ð kai ud. u mji k wkoug Tj kafí ol j d u. ka ñ, hkh l amuk mdykh l r we; ' A 380 hdkfha khuql áh . ; al < fuh thd%ni ai ud. ugu wdfõKl k huql áhl aj k w; r



A 380 . j kahdkfhawe; <; o¼Ykhl a

wê; dË K l wãföohkg wkj ukdj i l i al rk , ool s khuq md, l (Side - Sticks) Fly – by – wire uðyl dx. h i u. i u. l ðd l rk w; r th hdk fhawdrË dj i |yd úYd, odhl ; j hl ai mhhš 15cm x 20cm úYd, e; sLCD (Liquid Crystal Display) j ¼. fha; r 8 l ka i ukú; j k fuu khuql áh khuq dg b; d myi qj k whþka kuj d we; '

Rolls – Royce Trent 900 yd Engine Alliance GP 700 j . fha tkðka y; rl a fi i |yd Ndú; l rhš A 380 hdk fha tkðka u. ka kð ÷ a j k Yí oho mBi rhg ys l r j k whþkai l i al r we; snj , ka ka ys yf; ð. j kaf; dgq < mí È l j reka; yj re l r we; ' hdkh f. dvnei á j lú. i fð. h wvq r . ekšug yel swkøfi m% frdðl moð; s fuys tkðka fol l muKl awvx. =üu fuys we; s; j ; a úfYd ; j hl š

A 380 hdk fhaË. ógr 72'73 j k

w; r Wi ógr 24'45 l š ; gq w; r mr; rh ógr 79'75 l ð ; gq m%oðrfhaj . M, h j . _ógr 845 l š hdkh wNHka rfhab y < uyf < a È. ógr 44'93 l ð my < uyf < AÈ. ógr 49'9 l ð fð' > k ógr 176 l NdKaw mBudj l a. nvd l < yel s w; r fuys WmBu fð. h meh g l f, dðgr 900 (900 km/h) l š

A 380 hdkd wNHka rh úúO . j kahdkd i ud. i úi ka i fLdmfnda Swhþkai l i al rk w; r mykij ; gdl " wdmk Yd, d' l ðd. dr" kòk l dur fuka rEm, dj kHd. dro we; <; al f ug tu i ud. i i e < i q' i l i al r ; fí ' WodyrKhl af, i m%Y . j kahdkd i ud. u úi ka A 380 hdk fham < uqmx; hg i y j HdmdBl mx; fha u. kg Ñ; ð. drhl abÈl r we; sw; r w; s i fLdmfnda Sfi dð' d j . o we; <; a l r we; '

A 380 hdk fhawkd. ; h m<n | j o thð%ni ai ud. u oekgu; ai e < i q'

i l i al r we; sw; r j eä ÈhðKq l rk , o A 380 - 800 hdkho" A 380 - 900 yd A 380 – 800 freighter kñka; j ; ahdkdo bÈB l d, fhš u. ka 900 l g . ukal < yel sj k mBÈ yd myi q' i j , ka mBmka hdkdo t < soel ùug thð%ni ai ud. u i e < i q' l r we; '

fuu A 380 hdkhl i j j 0m% u wk; f, i i |ykaj k fka 2010 fkdj ei n% ui 04 j k ÈK Qantas . j kai ud. ug wh; ahdkhl tkðul i j j 0foddl hl afya fj ka we; sj 0mns uhš tafya fj ka hdkh kej ; . j kaf; dgq < fj ; /f. k wd w; r mns fuka hdk fha . ukal < u. kg l š y ydkhl a i y fkdúKš bkami j Qantas . j kai ud. u ; u i th' hdkd kej ; mí È l rk , o w; r Rolls – Royce i ud. uo fi m<n | j eäyr mí È K mj ; j k , È'

wYðkafyÜaf. ●

- . ජ කාචි ජි ධ ෆිඒ ; ෂ්කාචි | | a Y%, දැච්චි හි ච් ච් ච් ච්

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j evi gykaud, d f o f; j k
wĒhr 2011 ud%; =14 j k o k
i ú, a. ජ කාචි ජි ධ wud; H . r e
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m d d k; j f h k a w d K u v j
l k k x. r c d; d m d i f, A S
W; ā j d l d r f h k a m j ; j k , Ē
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. ජ කාචි ජි ධ wud; H x Y f, d i
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fi j d wud; H x Y f h a w; s f % l
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m d d K h l d i y N d. S ú h'

t l a w; l k a. ; a l < . ජ කාචි ජි ධ
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u; l h g k x j k l flā ෂ්කාචි s u k d
y r d; s f h s r c l i l < r d j K
k i r c f. a o ~ f u d k r h m s n | j
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1903 s i y l < m % u . ජ කා
. u k; a i u. . ජ ක ච්. e k f i
i y k h k u j o w; r m i j t h
m y i d i i m h k f Ē ; h l a o l j d

Ē h k j g m; a ú h' k u q a w m r g
t j l s t; r i o h k q; ; j h l
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, e n f o r g j , a w; r . ජ කා. u k a
i y l s u i | y d m u k s t j l s
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. u k a m y i d i w d r i N f k d u u
f y a f j k a c k ; d j i y . ජ කා
f i j d f Ē ; h w; r y r i a n j l a
w e; s j f h a w m i e u f. a
w j d i k d j g h' t n e ú k a f i m s n |
o e k j ; a n j o b; d Y s ෂ්කා
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; j ; a u; h l a o e k j m j ; k w; r
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f y a f j k a t u u; h o k j e r Ē
t l l a n j g y e Ō s h k k g ú h'







fuy\$. j kahdkhl aby<
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. kñkai ú, a. j kafi j d
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ud, dfö f; j k wÈhr i ú, a
. j kafi j d wud; H . re mthxl r
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Èi a % d fhamq a , u wOHdmk
l , dmfhã l kãx. r úoHd, fhg
mj ; j k , È' fi i |yd mq a , u
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i udcfhawe; swdl %Ykh i y
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úi kãbÈBm; al rk , o wdo%Y
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i yNd. Sùu úFYd h'

fuy\$ i yNd. Sj Qi h' u mdi , a
i |yd i ú, a. j kafi j d
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i yNd. Sùug , eí u Nd. Hl a
fl dg i <l k nj ; ameji h' Y%
, xl d i ú, a. j kafi j d
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mBdk úOdhl k s Odí té tí i s
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ol j ñkamj i d i áfhaw; s re
ckdêm; s euf. auykã

Ñka k fha-k s a. j k ch
. kuq hkãfj kai |ykal r we; s
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, xl dj . j kafi kã i a dkhl a
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. j kafi j d fÈ ; % j eks ÈhãKq
fÈ ; % l ak. rfhai g . % óh
mfo& ol j d f. k hdu wmyi q
l ghq a l aj j o th bÈBhg
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j k rgl af, i wm i s j l <
hq f; awm i ; =oekq rg m r d
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. i d ; sñk Y%, xl d i ú, a. j ka
fi j d wél dBFhal d % hh myi q
úug kí fi m&n| reÑhl a
we; smBi au 0 d ; j h . kñka
oekq fi dh d hk ud. _ i l i al r
. ; hq h' t; <kãj %; udkfha
we; sù ; sñk . egã rdYhl a
úi |d . ekúg ud. h i l i aj kq
we; '

foD i ur0j ●





rdj K

. j ka; dĕ Kh



mej ; si i nkæl rK cd, h w; sYh l d%hÈ u tl l aúh' w; \$ fha fy<Èj mej ; s i i nkæl rK cd, h fl dgi a03 l g fnod oel úh yel '

- 1' i i ud. _
- 2' kdúl ud. _
- 3' . j kaud. _

fuu mØdk l % 03 hgf; a fy<Èj l d%hÈ u md, kh l a mj ; j d f. k hdug rdj K wêrdcHhg yel súh' i i ud. _ ; ek\$fi \$ rdj K rcqj %; udk fha Ndú; l rk l % j , g yd; mi \$au fj ki al % Ndú; l rk , È' t; ud i j dNdúl i i m; auekúkaw. h l <" f, dj m<uqj k rÈ \$ h mj d i ysl < Wodr kdhl fhl \$ tki d ud. _ i |yd l e, E t<s fmfy<sl d ug mj d t; ud l eue; a l a fkdoel úh' kuq aud. _ moD; hl wj YH; dj h ; Èkau oek\$ qfyhkaWux ud. _ moD; hl al rùh' fuu Wux ud. _ moD; h j %; udk fhai S Bh" , l a , " ud; f, aÈi a % d yryd l ; r. u f; l aúy\$; nØw; r tu. \$ardj K rcq i h yuødj rg mrd /f. k hdfi yel h dj mej ; \$s oekg i s l rkq, nk mrdúoHd l eK\$ u. \$afuu Wux ud. _u; =l r f. k we; sw; r tys tl a fodrgj l aud; f, ayq x. uj j ; f; kayuø we; '

rdj K rcqNdú; l rk , o kdúl ud. _moD; h b; d j eo. ; a tl l a j fhatu. \$anr m% dykhg we; j Øj di si y. ; ; j h fya fj k\$ WodyrK f, i l ; r. u" fj , a i á j eks m% oar j , \$aká mdokh l rkq, nk ú j . _ OdkH j . _yd w, swe; \$a

rdj K wêrdcHhdf. a f; j eksyd úfYá \$ i i nkæl rK cd, h . j ka moD; h fò' fuh j Øl , S fy<Èj mej ; si úfYá Sj Ø i i nkæl rK cd, hl \$ fuu . j kacd, h yryd rdj K rcq; u i h' mBmd, k uOHi a dk i i nkØ l r ; nØw; r tu. \$ai h cd; Hka r i n|; do j %Økh l r . kkd , È' tj l \$ fy<Èj mej ; srdj K rcqf. a ud, s d 25 l i n|; d fuu . j kaud. _Ti fi am; j d f. k f. di awe; sw; r tu. \$ardcl h i dudØl hka rdch yd mBmd, k k\$ Odí ká mj q a j , i dudØl hka hØ k\$ Odí kayd Tj \$f. a mj q ai udØl hkam% dykh l r we; '

j eks nBkaj eá oE m% dykh l r we; f; afuu kdúl ud. _ yrydh' tj l g fy<Èj mej ; s kdúl cd, h i ; j úYd, f; dgm< m% dKhl amej ; sw; r rdj K rcq fuu f; dgm< Ndú; l rñkacd; Hka r fj <| cd, hl Ø mj ; j d f. k f. di a we; ' rdu - rdj Kd hØ i ufhs rdj K rcqf. a kdúl yuødj i u. oyi l ahØ keø f. dØ Kk kdúl i gkkardu yuødj mrdch l < nj mrdK . \$a j , i |yka fò' rdj K wêrdcHhdf. a f; j eksyd

rdj K wêrdcH hkqf, dj mej ; s úYd, u wêrdcH j Øw; r tj eks úYd, j ØwêrdcHl amd, khg ki úYd, mBmd, k cd, hl Ø mej ; h hq h' fuj kamBmd, k cd, hl ai d%: l f, i l %d; al úug ki b; d l d%hÈ u i i nkæl rKhl amej ; \$u w; Hdj YHh' tu i i nkæl rKh , nd . ; hq f; auyd ud. _ yrydh (Lines of communication). rdj K wêrdcHfha uØ i a dk h j fha fy<Èj j Øw; r tj l g fy<Èj

History

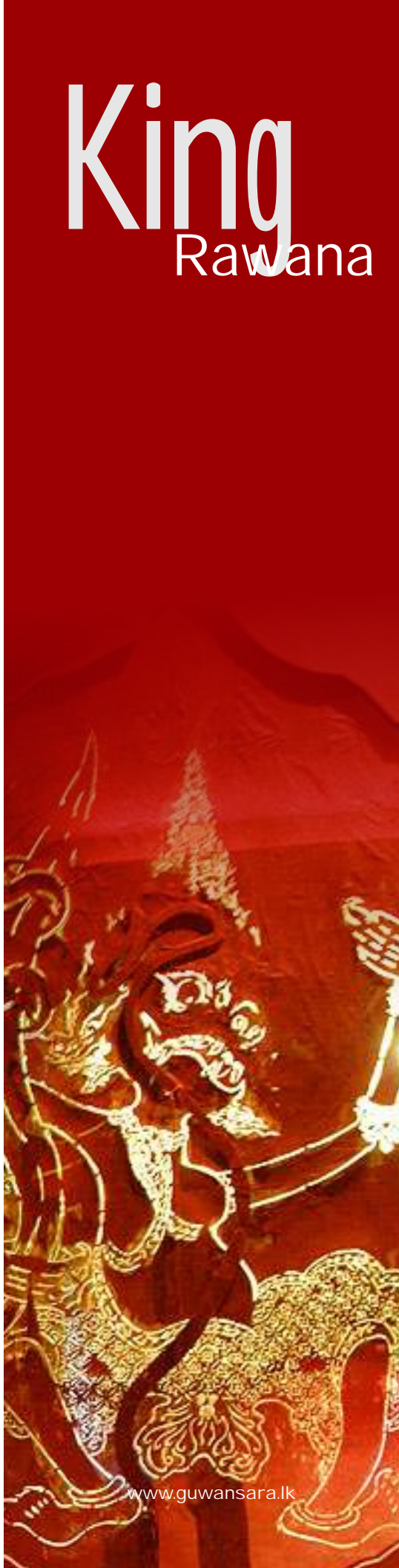
úfYá s i i'nkæ l rK cd, h
 . j kamoD; h fõ' fuh j Ql , s
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tj l g mej ; s. j ka; dÈ Kh
 . ; al < j eo. ; au l reK j k fka
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 . j kafi j h wdri N l s uhs tu
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 md, k l ghq =mj ; j df. k
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uydp%h mof i kØ ú l %; x. ●



King Rawana



Learning to fly

By Capt. Menaka Fernando

If becoming a pilot has crossed your mind, has become your dream, or is in your blood, it could be a good career to choose, as opportunities for airline pilots worldwide are on the rise. Flying can be a very rewarding profession, both in terms of self satisfaction and financially. Many consider it to be a dream job, but perhaps have an unrealistic perception about what it is really like. In reality, the job commands a great deal of personal commitment, self-sacrifice and most importantly EDUCATION!

A career in aviation is fundamentally about aircraft, aircraft operations, flight operations, and the environment, especially weather conditions. However, aviation is also about people and how they function especially in the aircraft. Pilots are employed in one of four areas: passenger scheduled services, passenger charter services, freight services and general aviation. The latter

is the biggest sector worldwide and includes, private aircraft, flying schools and transport companies.

A generation or two ago, flying an aircraft was considered a man's job as most aircraft up to the end of the 1950's required considerable muscle power to manoeuvre and operate. The aircraft were unsophisticated and required greater physical rather than mental skills. However, with the advent of modern automation and 'fly-by-wire' type aircraft, the control

Fly an Instructor to YOU..



inputs of the pilot simply command the computers which in turn move the aircraft controls. Muscular power is not required in the manipulation of aircraft. The understanding and management of the automation takes importance over brute force.

Today, advanced planes, like the Airbus A 340 and A 380 and Boeing's 777 and 787 models, require little of the hands-on flying skill that older models needed. Although aircraft have had autopilots to keep level and make simple turns; with the newest equipment pilots can programme the flight management computers, by pushing a few buttons and monitoring the systems, to enable the plane to fly to its destination and land on a predetermined runway.

Today modern technology is advancing at a great pace and electronic, information and aviation technology keeps developing with added momentum. Today, advanced planes, like the Airbus A340 and A 380 and Boeing's 777 and 787 models, require little of the hands-on flying skill that older models needed. Although aircraft have had autopilots to keep level and make simple turns; with the newest equipment pilots can programme the flight management computers, by pushing a few buttons and monitoring the systems, to enable the plane to fly to its destination and land on a predetermined runway.

Virtually every calculation is made by computer. Complex navigation systems and reduction of crew members to merely two from the earlier three or four mean that the pilots are required to “manage” rather than “manipulate” the aircraft systems which are automated. The technical background required from the pilots is more to do with understanding systems and

trouble shoot whenever required, using electronic means rather than to memorize procedures and to use physical skills.

So, if everything is made this easy, why should a pilot be academically educated? There is more than one answer to this question. The environment in which aircraft operate has become crowded. As a result more aircraft are placed in smaller airspaces than ever before using satellite navigation and other sophisticated electronic measures to “see” other aircraft – such as TCAS (Traffic Collision Avoidance Systems). Communications between ground and aircraft are increasingly via data-communication links rather than traditional voice communications, making the understanding of computer technology more important in operation of aircraft.

Thus the operation of aircraft via management using one's brain rather than brawn requires a better educated person in the flight deck. Crew Resource Management (CRM) has become



the catch-phrase of the aviation industry and Threat and Error Management (TEM) is the way to fly an aircraft from A to B. Today the basic level of education for a pilot must advance at least to a Bachelor's degree, if they are to keep pace with such changes and developments. This is especially important, keeping in view that the education system in Sri Lanka is not all that realistic and not in keeping with world developments and trends.

Reputable airlines the world over induct graduate pilots into their staff. In the US and Singapore for instance, if you want to be a pilot for a major airline, you should also get your Bachelor's Degree. The mental capacity demonstrated by obtaining a Degree is an

indication to the airline of the pilot's mental capabilities. However, this is not always the case for regional carriers. To be a pilot in an airline in Sri Lanka all one needs is O/L- A/L and approximately 250 flight hours plus a type rating in the aircraft that the airline flies. (Pilot requirements differ with airlines and can change over time).

Today's Airline pilots are responsible not only for the safe and economic operation of the aircraft, but also a number of other tasks which include, acquiring information on route weather, working out a flight plan, supervising the loading and fuelling of the aircraft, pre-flight checks on the navigation and operating systems, communicating with air traffic, interpreting complex data,

reacting promptly and appropriately to environmental changes and emergencies and coping with incidents or problems with the aircraft.

Please bear in mind, that a pilot's flying licence is literally a licence, and does not carry any academic educational weight. This licence has a validity period of 6 months/one year and may be reinstated or revoked based entirely on his/her medical status. Thus a pilot's career realistically exists only for this duration - until his/her next medical examination. In the event of a pilot losing his/her licence, they may or may not find alternate employment in the organization. This is where an academic qualification would be useful. He/she could as a graduate get into management and administration in aviation operations at a higher level. There are Bachelor of Science (aviation) courses designed for those seeking a graduate career in the Aviation industry.







ì ì , wOHdmk I <dmfhamej ; s- . ð kafi j d fÉ ; ðhka
ì | I aY%, dxfl ð orej kg J evi gyk wj i dkfha I \$d
máfhamej ; swdo%Y . ð kahdkd i xo%Ykh keröu
i | yd oeä Wkkýj I kameñfKk mdi , ai í ða

Y%, xl d koyi a. j fka wi sh ú | . uq



mi q. න් l d, j l j dkj ; <
mej ; shp j d; dj rKh
kí dfj ka wyfi afndfyda
l kndl dri 'i i | yd i lnd mekú
; nqKo oekatai lnd bj ; al r
úúO l kndl dri 'i i | yd , xl d
wyi új D; j we; '

Y%, xl d koyi a. j fka wi sh
ú | ng oekatng; awj i a dj t < U
we; ' mi q. න් l d, j l j dkj ; <
mej ; shp j d; dj rKh kí dfj ka
wyfi afndfyda l kndl dri 'i
i | yd i lnd mekú ; nqKo oekata
i lnd bj ; al r úúO l kndl dri 'i
i | yd , xl d wyi új D; fl dg
we; ' Y%, xl dfō Nñh taj gd
myá i d. rh fuka thg wh; a
. . k ; , ho wd%Ōl yd i udc
m%OK l ghq =i | yd úYd,
Yl H; dj hl awe; si a dkhl s tu
. . k ; , h m%hdckhg f. k
i y l < yel sl kndl dri 'i
fndfyduhl s

2

i rex. , aheúu (Kites)
wdo%Y . j kahdkd
(Model Aircraft)

2

i eye, á' i y w; s
i eye, á' . j kahdkd
(Micro Light and Ultra
Light Aircraft)

2

. q hv% fufyhiq
(Glider Operations)

2

WKq' q' j dhqneEK
fufyhiq (Hot Air
Ballon Operations)

2

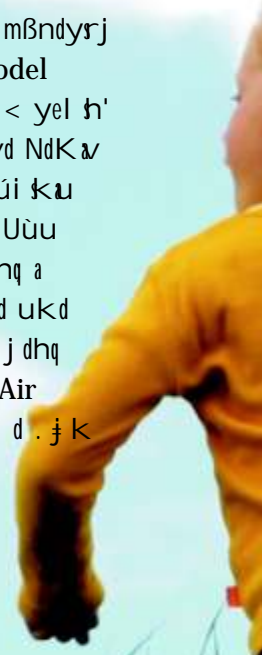
c, pr . j kahdkd
(Float Plane
Operations)

2

mñdi r myqK qmdi , a
mj ; j df. k hdu
(Flying Schools)

i rex. , al v d < uka f. al %d
NdKvhl af, i i e < l j o
i rex. , aheúu jeäyáhk f. o
ckmñ l %dj l s fuu
úfkdoek l l %dj rfú fndfyda
m%oá j , l knd; ul l < yel s
w; r cd; Hka r i rex. , a
W; á j o i xúOdkh l < yel h'

. j kafi j d fE ; %g Wkkáj l a
ol j kkkai | yd . j ka
fufyhiq m%oá j , kamBndyrj
wdo%Y . j kahdkd (Model
Aircraft) mñi eB i y l < yel h'
l v d < uka fuj eks l %d NdKv
j , g yre l sñ ; ukaú i kau
tj d i dod . ekug fm < Uúu
k%udKYs suki l kahq a
orefj l =i yd s u i | yd ukd
máj y, l afō' WKq' q' j dhq
neEK fufyhiq (Hot Air
Balloons) i | yd Y%, xl d . j k
fhda H i a dkhl af, i



y=kdf. k we; sw; r oekgu; a
j dKcuh j YfhkaneÆK
fufyhij' l ghq =wrUd we; '

hdka % . a hsv% (Powered
Glider)" w; kayi qej k . a hsv%
(Hand Gliding)" uyyj merl g
Ndú; h (Para Sailing)" merd
. a häka (Para Gliding) fuka
cd; Hka r keõ ud%. i |yd
fi j d i emhú i |yd
fy, sfl dmog% fufyhij' wdri N
l r ÈB . ekúuo i sj l < yel h'
Y%, xl dj f. dvi ul a; < mj; k
jeâu c, uq dY%mdKhl g
yñl i l hk w; r, c, pr . j ka
hdkd fufyhij' fi j k úg; a
wrUd we; ' fuyosfl d. a , j ej"

l e<Ks. Õ" fnkf; dg . Õ"
fmd, f. d, a c, dYh" udje, a
l <mj" f. %B j ej we; z c, dY
12 l ac, pr . j kahdkd
fufyhij' i |yd hd; %x. k f, i
Ndú; l fúg wkqe; h , ndS
we; '

mñdi r myqKqmdie, a oekgu; a
Y%, xl dj ; < l %nd; ul j k
w; r; j ýrg; aj Hdma l fú
; < kacd; Hka r mñ; %g
wkq + j by< uÜgfñ mñi r
myqKqñi , nd . ; yel h'
by; l %ndl dri i i sj l fú
i |yd Y%, xl d i ú, a. j ka fi j d
wél dßfhayd Y%, xl d . j ka
yuðdfõ wkqe; h , nd . ; hq =

w; r i rex. , ai y wdo%Y . j ka
hdkd heúu i |yd lKgg j vd
jeâu nrl kahq =ki' muKl a
wj i r , nd . ; hq h'

úfkðockl l %dj kaj Yfhka
Khe, ú muKl afkdj fuj eks
wj i a dj kai |yd ÈB . ekúu
; < karg ; < ; dÈ Kd
m%OKhl awe; sùu" ck; dj f. a
Ój k ; ; j h Wi i aúu" Wi i a
; ; j fha / l %nd wj i a d we; úu"
rfU i Dcqi y j l %wd%Ól
j %Okh we; úu fuka i xpdr l
fÈ ; %ham%OKho i sj fõ'

pkÈud fl dâ; j l a = ●





COSCAP – SA, 20th Steering Committee Meeting 2011

fl di d emaj evi gyfkys 20 j k khndul l ñgq / i ùu

fl di d emaj evi gyfkys (COSCAP – SA, Corporate Development of Operational Safety & Continuing Airworthiness Programme) 20 j k khndul l ñgq / i ùu mi q h wfm% a05 - 08 j kod ol j d fl d < T . d' u j fodr fydg, fhg mej e; ùK' tysi udri NI W; ã j h i s, a. j ka fi j d wud; H . re mhxl r chr; k ue; s eudf. a mdk; j fhka mej e; j Qw; r ol Kqwdi hnd l < dmfhysi s, a. j ka fi j d wOHÉ fckrd, j rekawe; z ¥; mBi d, cd; Hkã r i s, a. j ka fi j d wd; kfhaks OdÍ k, cd; Hkã r . j ka fi j d i xúOdk l symhl ksfhd; j rekao we; z 50 fofkl =muK mBi l afuu f; Èk khndul l ñgq / i ùug i yNd. sj ß'

j %l 1998 §, ol Kqwdi hnd; d l < dmfhargj , ysi s, a. j ka fi j d khnduk wd; khkays (Regulatory Organizations)

mDkKaj k i s, a. j ka fi j d wOHÉ fckrd, j rekaf. a uQ d ; j fhka mej ; s i dl Écdj kaysm% M, hl af, i fl di d emaj evi gyfkys hnd j evi gyk i yuh' tysi uQ d mruD%: h j kfkai s, a. j ka fi j d fÉ ; %hyskremos dj Wfoi d wj YH ; dÉ Kd oekpu w' ; ka, nd su fyda j eãÉhKq l s' u" wod < ks OdÍ kaf. amgyKq l ghq = i s' l s' u, kj l wföohka , A; uops udOHfhkai s, a . j ka fi j d fÉ ; %hakhe' Kq . j ka fi j d i ud. i' . j ka f; dgm< fufyhj kkkã i s, a . j ka fi j d mydKqwd; j , g i y i s, a. j ka fi j d khnduk wd; khg , nd su; a mlfhda d wNHdi hkamj ; j ñka. j ka fi j d fÉ ; %hakhef, kkkgy m<mpreod , nd su hk l drKd fõ' fl di d emaj evi gyk fufyhüu j evi gyka l < uKdl refj l f. a uQ d ; j fhkai s' j k w; r . j ka fi j d fÉ ; %ha; dÉ Kd wxY l symhl ai |yd ol Kqwdi hnd

l , dmfhkam%K hkai uQhl a n |j df. k we; ' j evi gyfkys khndul l ñgq / i ùu i Eu j i rl u mej e; fj k w; r ty§, mi q h j i f% l ghq = i y m% ; h i udf, dpkh l s' u o bÉB j i r i |yd i l i d we; s j evi gyk wOHkh l r wkpu; l s' uo, j evi gyfkys uQ H ; ; j h úu i ug , l al s' uo, cd; Hkã r ; , fha; dÉ Kd m%K hkai s' kak j ; dÉ K h m%K bÉBm; al s' i o i s' j fl f%' úi j k khndul l ñgq / i ùfi S woyi ael j Qi s, a. j ka fi j d . re wud; H; eud j %; udk fhg Y% , xl dfj ys i s, a. j ka fi j d fÉ ; %hysÉhKj i |yd l ghq = rdYhl aÉh; al r we; snj mej i h' fuu l ghq = uQ d j Yfhka w; s re ckdém; s uyk d rcmÉ ue; s eudf. a . j ka fl koi a dkhl af, i wm rg ÉhKq l s' fi wNs dl h mdol l r . kñkai s' j k nj mej i h'



fl di d emaj evi gyfkaufYa wj i a d

fuu uyÖ=wruufKysmhjrl a
 f, i Y%, xl ka. j kai ud. u wm
 cd; h i ; =l r . ekũo, mDdk
 j Yfhkawvqi i m; a, dNkf. a
 myi j i |yd ñyka, xl d. j ka
 fi j h wdri N l f uo j eo. ; auq a
 mhj rhkafo' . j kai ud. i
 fufyhq l ghq =mñ, ndyr
 i dOl u; fj ki aj k nj o,
 mi q h l d, fhg we; j Qi d%a
 j i x. ; h, . j kahdkd bkDk
 ñ, wêl f, i by< hdu,
 fl ãUm; a. eg'j hkdS l reKq
 wêl f, i n, mE nj o Tyq
 ; j yrg; amej i h' f, d fhaúúO
 rgj , . j kahdkd i ud. i by;
 fya kau; úYd, uQ H
 wñnphl g uyK ýkanj o
 i uyr i ud. i j i d oeúg i ý j o
 nj o fmkj d ýka. re wud; H; ãd
 wm rfgyscd; d . j ka fi j dj ka
 fol " fuu ; ; j hg i d%: l j
 uyK ýkanj o i |ykal f<h'

l gkdhl nKadrKdhl
 cd; Hka r . j ka f; dgmf<ys
 ; j yrg; ai ý fl frk m, a
 i xj %Ok l ghq =i y u; a ,
 bEj k foj k cd; Hka r . j ka
 f; dgmf<ysl ghq =fya fl dg
 f. k bEß wk d. ; fhg wm rg
 i ú, a. j ka fi j d l %udka fhys
 kj m%; hl a, nd . ekũ l i ý
 i el hl kaf; drj i ý j k nj o
 t; ãd ; j ýrg; amej i h' Y%
 , xl ka. j ka fi j h i y . j ka
 f; dgm< i y . j ka fi j d ^Y% ' &
 i ud. u fkd fndod w; á kal rk
 , o oãmd%Yùh . úi u Ti fi a
 . j ka f; dgmf<ys i i fufyhq ,
 . j kanvqfufyhq i y . j ka
 hdkd wdydr mdk i emhu hk
 wxYhkayskj ÈhKj l ai y
 mñndDhl awe; j kqwe; ehó
 fyf; u ; j ýrg; amej i h'
 i ú, a. j ka fi j d wud; HdxYfha

f, á i fl aú mSrxö; ao i s j d
 uy; d, i ú, a. j ka fi j d
 wêl dßfhai Ndm; sthd% Ö*a
 ud%l , afrdl dka. K; s l
 uy; d, tyswOHÉ fckrd, ai y
 mDdk úOdhl kş Odí tÉ'ti 'i S
 ku, á B uy; d i y cd; Hka r
 i ú, a. j ka fi j d wd; kfphys
 wdi hd Ydka d r l <dmh Ndr
 l , dmñ wOHÉ fudl a % ta
 wj kauy; do fuy\$ woyi a
 oel j ý' i ú, a. j ka fi j d
 wud; HxYfhaw; f%l f, á i Ö
 ti aú; dkf. auy; d" . j ka
 . j ka f; dgm< i y . j ka fi j d
 ^Y% ' & i ud. fuysi Ndm; s
 m% k k úl ãi B h uy; d" Y%
 , xl ka. j kai ud. fuysmDdk
 úOdhl kş Odí ufkdÉ
 . K j %Ok uy; d we; ð . j ka
 fi j d fÉ ; fhysby< kş Odí ka
 /i l ao fuu i udri Nl
 W; á j hg i yNd. S j ý'

fl di á emaol Kqwdi hd; d
 j evi gyfkysmDdk l d%hd, h
 2005 j i f% i g 2011 cQ sui
 ol j d fl d<U msygg d ; nQw; r
 j evi gyk msyggúfi uQ d
 , h u, a wkj j evi gyfkys
 mDdk l d%hd, h wfkl ÷ a
 i dudöl rgj , o msyguh hq =
 neúka2011 cQ sui i g th
 nx. , dfoãfhavl d w. kj r
 msyggug ; fK h l r we; '

fl di á emaol Kqwdi hd
 j evi gyfkyskhdul l ñgq
 /i úu f; Èkl a; < mej; sw; r
 ty\$ m% M, odhS; fK l symhl u
 . kkd , o\$ fuu /i úfi \$
 i dl ÉPd m; ñka tfl d<yl a
 i dl Écdj g Ndckh úh' Bg
 wu; rj l ekvdfj ys fudkãfh, a
 kj r msygd we; scd; Hka r
 i ú, a. j ka fi j d wd; kfphys

mDdk l d%hd, h, weuBl d
 tl á ; ackmofhysf*vr, a
 . j ka fi j d md, k wd; kh"
 fndhx i y thd%ni a. j kahdkd
 kd mdok i ud. i kfhdckh
 l rñka/i úug i yNd. S j Ö%;
 mBi aúí ka. j ka fi j d
 fÉ ; fhyskj ; dÉ Kh kai y
 bEß keUre; dj hkamsn|
 bEßm; al fí o fuy\$ i ý l rk
 , o\$ /i úfi \$ i dl Écdj g
 Ndckh j Qfndfyda; dÉ Kd i y
 . j ka fi j d kremos dj h fl k
 fl dg. ; al reKqw; r pkod d
 ; dÉ Kh Ndú; l rñkafl frk
 kj . j kai x; rK l wföohka
 (Performance Based
 Navigation - PBN) ol Kqwdi hd
 l , dmfhargj , l hd; ul l f u
 i y rdch kremos ; d j evi gyka
 (State Safety Programme)
 tu rgj , l hd; ul l f u
 m%l ; j hl a. kS

kj pkod d ; dÉ Kh
 Ndú; fhkafl frk . j ka
 i x; rK hkã . j kahdkd
 fufyhq l ghq =i |yd
 úúOdí dr j Qj di sf. k fok
 w; r" . j kawj l dYfhys
 OdB; dj h jeä l f u i y tu. ka
 . j kawj l dYfhys; onoh , sys a
 l f u" . j kai x; rK fhys
 kremos ; dj i y l d%hÉ u; dj h
 jeäl f u i y . j kahdkd
 fufyhq ysúhou wvql f u
 j ekj Qbuy; am% s dN w; d r foã
 rdch kremos ; d j evi gyk
 u. ka. j kam% dyk fÉ ; fhys
 wdrÉ dj ; j ýrg; a; yj re l f u
 i |yd j Ql wföohkao
 y=Kj dfokq, efí '

Y%, xl dj mi q h j i r ; k ; < \$
 l i ý . j kawk; fl a fyda
 wk; fl a úh yel syÉi s ; ; j hl a

j d%; d fkdj QrdcHhI aj k w; r
 fuu rdchH kremos ; d
 jevi gyk yryd . j kau. S
 ck; dj g wdrE s j 0. j ka fi j d
 mej e; au ms n | j 0 u Y j di h
 ; j yrg; a; yj re l < yel sfö'
 , nk j i r i | yd fl di d ema
 wdh; kh u. kaol Kqwdi h d; d
 rgj , ai oyd l h d; ul l d ug
 khñ; ; dE K d i yd ms n |
 jevi gykgo fuu / i u fi s
 wkpe; h , ei K'

tyoScd; Hka r i u , a. j ka
 fi j d i xúOdkfhys (ICAO)
 wdi h d Ydka d r l < dmñ woHÉ
 fudl a ¾ tawj kauy; d i u.
 i u , a. j ka fi j d wud; H . re
 mhxl r chr; k ue; s ud
 mj ; j k , o i dl ÉPdj l os

mi q hod mej ; scd; Hka r
 ú. K k fh s Y% , xl dj , nd. ; a
 b; d Wi i am% M, h o mei i ug
 , l a l f < h' i duh Wodufuka
 fl á l d, hl s wm rg , nd we; s
 kmk; dj h m% xYkñ nj o Tyq
 i | yka l f < h' i u , a. j ka fi j d
 fE ; % ; < kai x. mñrej i y
 vñdhs wd s j 0 rgj , a , nd we; s
 wd% Ó l i xj % Okh bi u; =
 l rñkawoyi aoel j 0 wj kauy; d
 wd% Ó l i xj % Okhg we; s fl á u
 ud%. h i u , a. j ka fi j d
 fE ; % nj o mej i h' Y% , xl d
 rch cd; Hka r i u , a. j ka
 fi j d i xúOdkfhai y
 fl di d emaol Kqwdi h d
 jevi gyfka l ghq = i | yd , nd
 fok wk. si yd h ms n | i a + h
 m, l < wj kauy; d Y% , xl dfö

i u , a. j ka fi j d l ghq =
 fj kfj kacd; Hka r i u , a
 . j ka fi j d i xúOdkfhkaEh
 yel si yd h wj YH j 0 u gl s
 fkdulj , nd fok nj o i | yka
 l f < h'

fuy s l reKqoel j 0. re mhxl r
 chr; k wud; Hj rhd" wdi h d
 Ydka d r l < dmñ woHÉ l j rhd
 i y tu l d%hd, h" . j ka fi j d
 fE ; % fhs kremos ; dj h"
 wr l d dj i y l d%hÉ u; dj h
 mj ; j df. k hdu i | yd
 ork k dj 0 uy' . = mñ; k h
 fj kfj ka; u m% xi dj m pl <
 w; r" l < dmñ i y cd; Hka r
 . j ka fi j d l ghq = i | yd Y%
 , xl dfj ys woö ; j yrg; a
 fkdwvj i y fkd l vj d , nd
 fok nj o mej i h'



fl di d emaj evi gyfkaygmqi Ndm; sfuku
 i u , a. j ka fi j d wél d s fhawoHÉ fckrd, atÉ ti i sku, á B uy; d woyi aol j ñka

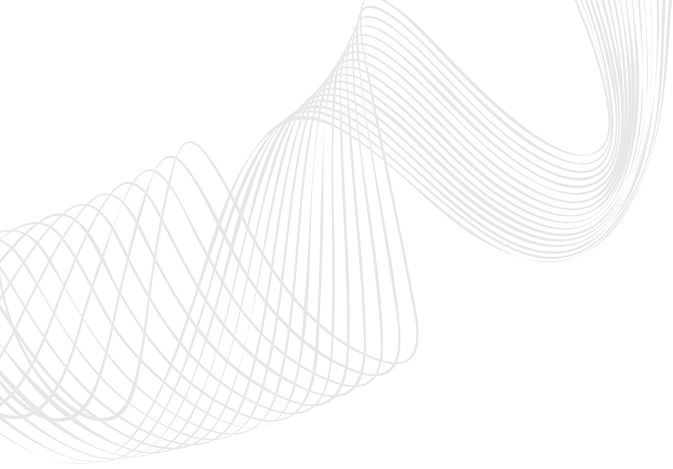


u; a , cd; Hka r . ʒ kaf; dgmn<
2012 wj i dkfhš
új D; I š ug I ghq =i Đdkii

j ; ukackdēm; sw; s re uykd rđcmĒ
ue; š ʒdf. ai xl , mhl g wkj fvd, ¼ ñ, ĩk
209 I úhoñkabĒfl frk u; a , cd; Hka r
. ʒ kaf; dgmn< ol ¼qm<df; ai xpđrl mš ¼Okh
yd NdKav yj udrej u. kawmkhk fĒ ; Šha
j di pdhl ; ; ʒ hl awe; sl Bug n, đfmdfrđ; a =
fō' I : dkdhl . re pu, arđcmĒ đ ue; š ʒđ úi ška
. ʒ kaf; dgmnf<ysmĐdk u. Sm¼hka h i |yd uq a
. , ; eř u mi q ĩod i šj I < w; r fuu wj i a dj g
i ú, a. ʒ kafi ʒ đ wud; H mħxl r chr; k uy; d
fukau mđ¼, ři ka =uka škdu, arđcmĒ uy; đ o
i yNd. Sáh'

. ʒ kaf; dgmnf<ysm<uqwĒhfrysj ev 2012 j i r
w. Nd. h j k úg ku I š ug n, đfmdfrđ; a =j k
w; r fyl għđ¼ 800 I amřđj g bĒl ři i šj kq
we; ' foj k wĒhr fyl għđ¼ 1200 I amřđ
bĒl ř ug n, đfmdfrđ; a =fō' j i rl g
i xpđrl hkañ, ĩkhl amuK f. kđ d . ekšug
yel ʒ k mĒĒ bĒl rk fuu . ʒ kaf; dgmnf<ys
Ođj k m: hg f, dj úYđ, ; u u. S. ʒ kahđkh j k
A 380 . ʒ kahđkh mj d f. đvnei á úug yel sfō'
tki ógr 3500 I Ē. šayđ ógr 75 I m<, I ška
hđ a j ĩs fuu . ʒ kaf; dgmnf<ysnvqm¼hka h
bĒl ř u; ai u. ol ¼qm<đ; ; < kđ amdokh I rk
t<j ' yd m<; ře wmkhkh I š ug myi đ i
i eři đ u; a , . ʒ kaf; dgmn< Ndú; I rk
i xpđrl ĩkcg b; d wvql d, hl šakj rt<h i y
wđre. ř ři j eksmřođř I rd . ukal ř ug yel ĩđj
, eř uo . ʒ kaf; dgmn< kđ d we; ʒ k ; j ; a
j di pdhl ; ; ʒ hl a fō'

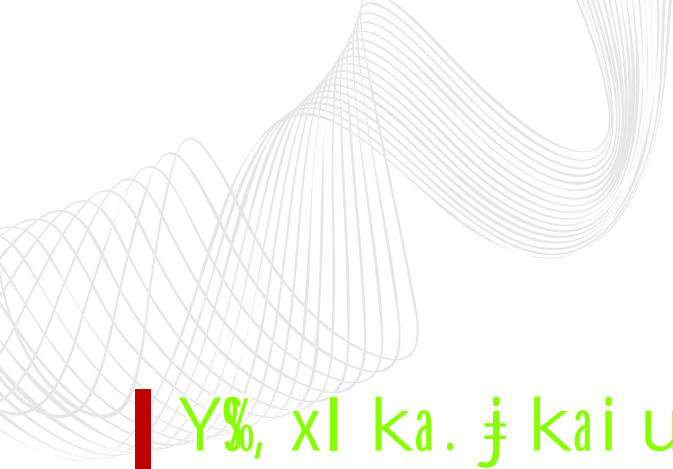




udj ke, a wOHdmk l <dmfha úyy, m; j rekaoekj ; al s u

Èj hfkamØdk wOHdmk l <dm 93 fl kØ l r
 . kñka-. j kafi j d l fl a fhkaì | l aY%
 , dxfl h orej kg h k f; audj hg f; ai ú, a
 . j kafi j d wèl dBh u. kaÈj hkmrd
 mj ; j kq, nk oekj ; al s fi j evi gyka
 ud, dfö l E. , a Èi a % d hg wh; audj ke, a
 wOHdmk l <dmfhaúyy, m; j rekaoekj ; a
 l s fi j evi gyk mi q hod l E. , a Èi a % a
 md%, fi ka =uka %. re l Kl fyr; a
 ue; s euf. amØdk; j fhkaudj ke, a
 uhrmdo úoHd, hñ mØdk Yd, dfö s mj ; j k
 , È' fi i |yd i ú, a. j kafi j d wOHÉ
 fckrd, ayd mØdk úOdhl k s Odí tÉ tí i s
 ku, á B ue; s eudo i yNd. Sj Qw; r t; eud
 úi kaúyy, m; j rekai |yd j Qy=kj dSfi
 bÈBm; al s uo i sñl rk , È' fuyS woyi a
 oel j Qmd%, fi ka =uka %. re l Kl fyr; a
 uy; d" ; udg fnfyúkai óm j QfÉ ; ñl aj k
 . j kafi j d fÉ ; ñl Ti fi al E. , a
 Èi a % d fhaorej kg i óm úug , eí u úfYd
 i sñul anj ; a tai |yd bÈBfhS ; u
 odhl ; j h yel sWmBuhka, nd fok nj ; a
 mej i h' udj ke, a wOHdmk l <dmfhaWi i a
 fm< mdi , ai |yd mej e; úug khñ; mØdk
 j evi gyk bÈBfhS mej e; úug khñ; h'





Y%, xl ka. j kai ud. ug kùk A 320 . j kahdkdj l a



Y%, xl ka. j kai ud. u úi kawdkkhkh l rk , o kùk; u A 320-200 . j kahdkh mi q hod l gkdhl . j kaf; dgm< fj ; f. dvni á j k , È' furgg meñKshdkfhai ú, a. j kafi j d wud; H . re mhxl r chr; k uy; d i y Y%, xl ka. j ka i ud. fi i Ndm; sKSYdka úl Ñi xy uy; d we; Ì' úfYd mBi l ao j lw; r Tj kam&s ekú i | yd i ú, a. j kafi j d wud; HxY f, d i rxõ; ao i s j d uy; d" i ú, a. j kafi j d wud; HxYfha w; f%l f, d i Ô ti aú; dkf. auy; d i ú, a . j kafi j d wOHÉ fckrd, ayd mDdk úOdhl k s Odí tÉ ti i Sku, á B uy; d" i \$i . j ka f; dgm< yd . j kafi j d i ud. fi i Ndm; sm%kk úl Ñi Bh uy; d" i \$i . j kaf; dgm< yd . j ka fi j d i ud. fi Wm i Ndm; sl u, ar; j ; a uy; d Y%, xl ka. j kai ud. fi mDdk úOdhl k s Odí ufkdÉ . Kj %Ok uy; d fuka ñyka, xl d i ud. fi mDdk úOdhl k s Odí l m s pkøfi k uy; d o i yNd. Súh'



Y%, xl ka. j kai ud. u j i r 11 l g muK mi q , nd . ; auq au kùk . j kahdkh fuh j k w; r Tj ka2015 j i r j k úg i h . j kahdkd i xLHdj 30 ol j d j %Okh l r . ekúg n, dfmdfrd; a = fõ'



oekg . j kai ud. u i ; j mj ; k . j kahdkd i xLHdj 18 l a^c, pr . j kahdkd 02 we; zj & j k w; r bÉBfh& ; j ; akj . j kahdkd l symhl d tl úug khñ; h' mi q h j l j dkj ; < i ud. u , o m% ; ho i u. kaYex. yh's fl dñ" . j ka á qfuka fudi d õ hk . ukdka fj ; o . j ka. ukawrUd we; '





wBfi kawynj YBkaoefhkai uq kS

i ú, a. j kafi j d wêl dÍ
f; aud . \$ho t; ¼df. ak¼udKhl a



i xy, Ndl dfö Wkk; hg uy; afufyj rl abgql <
úh; l f. ai uq. ekú mi q h uehsui 26 j k Èk i ýúh'
wBfi kawynj YBkafy< . \$ i dys Hfhawm w; Bkauel S
fkdhk wre; nr . \$ j eä m¼udKhl arpkd l r we; sw; r
úúO wdh; k i | yd f; aud . Srpkfkhö i h odhl ; j h
, nd \$ we; '

Y%, xl d i ú, a. j kafi j d wêl dÍ f; aud . \$ ho t; ¼d
w; kaí ysj 0. \$ rpkhl s wBfi kawynj YBkq ol j k
f. !rj hl aj Yfhkafuu f; aud . \$ h . j ka r mdGl Tng
f. kyer oel úug wm woyi al f<uq

Y%, xl d i ú, a. j kafi j d wêl dBh
l s ahi i kai f, a
fy<sfl dge fy&sfyf<a\$\$

i l ú; srdj K wdE hf. ka
o~qfudKBka. j k Èkd\$\$
úi aue; s, l ok j d-Bh fmd<kq a
mE úy kj K ukd\$\$

Wj ýre f; dr nj i | yd uq afj uq
fj hsfmr j el h wfma\$\$
bl ukawh uÖ ke. fuysuq afj uq
fi fj hsoel u wfma\$\$

rg j ei shq + i bgj k whßka
uöi u yd nef | u\$\$
i udc fufyj r i dr oyí / l
j . l Fukampu\$\$

f. h mo (wBfi kawynj YBka
. dhkh (wdpd¼h mKä; aví ã wurfoj
i x. \$ h (wdpd¼h mKä; aví ã wurfoj

The World's



f, dj m% u
mhdUk fydg, h



first flying hotel

The Hotelicopter

First Helicopter Hotel In the world has been inaugurated in UAE.
 First trip took off from Dubai Airport on June 6, 2011

Dimensions Length: 42 m (137 ft)
 Height: 28m (91 ft)
 Maximum Takeoff Weight: 105850 kg (232,870 lb)
 Maximum speed: 255 km/h (137 kt) (158 miles/h)



mhdUK fydg, hl kj dvj
 . ; l ſ ug Tng; awj i a dj
 , efi ki th fl ; ri
 wdYj dokh tl l aj kq
 we; @ f, dj ug a
 fy, fl dmgrh o ùuhš
 ux. , mhi eBh vndhs. j ka
 f; dgmkka2011 cksui 06
 j kod i j l rk , oš

fuys; j ; aúfYá ; j hl a
 j kfka fuh f, dj úYd, ; u
 fy, fl dmgrh o ùuhš
 ; Ügqfol l kai uká; fuys
 i mß . kfhal dur 18 l ka
 i uká; j k w; r w; skùk
 myi q i j , kao i uká;
 fõ'

2010 අංක 14 දරන සිවිල් ඉවත් වේවා පනත

[සහතිකය සටහන් කළේ 2010 නොවැම්බර් මස 03 වැනි දින]

එල්.ඩී.-එ. 52/2000.

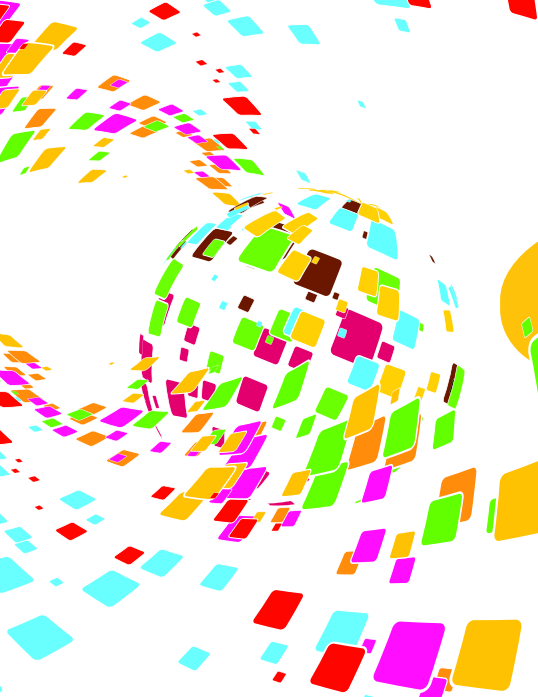
සිවිල් ඉවත් වේවාට විධිමත් කිරීම, සාලනය කිරීම සහ එම සම්බන්ධිත ආරණ්‍ය සඳහා අවශ්‍ය විධිවිධාන සැලැස්වීම, අන්තර්ජාතික සිවිල් ඉවත් වේවා සම්බන්ධිත පලාතමන කිරීම සහ එම සම්බන්ධ වූ හා එම ආනුෂංගික වූ ආරණ්‍ය සඳහා විධිවිධාන සැලැස්වීම ද සඳහා වූ පනතකි.

kuq a2010 j i f¼
mej e; ùug khñ; j 0
cd; Hka r i ú, a. † ka
fi j d ú. Kkfhal ghq =
myi qùug ki ful s
mkf; awj YH; dj ; Éka
oek¼q; r tys
j eo. ; d u j ; ukai ú, a
. † kafi j d wOHE
fckrd, a
tÉ ti i Sku, á ß
uy; d úi kawod<
md¼Yj hkafj ; oek¼
fok , E' tj l g j rdh
yd i ú, a. † kafi j d
kfhdcH wud; H OÙ
fynj 0. re ohdY%
; fi rd ue; s €df. a
uú d ; j fhka. re
frdays wfí . Kr; k
ue; s €d fuka
wud; HxY f, á i ; €df. a
oeä l emùu i y
Wkkáj u; i xFYdē;
mk; afl g¼ m; 2010
TI f; dn¼ 19 j k EK
md¼, fi ka fō i i u;
j 0w; r tu mk; 2010
wxl 14 ork i ú, a
. † kafi j d mk; f, i
y=kj hś

fuy\$ Y%, xl dj cd; Hka r
mñ; \$al ñdj g kexúu w; \$ka
ý¼j , ; j hl i á neúkatu
wvqndvqi i m¼K l < hq =nj g
oek¼ fok , \$' Y%, xl dfō
mej ; suú d . † kafi j d k\$ h
i y i ú, a. † kafi j d fr. = di s
h, amek. h tj d nj ; ai ú, a
. † kafi j d mßmd, k j Hyh
ý¼j , nj ; am¼dKj ; ai ýi d i
i ys myq¼ql d¼hh uKw, hl a
Y%, xl dfō i ú, a. † kafi j d
mßmd, kh i ; j fkdue; snj ; a
fuyÉ fy<úh' fuu wvqndvq
ke; d r. kñkakhduk
wdh; kh i ; =wÉ K yel ñdj
j eäÉh¼ql d u i |yd Y%, xl d
rch úi kacd; Hka r i ú, a
. † kafi j d i xúOdkfhys
; dÉ K d i yfhda \$ d wxYh
hgf; afufyhj kq, en0
j Hdmd; hl al ñd; ul l rk , \$'
kremos ; d l d¼hhkaj vd; a
fyd¼kabgd d u i |yd
hdj ; d d, \$ l rk , o mk; l a
wj YH j 0w; r 1950 wxl 15 ork
. † kai x; rK mk; fj k¼ g
kj k\$ hl abÉBm; al < hq =
nj o wj Odkhg . kkd , o\$ fuys
tl amhj rl af, i tj l g mej ; s
i ú, a. † kafi j d
fom¼; fi ka j fj k¼ g i ú, a
. † kafi j d wél dßh myy¼u
i y w'; \$ak\$ hl afl g¼ m; a

l d u l , a ; j k neúka2002
wxl 34 ork i ú, a. † kafi j d
wél d l mk; hgF; ai ú, a. † ka
fi j d wél dßh i a dmkh l rk
, \$' i ú, a. † kafi j d mk; a
fl g¼ m; i oyd 2004 j ¼l fha
wud; H uKw, wk¼e; h o
, en¼q; r 2006 i y 2008 j i r
j , \$ md¼, fi ka j g bÉBm; a
l < o md¼, fi ka =i ei j drh
wj i kaúu fya fj kaúj dohg
. ; fkdyl súh'

kuq a2010 j i f¼ mej e; ùug
khñ; j 0cd; Hka r i ú, a. † ka
fi j d ú. Kkfhal ghq =myi q
ùug ki ful smkf; a
wj YH; dj ; Ékaoek¼q; r tys
j eo. ; d u j ; ukai ú, a. † ka
fi j d wOHE fckrd, a
tÉ ti i Sku, á ß uy; d úi ka
wod< md¼Yj hkafj ; oek¼
fok , E' tj l g j rdh yd i ú, a
. † kafi j d kfhdcH wud; H OÙ
fynj 0. re ohdY% ; fi rd
ue; s €df. auú d ; j fhka. re
frdays wfí . Kr; k ue; s €d
fuka wud; HxY f, á i ; €df. a
oeä l emùu i y Wkkáj u;
i xFYdē; mk; afl g¼ m; 2010
TI f; dn¼ 19 j k EK
md¼, fi ka fō i i u; j 0w; r
tu mk; 2010 wxl 14 ork
i ú, a. † kafi j d mk; f, i
y=kj hś



e-ticketing

ál Üm; l a ^e-ticket& nj g m; a
 ùu t; ri wreuhl afkdfö'
 ; jo tj l g . ÷ ka fi j d i ud. i
 j , mej ; si di mðhd
 l ðdl dri i rgd j , kaneyer ù
 tai |yd kj uyKj r l a , nd
 şug fuh bj y, aúKş
 m; ş d ál Üm; a^Paper ticket&

. ekşug Tyf. a fyda wehf. a
 wkKH; dj h i y; ş l ş u
 wkj d%hh fõ' tai |yd
 ye=ki m; fyda fj k; amşs ;
 yel si dol bÊBm; al < hq h'
 weuBl d tl á ; ackmofha. ÷ ka
 fi j d i ud. i m<uqj ; dj g
 úoHq a ál Üm; aNdú; l ş u

wdr i N l f<a
 1990 uq a
 Nd. fhşh'
 uq şau rg ; <
 i ş j k . ÷ ka
 mşdyk l ghq =
 i |yd fi j d
 Ndú; l < w; r
 mi ş cd; Hka r
 . ÷ ka. uka
 ol ş d j Hdma
 úh' bkami q
 e-ticket
 nyq rhl a. ÷ ka
 u. şaw; r o
 mş, s j Qw; r
 . ÷ kai ud. i



f. da ş l rKh uq anei . ; a
 kQ k i udcfha fndfyda foai ş
 j kfkawka %cd, h yrydh'
 fufi a úoHq a fj < |du
 ^E-commerce& oekgu; aj %; udk
 fj < |di l ş l a ş i i mşK fhka
 fj k; l g fhduql r we; '
 tfukau wka %cd, h yryd
 myi d i , nd . kkd mş i tk i
 kd indol hkayd mdşfndcl hka
 . Kko Yş fhkaj eä úu úoHq a
 fj < |du ^E-commerce& j Hdma
 úug fya =ù we; ' fuj kaj l
 i udchl . ÷ ka ál Üm; o úoHq a

fukau úoHq a ál Üm; o Ndú;
 l rkfkatl u wdl drhgh'
 fj ki l g we; ş; a. ÷ kau. şa
 yg f; dr; şe wvx. =m; ş dj l a
 , nd fkdşuhs fuyş . ÷ ka. uka
 l d , i gyk" ñ , " mka ş we; ş
 i ş u f; dr; şe . ÷ ka fi j d
 i ud. u u. şamB. Kl . ;
 l rKq, nk w; r wj YH
 wj i a dj kayş fuu o; a fj ki a
 l ş ug yel ş dj we; ' . ÷ ka
 u. şhl a úoHq a ál Üm; l ş a
 . ukal rk úg . ÷ kaf; dgmf<a
 ş Boarding pass tl , nd

úi şaTj şaKş ÷ al rk paper
 ticket i |yd wu; r . di ş j l o
 whl rk , É'
 wka % cd; ş . ÷ kamşdyk
 i x. uh (International Air
 Transport Association - IATA)
 úoHq a ál Üm; am; aúl ş şug
 . ÷ ka. ukai mhk kfhdd; hka
 yg i i mşK wj i rh , nd ş
 we; ; awj i dkfhaTj şa tamşn |
 i ş u f; dr; şe . ÷ kai ud. ug
 i emh hq =fõ' e-ticketing
 u. şa. ÷ ka fi j d i ud. i j ,

úoHq aál Üm; aNdú; I rk
 u. Kq tjd mÍ È d l Í u
 (Check in) wka ¼cd, h
 Ti fi ð i ýl r . ; yel '
 tu. ka. ½ kaf; dgq< j ,
 ; onoh u. yeÍ ugo fuu
 l ½h uyÕ=rel ½ l afõ'
 ál Ü mf; ahí fj ki l a
 l Í ug wj YH j úugl
 u. Kq kfhdõ; hd yuqfkðù
 ýrl : khI kaj j o wj YH
 l drKh i ý l r . ekÍug
 fuu. kayel hñj , efi '



kfhdõ; hkg yd u. Kq we; s
 mðdk; u j di h ki' úhoi' wj u
 úuhs

úoHq aál Üm; ã m; % d ál Üm; a
 fuka. nvd l r ; eí ug wj YH
 fkdùuo fuyswe; s; j ; a
 j di hI ð tfuka úoHq a
 ál Üm; amg; aj k fõ, dj
 ol j du ol j du kd ð al < yel s
 neúkam; % d ál Üm; a, nd
 fkdÍu . ek ì h úh hq =ke; '
 úoHq aál Üm; au. Kq , eí ug
 i e<ei úug fmr fukawu; r
 úhoi' oeÍ ugo i ý fkdÍõ' fuu
 ál Üm; amß. KI . ; I r we; s
 fyhka. nvd l r ; nd . ekÍi §
 we; j k i h' . egz u. yeÍ hk
 w; r u. Kq ; u ál Üm; ake; s
 úu m&n| . egz we; s fkdÍõ'
 tfuka ál Üm; aupKh l Í ug
 tl aupK hka ½l amuKI a
 i Efyk w; r ál Ü l mkam; a
 tu wj i a dfj yu kd ð al <
 yel ski d u. Kq e-mail u. ka
 fydafax m; l au. kð ; u

ál Üm; i ðr l r . ; yel sùu
 fuyoSúfYá h'

úoHq aál Üm; aNdú; I rk
 u. Kq tjd mÍ È d l Í u
 ^Check in& wka ¼cd, h Ti fi ð
 i ýl r . ; yel ' tu. ka. ½ ka
 f; dgq< j , ; onoh u. yeÍ ugo
 fuu l ½h uyÕ=rel ½ l afõ'
 ál Ü mf; ahí fj ki l a l Í ug
 wj YH j úugl u. Kq
 kfhdõ; hd yuqfkðù
 ýrl : khI kaj j o wj YH
 l drKh i ý l r . ekÍug
 fuu. kayel hñj , efi '

i h' u l hñj kq m% úreoD
 l hñj l awe; a dfi au úoHq a
 ál Üm; au. Kawe; sj k wj di ð
 ke; j du fkdÍõ' ; dÈ KÍ
 fodd hl awe; j úwj i a dj l "
 we; eí úg u. kf. ao; a uel S
 hd yel sùu ñkamðdkh' tjeks
 wj i a dj l . ½ ka. ukaj , o hi
 hi mÍdo i ýúh yel ' ; j o u. ka
 wka ¼cd, h yryd ; u wi ka

fj kal rjd . ekÍu ki d
 wk d . ; fh§ kfhdõ; wd h; k
 j , fi j l wvj l awe; sùh yel s
 w; r / l hñd úh q a hI awe; s
 úugo fuh fndfyda fi hka
 n, mE yel h' . ½ ka. ukamÍdo
 j úfydawj , x. =j úwj i a dj l
 ; j ; a. ½ kai ud. ul g wkÍh q a
 l Í fi § m; % d ál Üm; a
 Ndú; fh§ fuka fuu l ½h
 myi ql ghq a l afkdùuo i ýúh
 yel s; j ; awj di hI ð

fl fi aj j o úoHq aál Üm; a
 l ½fhysj di swj di sù. %
 l Í fi § fuu. Kawe; j k j di s
 b; d by< nj fmkShhs
 tfuka oekg mj ; k wj di ð
 bÈBfh§ ; dÈ K fhaÈhKÍj ; a
 i u. u u. yrjd . ; yel snj g
 úYj di hl ð f. dv k. d . ;
 yel ' tfyhkawm fi i h, a
 wk d . ; hg ndr§ n, d i saúq

úoHq aál Üm; a - e-ticket
 m; % d ál Üm; a - paper ticket

. ʃ kã r fuʃ r l , dmfhkahŋ
 . ʃ kahdkd l dKãvhg . efkk
 oekg f, dj mj ; k wê; dĒ Kđ
 mʃdr l . ʃ kahdkdj l am<n|
 f; dr; ʃe Tn fj ; f. k tug
 woyi al f<uq

i ; ʃe f%vd% moŋ; sj , g
 yi fkdj k whʃkamʃdr t, a
 l ʃ fi yel hđj we; si fġ, a a
 (stealth); dĒ K h Ndú; fhka
 kmoj k fuu . ʃ kahdkh
 F22, Raptor kñkaye|kãfö'

F-22 Raptor ; kswdi khl ai y
 tkökafol l ai ys wê
 ; dĒ Kđ mʃdr l . ʃ kahdkhl ʃ
 . ʃ fkai g . ʃ kg (air to air)
 yd . ʃ fkai g f. dvi ug
 (air to ground) myr ʃi hk
 wdl dr fol u fj k; a. ʃ kahdkd
 j , g j vd w; sWi i auŮgul
 mj ; k w; r úohq amyr ʃi
 (Electronic Attack) i ʃ l ʃ fi
 yel hđj o fuu hdkdj g we; '
 Lockheed Martin yd Boeing
 hk . ʃ kahdkd kđ mdok
 i ud. i tđ dnoŋ fuu hdkh
 kmoj d we; ' mŋdk rduj " wú
 moŋ; h yd wj i dk tl , i a
 l ʃ fi l ghq =Lockheed Martin
 i ud. u úi kã i ʃ l rk w; r
 hdkfha; gđ n| fl dgi " . ʃ ka
 yei ʃei ; dĒ K wkđ , k
 l ghq =i y i hđ . ʃ kakhuq
 Wmdx. kmoüi Boeing i ud. u
 úi kã i ʃ l rhš fuysm%u
 mhi eʃh 1997 i ema ei n% ui 7
 j k Ēk i ʃ l r , o w; r 2005
 foi ei n% 5 j k Ēk
 F-22 Raptor f, dj g y=kj d
 ýkš wê ; dĒ Kđ . ʃ kahdkd
 l dKãvhg wh; aj k fuu hdkh
 oekg Ndú; l rkq, nkřka
 weuBl d tl á ; ackmo . ʃ ka
 yuŋdj úi kãmuKl aúu



F-22

Raptor Stealth Fighter

F-22 Raptor, the world's premier 5TH generation fighter

úfYá ; ʃ hl ʃ hdkdfö i h' u
 whš h o Tj kã i ; ʃ we; sw; r
 fi j k úg hdkd 168 l amuK
 kmoj d we; '

j %l 1981 ʃ weuBl d tl á ; a
 ckmo ; u hŋuh wj YH; d
 jeä ĒhđKql ʃug wj YH j 0
 neúkaTj kã i ; ʃ ; nqmŋdk

mʃdr l hdkdj j k
 F-15 Eagle hdkdj yel ʃ dl a
 jeä ĒhđKql rk , oš fuu
 j l j dkřöoú rei hđj úi kã
 F-15 hdkdj g j vd Wi i a
 ; dl á Kfhkahq aSu-27
 Flanker ki hdkh t<s
 oel áu; ai u. u ; s ei aug , l a
 j 0weuBl d tl á ; ackmo



F-22 Raptor ; kswdi khl a
 i y tkōkafol l ai ys wē
 ; dĒ Kđ m%drī . ǰ ka
 hdkhl ś . ǰ fkai g . ǰ kg
 (air to air) yd . ǰ fkai g
 f. dvī ug (air to ground)
 myr Šī hk wdl dr fol u
 fj k; a. ǰ kahdkdj , g j vd
 w; sWi i auŪgul mj ; k
 w; r úohq amyr Šī
 (Electronic Attack) i ŷ
 l βfi yel hđj o fuu
 hdkdj g we; ' Lockheed
 Martin yd Boeing hk . ǰ ka
 hdkd kđ mdok i ud. ĩ
 tđ dnoDj fuu hdkh
 kmoj d we; ' mōdk rduǰ "
 wú moD; h yd wj i dk
 tl , i al ś fi l ghq =
 Lockheed Martin i ud. fuka
 i ŷ l rk w; r hdkfha; gđ
 n| fl dgi ". ǰ kayei rēi
 ; dĒ K wkđ , k l ghq =i y
 i hġ . ǰ kakhuqWmdx.
 kmoūi Boeing i ud. u ūi ka
 i ŷ l rhś

rei hđj wNnj d hdug wj YH
 i h" i e<i ĩ l %d; ul l <y'
 Tj ǰkaj eā wj Odkhl a
 f%vd%j , g yi qfkdj k
 hdkdj l akmoūu fj ; fhduq
 l < w; r j %l 1986 i hġu
 weuBl dkqm%drī . ǰ kahdkd
 kđ mdok i ud. ĩ fj ; YF-22
 yd YF-23 kñkauq dl D; sfol l a
 , nd ś wj i dk ; ŠKhl g
 t<ōug Tj ǰkal ghq =l <y'
 by; wdl D; sfol u f%vd%j , g
 yi qfkdj k ; dĒ K fhkahq =
 tǰ d j ūw; r n| fl dgi fj k; a
 wdl D; sfol l ś 1991 wfm% aui
 23 j k Ēk YF-22 hdkdj

kmoūug weuBl d tl á ; a
 ckmo; ŠKhl rk , Ē
 YF-22 hdkdj kmoūfukami ĩ
 i h" w; ayod ne, Š yd ml Ē K
 l ghq =u. ka tu hdkdfō
 fj ki d ĩ / i l ai ŷl rñka
 F-22 kue; sm%h, hdkdj
 wj i dk fhaś t<ol ĩ k , Š'
 m%u hdkdj weuBl d tl á ; a
 ckmo . ǰ kayuđ
 uq i a dkhl aj k Nellis fj ;
 Lockheed Martin i ud. u myś
 Georgia yĒ i hġ l ghq =ku
 ūfukami ĩ 2003 ckj dβ ui
 14 j k Ēk Ndr fok , Š' taj k
 ūg i ud. u ; < ; j ; ahdkd

kmoŷj ñka; űq; r 2004
 j i f% ś hdkd 51 l a, nd śug
 l ghq =l <y' ; j o 2007 ś
 hdkd 60l ai |yd
 fl dka %; a ǰ l
 Lockheed Martin i ud. u fj ;
 , enĳś

F-22 Raptor yswe; si ūfYđ snj
 kđ d hdkdj wmkhkh l βu
 weuBl d tl á ; ackmo rch
 ūi ka; yki l r w; r cmdkh"
 Ōkh" ĩ i fŪ% hđj jeksrgj , a
 u. ka weKj ĩ , enĳo tAi h, a
 Tj ǰka ūi ka m% Ē ml rk , Š'



F-22

Raptor Stealth Fighter

F-22 Raptor, the world's premier 5th generation fighter

Raptor hk kduh fhšug fmr Super Star, Rapier hk k'ij, k̄ F-22 hdkdj yečkj Q w; r tu kduhkaĒ. =l, l a fkdmej; Kš fi i |yd uq š j Yfhka fhod f. k we; s-i f̄g, a ā (Stealth); dĒ Kh m̄n| f; dr; ƒe úui d n, uq i; ƒe f̄vd̄; rx. Wrđ. k̄kd f, dayhl ka hdkdj ku l r we; sw; r fuyĒ úYd, wNšfha hl g uyč šug F-22 k̄udKl rej k̄g i š j čk̄s uk̄ óg fmr fj k; argj, a fuj eks f, day fhod f. k hdkd kmoüi i š l <o tk̄ka; < we; swj r fm; j, j eoš f̄vd̄

; rx. h<smrdj ¼: kh ùu k̄i d tu W; á dyh wi d̄: l úh' tki uq hdkdf̄o i h̄u Wmdx. by; f, day j, ka kmoúh fkdyl s k̄i d hdk fhawNHka rh; <g f̄vd̄; rx. we; ǔ ùu je, fl k wdl drhg k̄udKh l Bug Raptor k̄udKl rej k̄g i š j čk̄s tmukl afkdj . š ka khuj df. ayi awdj rKh . ek mj d Tj čg wj Odkh fhduq l Bug i š j čk̄s fuf, i f̄vd̄; rx. Wrđ. k̄kd f, day úFYá hl ka kmoj čk̄ F-22 Raptor ys n| fj k; a m̄dr̄l hdkdj, kafj ki a úFYá yevhl a. k̄s hdkdf̄o /f. k hk m̄dr̄l ñi h̄s mj d

hdk fhawNHka r l á; < . nvd l Bug; šKh l <y' kuq atu l áfhkañi h̄s h bj; g hk wj i a df̄oĒ f̄vd̄; rx. j, g yi f̄o hkk̄ i el hl au; =úh' tAi |yd o Wml WiYš j b; d i ĩl d, hl a; < ñi h̄s h k̄d ÷ a j k wk̄ug k̄udKh l <y' i; ƒe ñi h̄s j, ka k̄d ÷ aj k wfOdr̄l a l rK u. k̄ wdrĒ d j k wk̄ug ku l r we; sfuu hdk fhatk̄df̄ukaf; rm̄j n, h bj; g fok l j ĩ o (Nozzles) úFYá yevhl ka kuj d we; ' weurđ dfj ysóg fmr kmoj k , o F-117 ki l df. a al; d n̄yg, l j QStealth j ¼. fha hdk fha; nQfod̄ hl aj Qfj ki a



F-22
Raptor Stealth Fighter



fuyskhuql áh ; < Wml rK i j hxl hñj
 l hñdl rk w; r
 nyd d¾h ; r yd i xföE
 ; r khuj df. a
 yi uÜgug we; s; r
 ol kg , efí ' fj k; a
 hdkdj , fuka fkdj
 i hñu l d¾hhka
 i j hxl hñj i ýj k
 neúkakhuj dg b; d
 myi h' khuql á
 wdj rK ho b; d úYd,
 neúkame, amrdi hl a
 khuj dg Èi fõ' hdkdj
 mK . ekúu mj d b; d
 myi qj k
 F-22 Raptor yskhuq
 l áh khuj df. al s u
 ueËy; aùul kaf; drj
 m¾K i j hxl hñ i y
 i j dèkj l ghq = l f ug
 yel hñj o mj ; s



l d, . Kd ; ; j j , g Tfrd; a =
 fkdşu jeks fodl o
 F-22 Raptor ysol kg
 fkd, efí '

F-22 Raptor ys f¾vd¾ moD; h
 fj k; al s u m¾dr l hdkdj l
 ol kg fkdue; sj ¾. fha
 moD; hl s wk; fe weÖüfi
 f¾vd¾ o wfOdr l a yd
 mdrci nq l rK u. kai ; fe
 ñi hş y=kd . ekfi f¾vd¾ yd
 fj k; a; rx. , nd . ekşug
 kmoj k , o l v d wek gkd j ¾.
 30 l amuK tl g i úl rk , o
 f¾vdrhl d fi w; r fõ'

AN/ALR-94, AN/AAR-56 yd
 AN/APG-77 tu f¾vd¾ j ¾.
 fõ' fi j d i h, a ' kEu
 l d, . Kd ; ; j hl ahgf; ao; a
 , nd foà AN/APG-77 f¾vdrh
 u. katl j r i ; fe b, l d
 l symhl g myr şfi yel hñj
 we; sl rhş ; jo tu. kai ; fe
 hdkdj , i xföE Wml rK wvd,
 l f fi yel hñj l ao mj ; s th
 Electronic Attack kñka
 y=kj hş

fuyskhuql áh ; < Wml rK
 i j hxl hñj l hñdl rk w; r
 nyd d¾h ; r yd i xföE ; r
 fuka khuj df. ayi uÜgug
 we; s; ro ol kg , efí ' fj k; a
 hdkdj , fuka fkdj i hñu
 l d¾hhka i j hxl hñj i ýj k
 neúka khuj dg b; d myi h'
 khuql á wdj rK ho b; d úYd,
 neúkame, amrdi hl a khuj dg
 Èi fõ' hdkdj mK . ekúu mj d
 b; d myi qj k F-22 Raptor ys
 khuql áh khuj df. al s u
 ueËy; aùul kaf; drj m¾K
 i j hxl hñ i y i j dèkj l ghq =
 l f ug yel hñj o mj ; s ; jo
 we; ei úg Nñfhal i ý md, k
 uOHi a dkhl Wml drhl a
 fkdue; j ti eKkao; a fi dh
 l ghq = l f fi yel hñj l ao fuu
 hdkh i ; h'

F-22 Raptor, wú n, h w; ka
 b; d by< uÜgul mj ; k w; r
 myr fok wdl dr mj d fj k; a
 hdkdj , g j vd fj ki h'
 Raptor yswNHka r wú . nvd
 l rk m¾dk l á 3l s hdkh ueo
 yd fomi fi j d mygd we; ' ueo
 l áh ; < ñi hş 6l d fomi tl a
 l áhl ñi hş 2 ne. k d /f. k
 hd yel ' wj YH úfgl ñi hş

bj ; al r fndä n j ¾. o /f. k
 hdfi yel hñj we; ' 20 mm
 cannon j ¾. fhawúhl d Raptor
 i ; h' AIM-120 AIM-9
 Sidewnder j ¾. fha. j f kai g
 . j kg (air to air) myr Èh yel s
 ñi hş o GBU-39 j eks fmd<j g
 t, a l < yel sfndä n o fõ' óg
 wu; rj ; j ; awú j ¾.
 l symhl d fõ'

Raptor ys uq d f; dr; fe foi
 ne' úg hdkdfj ysÈ. óg¾
 18'90l ao Wi ógr 5'08 o ; gj l
 j ¾. M, h j ¾. ógr 78'04 l d
 ; gq w; r mr; rh ógr 13'56 fõ'
 yi anr l f, da ñi 19'700 fõ'
 megj q nr l f, da ñi 29'300 l a
 fõ'

WmBu fõ. h meh g l f, dógr
 2'410 l s Raptor ys Ndú; l rk
 tkÖkaj ¾. h j k fka Pttand
 Whistney F119-PW-100 h'
 fu j eks tkÖkaj ¾. 2l ahdkh
 ; < wka ¾. ; h' f. k hd yel s
 wNHka r bkÖk nr l f, da ñi
 8'200 o wu; r gexl s 2 ; <
 l f, da ñi 11'900 l bkÖk
 m¾dkhl a /f. k hş

Raptor hdkd b; sydi fhai ý j l
 wj di kdj ka u i ý üu 2009
 ud¾; =ui 25 j k Èk i ý úh' ta
 weuBl dkq. j kayuod Edwards
 uq di a dkhg wdi k k fhÈ
 mí È K . ukj drhl kr; j q
 . j k akhuq David P. Cooley
 fndä n fy<fi mí È K d; ul
 l ghq a l kr; j k wj i a dföE
 we; sj Qmmreul kami qhdk fha
 wêl fõ. h; ai u. khuj d
 hdk fhk abj ; ajjo i ý j l
 mmreue yd hdk fha fõ. h k d
 khuj d Öú; È hg m; aùuhş

wYdkafyÜáf. ●

Artist's concept of an aircraft that could enter service in 2025
from the team led by The Boeing Company
fndthx . j kai ud. u úi kafufyh j k , o ñ; %l Kwdhul tl a Ys mshl f. a
woyi g wkj 2025 j i f%\$ fi j fhahtq =úug khñ; . j kahukdj l a





Pathfinder in flight over Hawaii.

Pathfinder Solar-Powered Aircraft



mdi , aorej kg kj erÈ oekµ , nd šu . ĩ kafi ĩ d i udc i xl , mfhamØdk wruĶhs

mq a , u wOHdmk l <dmfhauq au . ĩ kafi ĩ d i udcfhaj evi gykg i yNd. Šfj ņka
i ū, a. ĩ kafi ĩ d wud; H mhxl r chr; Ķ uy; d mj i hs

Y%, xl d i ū, a. ĩ kafi ĩ d
wël dĬfhā i ū, a. ĩ kafi ĩ d
i xj %Ok i y wOHdmk d tā l h
u. ka. ĩ kafi ĩ d l fl a %hka
i | l aY%, dxl h orej kg ĩ hk
f; udj hgf; amdi , a; < . ĩ ka
fi ĩ d i udc msyġūfi
jevi gyfka; j ; awÈhrl a2011
uehsui 26 j k Èk i ū, a. ĩ ka
fi ĩ d wud; H wud; H . re
mhxl r chr; Ķ ue; s eudf. a
mØdk; ĩ fhkawdKuvj m, a u
kkÈñ; %kfj dØHd uOH uyd
úoHd, fhš mej e; ūK'
úfYā fhkau mdi , a; < . ĩ ka
fi ĩ d i udc msyġūfi
jevi gyfkamq a , u wOHdmk
l <dmfhawdri Nl . ĩ kafi ĩ d
i udch msyġj k , ofoakkÈñ; %
kfj dØHd úoHd, h j k w; r tys
. ĩ kafi ĩ d i udch ūi Ķafuu
jevi gyk i xúOdkh l rk , È'
fuu jevi gyk i |yd Y%, xl d
i ū, a. ĩ kafi ĩ d wël dĬfha
wOHÈ fckrd, ayd mØdk
úOdh l kš Odí tÉ tí i S
ku, ā B uy; d we; ÷ ; j ; a
i i Ndj Kñ wuq a kaúYd,
mØdkhl d i yNd. Súh'

jevi gyk wdri N l ņkatāj ā
fmf%rd i y fl d, Ķafmf%rd
hk uy; ĩ rekaúí Ķayri a
md, l wdo%Y . ĩ ka hdkd
i xo%YKh mj ; ĩ k , o w; r bka

wk; fej Y%, xl d i ū, a. ĩ ka
fi ĩ d wël dĬfhawOHÈ
fckrd, ayd mØdk úOdh l
kš Odí tÉ tí i S ku, ā B
uy; d ūi Ķa. ĩ kafi ĩ d fÈ ; %
m<ñ | y r j ; abÈBm; al š ul ai ŷ
l rk , oš mdi f, ai š Ķaúí Ķa
boBm; al r ; rØk%udK i |yd
; Hd. mØdkh o tys
wud; Hj rhd w; Ķai ŷúh'

i ū, a. ĩ kafi ĩ d wud; H wud; H
. re mhxl r chr; Ķ ue; s eud
i h woyi aol ĩ ņkam% dY l r
i š fhaorej kg , nd Èh hq ā; a
fyd | foanj hehsmerKs
l Ķukl amj ; Ķ nj ; a kuq a
j vd j eo. ; aj Ķfkaorej kg
Ķj erÈ foa, nd šu nj hš Ķj erÈ
foaorej kg , nd šu i |yd j Ø
fuu jevi gyk bÈBhg



f. khdu i |yd i ū, a. ĩ ka
fi ĩ d wël dĬh; ai u. Ķaw; ĩ e, a
ne | . kĶd nj mej i Øtauy; d
; j ; aj i r 10 l ĶamuK
mq a , u l <dmfhka i yj k
. ĩ kakhuj l =oel ū i h tl u
n, dfmdfrd; a ĩ nj o j eäyrg; a
mej i h' ; j yrg; awoyi aol ĩ Ø
t; eud mq a , u wOHdmk
l <dmfhkawdri N l < fuu
. ĩ kafi ĩ d i udc i xl , mh
rgmrd j Hdma l š u ; u tl u
woyi nj ; amej i h'

-. ǰ kafi ǰ d fĒ ; ǰhkaì | l a

Y%, dxfl h orej kg̃

j evi gykaud, dj

fudKrd. , Èi a % d h - je, a j dh i y ì ì , wOHdmk l <dm

2011 oehg l re< cd; d j evi gykg i u. dój -. ǰ ka fi ǰ d fĒ ; ǰhkaì | l aY% , dxfl h orej kg̃ hk f; udj hg f; afudKrd. , Èi a % d fha je, a j dh" ì ì f, ahk wOHdmk l <dm fl k d l r . kñka. ǰ ka fi ǰ d fĒ ; ǰ w dY% j mdi , a i s ǰ kaoekj ; al ǰ fi j evi gyka 02 l aY% , xl d i ú , a. ǰ ka fi ǰ d wêl dBFhã i ú , a. ǰ ka fi ǰ d i xj ¼OK i y wOHdmk d tã l h u. kai d%: l f, i mj ; ǰ k , È' fuysuq au j evi gyk fmd, ai y ck ; d j ; =i xj ¼OK wud; H . re c. ; am d ml eudr ue; s eudf. a m d k ; ǰ fhkaje, a j dh" ; Ku, ú , cd; d mdi f, § mej ; s w; r tysfoj k j ev i gyk wOHdmk kfhdch wud; H . re . dñKSúō; aúō; u d s fi d h i d ue; s eudf. am d k ; ǰ fhkaì ì , " fj , a i á cd; d mdi f, § mj ; ǰ k , È'

. ǰ kakhuql m s dka fi kl d m k d k j uy; ñ h ú i kafuu j ev i gyfkam d k fo d kh m B. Kl bĒrm; al ǰ ul a wdY% h kabĒBm; al rk , o w; r bkmi ǰ oek u ñ k u j evi gykl á . ǰ kahdkhl a m s r | m f h d a d w; d el l a fuku m % u j rg by; ú o Hd, hk ays l % dx. k Ndú; l rñkaw d o % Y . ǰ kahdkd

i xo ¼Yk 02l d mj ; ǰ k , È' rg ; < mej ; sh p u h j d; dj r k fhka wk ; ǰ ej mej ; sm % u w d o % Y . ǰ kahdkd i xo ¼Ykh fuh ú uo ú fY d s i s y u l s

je, a j dh j evi gyk i | yd l <dm fhamdi , a24 l . ǰ ej reka i y i s ǰ k o we; ÷ j 600 l muK m B i l ai yNd. S j 0 w; r w d o % Y . ǰ kahdkd i xo ¼Ykh kerou i | yd 1000 l g wêl m B i l a i yNd. SúK' bkawk; ǰ ej ì ì , l <dm fham e j ; s j evi gyk i | yd l <dm fhamdi , a18 l . ǰ ej rekai y i s ǰ k o we; ÷ j 500 l muK m B i l ai yNd. S j 0 w; r w d o % Y . ǰ kahdkd i xo ¼Ykh kerou i | yd m f o a j di k ao we; ÷ j 2000 l g wêl m B i l ai yNd. Súu l em s fmK k s

mej ; s j evi gyka fol u w j i dk fha T f i mdi , g; a. ǰ ka fi ǰ d i udchl ahk fmd; t l a t l amdi , ai | yd , nd ýkaw; r ; u mdi f, § . ǰ ka fi ǰ d i udchl awdri N l ǰ fi we; s j eo. ; al uo je ä yrg; ameyeĒ, s l r fok , È' mej ; s j evi gyka fo fl y s u m d k w u q a kaj 0 wud; H j rekai h woyi aol ǰ ñka mj i d i á f h a u; a , bĒfj k kj cd; H ka r . ǰ ka f; d g m < wi < u m s y á m f o a h j k

fudKrd. , g fuj eks j evi gyka , nd s u l d f, d ñ; l ǰ dj l aj k nj ; a th ; j ýrg; aj ¼OK h l r . ek ú ; < kahym; am d M, w; d r . ; yel snj ; h'

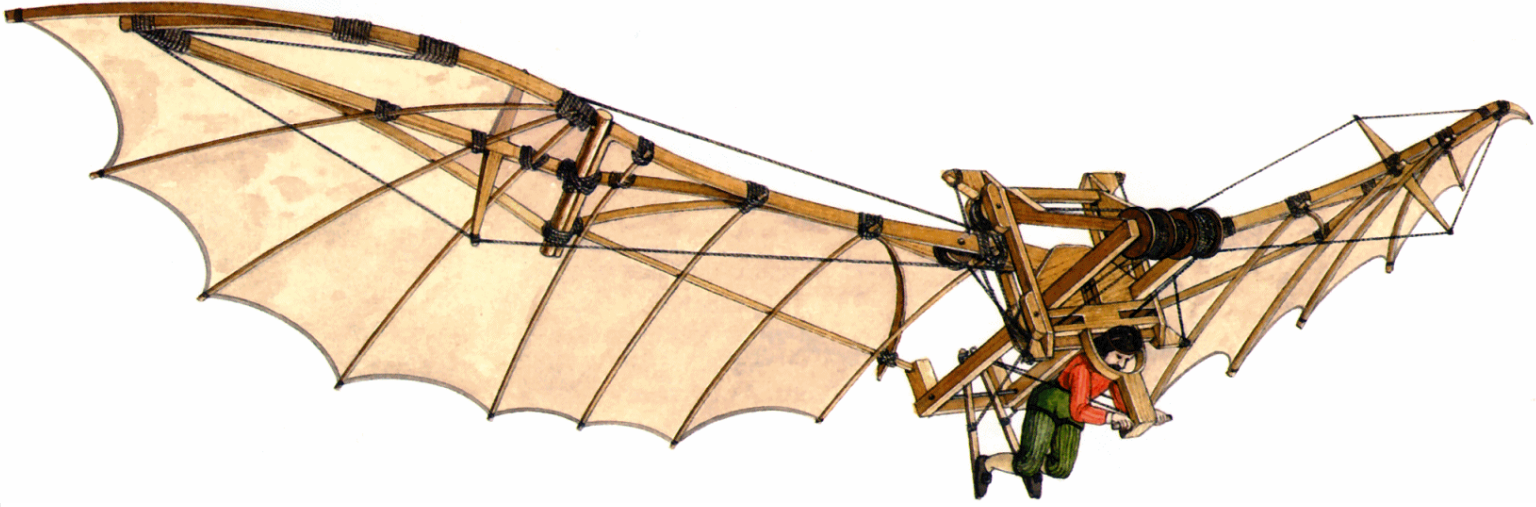
fuu w j i a dj i | yd i ú , a. ǰ ka fi ǰ d wud; H x Y f h a f, d i rxō; d i s ǰ d uy; d fuku i ú , a. ǰ ka fi ǰ d wêl d B f h a w O H Ē f c k r d, a t Ē ' t i ' i s k u , á B uy; do i yNd. Súh' tyĒ i ú , a. ǰ ka fi ǰ d wud; H . re m h x l r chr; k ue; s eudf. am K j q h wud; H x Y f, d i ; eud ú i k abĒBm; al rk , o w; r i ú , a. ǰ ka fi ǰ d wêl d B f h a w O H Ē f c k r d, a t Ē ' t i ' i s k u , á B uy; d woyi a ol ǰ ñkam j i d i á f h a mdi , a i s q i s i p h k a f j k f j k a m e j e; f j k f u j e k s c d; d u h j Y f h a j e o . ; al ghq = bĒBhg f. k hdu i | yd i ú , a. ǰ ka fi ǰ d wêl d B h j Y f h a , ndĒh yel s W m B u i y h ñ k a bĒBhg; a f k d m e l s j , nd fok nj h s j evi gyk w j i dk fhamdi , a i s q i s i p h k a o i h woyi a o l ǰ 0 w; r T j k a m j i d i á f h a f u j e k s j á k d j evi gykl a m e j e; ú u i | yd fudKrd. , Èi a % d h f; d r d . ek ú m s r | T j k f. ayo m B i a ÷ h y ñ j k nj h s

ì ì , wOHdmk l <dmfha
mej ; sj evi gyfkaúfYd wj i a d



j e, a j dh wOHdmk l <dmfha
mej ; sj evi gyfkaúfYd wj i a d





ತೃಕುಹದಗ; Nghf;F tuj ;J mdw೩Ue;J , d;Wti u

fhw೩Y k; ghuk; Fi wej etl gwGfspd; c Uthf;fk;

vq;fs;೩; mj ೩fkhNdhh;
 r೩ej ೩ggJ NghdW thd;
 gwGfFs; 20 Mk;
 E;wwhz bd; Mukgj j ೩;
 e೩foj j ggl ;i t vdrDk; 100
 Mz ;LFS fF KdduhfNt
 , j wfh d Kawr೩fs;
 Nkwnfhssgg ;j wfh d
 Mj huq;fs; c ssd.
 Kj yhtJ kdj g; gwG 1783
 , y; g೩hd;] ೩;
 , l kngwj hff;
 \$wgGLdwJ.

NkhdwNfhyg೩ah;
 rNfhj uhfshy; (Montgolfier
 Brothers) c Uthf;fggl ;
 ntggthA gY}d;೩; 8 ೩k೩
 (5 i ky) J}uj j ೩wF N[k;] ;
 kwWk; g೩hd;] ೩ Nfh
 vdNghh; gwe; h;fs; vdf;
 \$wgGLdwJ. , t;
 gY}dh dJ kuj j ೩ d
 vhpA; ;L t j dhy; ngwgg ;
 tYi tg; gadgLj j ೩
 (Wood Fire)
 c Uthf;fggl bUej j hff;
 \$wgGLdwJ. , J
 kdj d;೩; fl LggLj j y;
 Ki wfF mgghwgl ;j hfTk>
 fhW vj j ೩ r೩y;
 tRf dwNj h mj j ೩ r

Nehf;fg; gwFk; j di k
 nfhz ;j hfTk;
 tbt i kf;fggl bUej J. , t;
 ti f gwFk; fU೩fs;
 mnkhf;fht;೩; , l k;
 ngwj hff; \$wgGLk; r೩t;೩;
 Aj j j j d; NghJ
 gadgLj j ggl ;j hfTk;
 \$wgGLdwJ.

, t; gY}d;೩; fz ;Lg೩gG
 fhuz khf 18 Mk;
 E;wwhz bd; gwGf j ೩fs;೩k;
 19 Mk; E;wwhz ;L
 fhyggf j ೩Yk; gY}d;
 gwj j yhdJ l Nuhgg೩
 ehLfs;೩; g೩y;ak;
 ngwj hdwhff;
 fhz ggl ;J. mNj
 E;wwhz by; , l kngwj hff;
 \$wgGLk; Muhl r೩fs;೩;
 gadhf kdj dhy;
 fl LggLj j ggl f;\$ba
 gY}d;fs; c Uthf;fggl ; d.
 Kj d; Ki wahf 1852 , y;
 fhWYk; ghf;fg; ghuk;
 Fi wej Jk> kdj dhy;
 fl LggLj j ggl f;\$baJ kh d
 gY}d; g೩hd;] ೩;
 fz ;Lg೩f;fggl ;j hff;
 \$wgGLdwJ. , t; gY}d;೩;
 n` dw ೩ [;thl ; vdgth; 24

೩k೩ J}uk; gwe; ೩Uej j hfTk;
 \$wgGLdwJ.

1852 , y; c Uthf;fggl ;
 kdj dhy;

fl LggLj j ggl f;\$ba gY}d;
 , j; Ji way; kwWkhU
 gbff;yyhdJ 1884 , y; , l k;
 ngwj hff; \$wgGLdwJ.
 mj htJ Kj d; Ki wahf
 8.5. Nfh] ; tYTI d;
 \$baJk> 23 e೩k೩ q;fs;೩; 8
 ೩k೩ (5 i ky); gwfff;
 \$baJk> kdj dhy;
 fl LggLj j ggl f;\$baJ kh d



gwj j w; fU೩ rhhy;] ;
 nudhy; ; kwWk; Mj h;
 ೩w;] ; vdNghuhy;
 c Uthf;fggl ;J. , J 170
 mb (52 kl ;h) eSk; kwWk;
 66x000 ೩A;೩f; mb (1>900 fd

kl i h) c i l a j h f T k ;
 fhz ggl i J . v d p D k ; , t ;
 ti fahd gwj j y ;
 c g f u z q f s ; n g h J t h f f ;
 F W f j a M A I ; f h y j j i d f ;
 n f h z i j h f N t f h z g g l i J .

1884 , y ; c U t h f ; g g l i
 k d j d h y ;

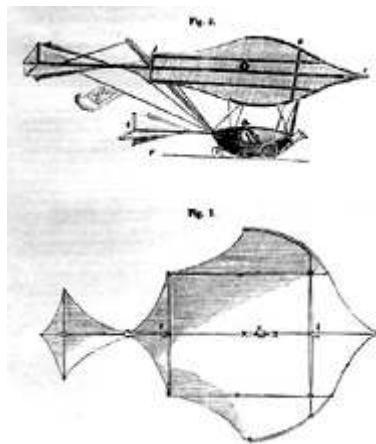


f l i g g l j j g g l f \$ b a g w j j w ;
 f U t p

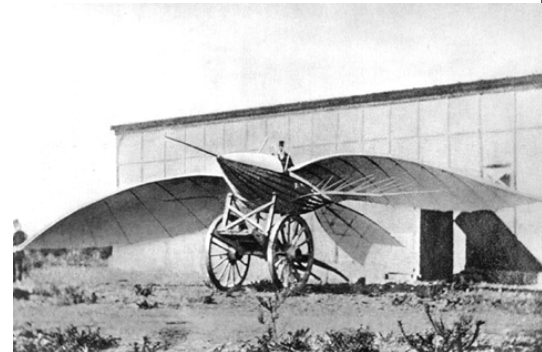
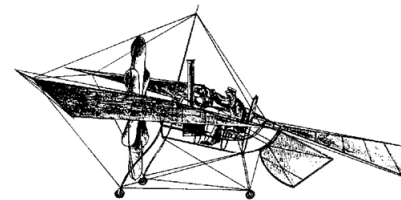
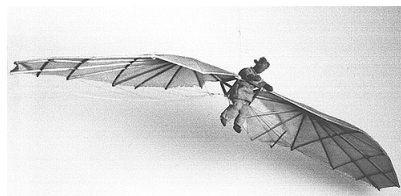
f h w w p Y k ; g h u k ; \$ b a d t h f
 j a h h f ; f g g l i g w g G
 c g f u z q f N s j w N g h j a
 t h D } h j p a r d ; N j h w w j j p w F
 m b g g i l a h f f ; f h z g g l i d .
 , t t h w h d g w g G
 , a e j p u q f s > g y k ; t h a e j
 f d ; t] ; (c a n v a s) , d h y ;
 # o g g l i g h u k w w
 f l i i k g G l d ;
 \$ b a d i t a h f f ;
 f h z g g l i d . , i t
 g f ; f g g h l b y ; m i r a f ;
 \$ b a i t a h d i t a h d , u z L
 , w f i f f i s
 n f h z i i t a h f f h z g g l i J .
 , t ; t b t j j i d
 m i k j j t u h d R N t l d ;
 N g h h f ; j d d h y ;
 c U t h f ; f g g l i
 , a e j p u k h d J > g w f f
 t Y t w w J v d
 c z h e J n f h z i N g h J k >
 m t h ; m t ; t h w h d n j h U

t i k h d m i k g n g h d N w
 g w g g j w F j ; j F j p t h a e j J
 v d K d n k h o p e j h h ;
 18 M k ; E } w w h z b d ;
 g w g F j p a p y >
 N r h ; N [h h ; ; n f a N y a ;
 v d g t h ; K j y h t j h f g w j j y ;
 n g s j f f t p a y ; g w w p a
 K i w a h d M a n t h d w p i d
 M u k g j j h h ; , j d ;
 n j h l h r r p a h f n t t N t W
 M a t h s h f s ;
 t h D } h j p a h d w p i d
 n t w w p f u k h f c U t h f f
 K a w r j j h h f s ; v d p D k ;
 m i t m t h f s ;
 v j p h g h g g p i d e p i w T
 n r a a f ; \$ b a d t h f
 , U f f t y i y .

N r h ; N [h h ; ; n f a N y a r d ;
 g w j j y ; c g f u z k h j p h f s ;



19 M k ; E } w w h z b y ;
 c U t h f ; f g g l i n y g w j j y ;
 c g f u z k h j p h f s ; , i t .



F w g g p l L f ; \$ W N t h k h a p d >
 N [h k d p e h l i l r ; N r h e j
 x w & y p p e j h y ; (O t t o
 L i l i n t h a l) v d g t h > t h D } h j p
 c U t h f ; f j j p w F g ; n g U k ;
 g q f s p g g p i d r ; n r a j p U e j h h ;
 , t h > 1889 , y ; j d J
 t h D } h j p c U t h f ; f k ;
 n j h l h g h d
 M a t w p f i f n a h d w p i d
 n t s p a p i J k l i L k d w p
 V w j j h o 2500 w F k ; N k w g l i
 v z z p f i f a h d g w g G
 t b t q f i s
 t b t i k j j p U e j h h ; N k Y k ;
 m t h ; j d J M t z q f i s
 M t z g g l j j p
 i t j j p U e j J l d > j d d h y ;
 c U t h f ; f g g l i t b t q f s p d ;
 G i f g g l q f i s A k ;
 M t z g g l j j p a p U e j h h ; , t ;
 M t z g g l j j N y g r d d h ;
 i u l ; r N f h j u h f s h y ;
 c U t h f ; f g g l i n t w w g ;
 g i l g g w F t o p r i k j j J
 v d y h k ;

t i k h d g ; g a z k n j h l U k ;

World's Most Dangerous



Lukla Airport

in Nepal

. j kaf; dgmm<

kef. kyr fkmnd, fhamsygd ; fnk
 'l a d . j kaf; dgmm< mQdk j Yfhka
 rg wNHka r . j ka. ukal ghq =
 i |yd fhdod . kkd . j kaf; dgmm<l s
 m<uj tj ri Ū l ÷ uyk ; rKh
 l rk , o Sir Edmand Hillary i y
 Sherpa Tenzing Norgay hk
 mpa , hkafofokdg f. !rj hl a
 j Yfhka2008 ckj dl udi fh\$ fuu
 . j kaf; dgmmf<aku Tenzing-Hillary
 Airport hk kñkafj ki al rk , È'



Airports



uyyü uÜgfi i g by<ka myá . j kaf; dgq< w; r f; j k i a dkh 'l a d . j kaf; dgq<g yñ k w; r fuh uyyü uÜgfi i g ógr 2860 l Wi l kamygd ; fí ' th uyyü uÜgfi i g by<ka myá . j kaf; dgq< j kfkafnÜ foá fha . j kaf; dgq<hs foj k i a dkh yñ j kfkafnd, úhdfö . j kaf; dgq<ghs th uyyü uÜgfi i g ógr 4061 l amuK by<kamygd ; fí ' f, dá fhaj vd; awk; fe nyq . j kaf; dgq< w; r mli a dkhl a' l a d . j kaf; dgq<g yñ fõ'

. , a dr úFYá hl afhdod . kñka kmojd we; sfuys . j kam: h È. kaógr 527 l aj k w; r m<, kaógr 20 l afö' 'l a d . j kaf; dgq< fy, fl dmq% f. dvni j k i a dkhl kó i uká; j k w; r th mDdk md, l ueÉBfhai g ógr 150 l a muK yBkamygd we; ' uyyü uÜgfi i g by<ka myá . j kaf; dgq< w; r f; j k i a dkh 'l a d . j kaf; dgq<g yñ k w; r fuh uyyü uÜgfi i g ógr 2860 l Wi l kamygd ; fí ' uyyü uÜgfi i g by<ka myá . j kaf; dgq< j kfkafnÜ foá fha . j kaf; dgq<hs foj k i a dkh yñ j kfkafnd, úhdfö . j ka

f; dgq<ghs th uyyü uÜgfi i g ógr 4061 l amuK by<kamygd ; fí ' f, dá fhaj vd; a wk; fe nyq . j kaf; dgq< w; r mli a dkhl a' l a d . j kaf; dgq<g yñ fõ'

fuu . j kaf; dgqf<aku fj ki aj g o ; j u; ath mli a Wi q kfkafnÜ l a d hk kñks fuhg mDdk; u fya j l a ù we; f; atj ri ù l ko ; rKh l f u g meñFK k fndfyda fokd ; u . ukawdri N l rkfkafuu i a dkfhkaúuhs úFYá fhka Twin Otters i y Dornier Do 28 j eksmlDk fhka l vd . j ka hkd nyq j u fuu . j ka

f; dgq< Ndú; hg . khs Èkm; du mdfya . j kaj dr úYd, mliDKhl al ; uKavqyd 'l a d . j kaf; dgq< w; r i yfö' thg mDdk; u fya j ù we; f; a 'l a d . j kaf; dgq< wj g mBi rfhawe; si kór; j hhs fi j k úg fkm, fhawNHka r . j ka. ukafÉ ; fhaj eo. ; a i kái a dkhl anj g m; j we; s 'l a d . j kaf; dgq< tj ri ù l ÷ mfoá fhai kór; j h ú l . ekúg meñFK k úfoá hka f. o buy; amli dohg m; j we; '

rYñ wfi fi d r ●



f, dd . ජ kafi ජ d b; sydi h

^4 j k fl dgi &

mi q h l , dmfhka.....

m<uqf, dd i x. &uh; ai u. . ජ kahdkfhaohdKj

. ජ ka; eme, am%dykh

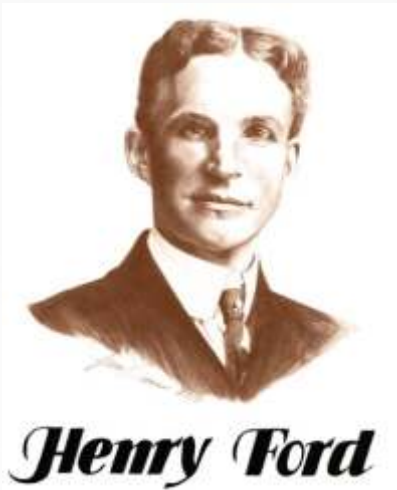
m<uj k f, dd hpdh yd foj k
f, dd hpdh ^1918-1939% w; r
l d, h . ජ kahdkd ; dE K fha
l emsfmfkK j %OKhl a
oel . ; yel sj Ql d, hl s wvq
n, hl kahq a j Qhq , mhdM; a

i ys (Biplane) . ජ kahdkd
fj kj g jeä n, hl kahq a
we"ñkñi j , kakmoj k , o
; ksmhdM; ai ys . ජ kahdkd
(Monoplane) kmouu wdri N
úh'

i |yd uQ d j l %hd l rk , E'
1926 § jdKc . ජ kamk;
'Air Commerce Act) i i u;
úu; ai u. . ජ kaud%
(Air Routs) m% dYhg m; al s u,
. ජ kai x; rK moD; s
'Air Navigation Systems) j eä
ohKql rñ, . ජ kakhuqi y
. ජ kahdkd n, m; %Kd ÷ al s u"
wk; Æe úu%YKh
(Accidence Investigation)
i |yd kS sn, d; ul l s fi
l ghq =i ýúh' tfuka fuu
mk; u. karch jdKc . ජ ka
. ukafl frys fhduquu yd
fm!oa , d . ජ kafi ජ dj kays
khduk (Regulator) l ghq =

. ජ kafi ජ dj g wj YH kS s
n, d; ul l s fuu l d, i s dj
; < wdri N úuo ; j ; aj eo. ; a
i ýúul s 1925 oSweuBl d tl á ; a
ckmo fl dx. %auKav, h . ජ ka
; eme, am%dyk mk;
(Air Mail Act) wkq; l rk , o
w; r we. t. c ckdEm; s Calvin
Coolidge úi kacd; d . ජ ka
fi ජ d m% m; a hl awe; d s u





Henry Ford

l rk , È' fudg% r:
 Kd mdol fhl =j 0fyk8 f*dâ
 (Hendri Ford) úi ka1925
 Ñl df. dai g fâÜfrdkai y
 l j , kâ ol j d . j ka; eme, a
 m%dykh l sf fi whs h , nd . ; a
 w; r 1927 § Tyq. j kahdkd
 kmoúug fhduúh' Tyqúí ka
 kmoj k , o Ford Trimotor
 . j kahdkh . j ka; eme, a
 m%dykhg wu; rj u. Sm%dykh
 i |yd o fhod . ; am% u . j ka
 hdkh f, i ye|kúh yel h'
 j dkx . j kal ghq =i |yd
 úúOdl drfham%fhá K . j ka
 hdkd kmoúu o fuu
 l d, j l j dkj ; < i ý l rk , È'



weuBl dkqcd; d . j kakhuq
 pd, á a, kn%. a
 (Charls Lingburg) úi ka1927
 uehsui 20" 21 Èkhkayos
 w; a dka d ai d. rh yryd
 kôfhðl ai g meBi aol j d
 i e; mîj 3600 l a (5800Km)
 mhdi r l f u; ai u. Tyq
 weuBl dkqûrfhl =nj g m; aúh'
 fuh , kn%. aúí ka, enl
 ch. %Khl amuKl afkdj
 . j kafi j dj úi ka, nd . kkd
 , o w; úYd, ch. %Khl aúh'

weuBl dkqcd; d . j kakhuq
 pd, á a, kn%. a (Charls
 Lingburg) úi ka1927 uehsui
 20" 21 Èkhkayosw; a dka d a
 i d. rh yryd kôfhðl ai g
 meBi aol j d i e; mîj 3600 l a
 (5800Km) mhdi r l f u; a
 i u. TyqweuBl dkqûrfhl =
 nj g m; aúh' fuh , kn%. a
 úí ka, enlch. %Khl a
 muKl afkdj . j kafi j dj
 úi ka, nd . kkd , o w;
 úYd, ch. %Khl aúh'



Charles Lindbergh

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1934 § weuBl dkqckdêm; s
 *eká a karEi f j , ú
 (Franklin Roosevelt) úi ka
 fm!oa , d i ud. i úi ka
 fufyhj kq, enl. j ka; eme, a
 fi j dj kawj , x. =l < w; r ta
 i |yd yuðd . j kakhuq ka
 fhod . kkd , §' kuq ayuðd
 . j kakhuq kg . ukauð%. yd
 l d<. Kd ; j kyre úu ki d
 . j kawk; Æe i ýúu nyq úh'



Roosevelt 1933-1945

ඉඩිව්කර



. ʃ kahdkd b, ä'ug i ß, k
kmoüi' i ŷ l ʃ fi oš. ʃ kahdkd
i ud. i j, g úúO wNʃhda j, g
uyʃK Ńug i ŷ úh'. ʃ kahdkd
nßkawvj jeä fö. hl ai ys j
kmoüu fuka kthuql á
Wml rK jeäEhʃKj j vd kj erĒ
; ; ʃ fhamʃvk, Wi, fö. h,
. Kkh l ʃ fi Wml rK kmoüu
fi l d, h ; < i ŷ úh' fʃäfhda
i xj do jeäEhʃKqúuo i ŷúh'

fndhx i ud. u úi ʃka1933 ʃ i h
kük u. S. ʃ kahdkh j k
fndhx 247 kmoj k, Ē'. ʃ ka
hdk fhan|g my<kamhdm; a
i ys úu" yel ʃ h yel ʃ frdö"
tkökafol l kai uká; úuo
fuysúfYá ; ʃ hl ʃ fuu . ʃ ka
hdk fhysoł ʃ kg, enʃq; j ; a
úfYá ; ʃ hl aj ʃ hau. ʃka

oi fofkl =/f. k hdfi
myi ʃ u mej ; Ńhš fuysfö. h
mehg i e; miʃ 155 l aúh' fndhx
247 . ʃ kahdkh u. ʃ kg, nd ýka
myi ʃ i f, i tköfi Yí oh
. ʃ kahdkh we; <g me; ʃ u wj u
úu" WK ʃ i c, h, nd . ekŃug
we; syel ʃ dj" l ʃ kal rk, o
wdi k myi ʃ i mej ; Ń oel úh

yel ʃ káuh yel ʃ h' fndhx 247 yd
DC-3 . ʃ kahdkd k ʃ udK fha
l emšfmfk k bĒß. ukl awe; s
l ʃ u i |yd odhl úh' fuu
. ʃ kahdkh wä 10"000 g j vd
by<kamhi r l ʃ ug fkdyl sj 0
w; r thg fya =j ʃ hawvqmʃvk
; ; ʃ hkq Tfrd; a =fkDsu yd
Tl á ʃ kawvqúu fya =fl dg



yel ʃ h' fndhx i ud. u úi ʃka
kmoj k, o DC-1 hdkh u. ʃka
12 fofkl g myi ʃ i i emh0
w; r bkami j kmoj 0DC-3
hdk fha u. ʃka21 l a/f. k
hdfi myi ʃ u mej ; sw; r j vd
wdrĒ ʃ . ʃ kahdkhl aj Yfhka

f. k u. ʃ kg wmyi ʃ dj kg
uyʃK Ńug i ŷ úuhs bka
wk; ʃ ej wvqmʃvk ; ; ʃ hkq
Tfrd; a =fok f, i mhi r
; ; ʃ hkaj eä EħʃKql ʃ u
fl frysmĒ K ; j ýrg; ai ŷ
l rk, ʃ'

pkĒud fl dá; ʃ l á ●





. ජ කා ර

fj í wvúh

wka ¾cd, hg

www.guwansara.lk

Y%, xl d i ú, a. ජ කා ෆි ජ් ද වෙලි දබ් ඩි කා ෆ් මර් ජ් දබ් ඩි
 23 ජ් කොඩ් . ජ කා ෆි ජ් ද ෆී ; ක් මෂ් ත් | ෆ් ; ධ් ; ෆී ෆී ; < ; a
 wOHdml ජ් දබ් ඩි wvúh | a-. ජ කා ර් ක් ක් ක් < ට් | ජ් ක් , oš
 -. ජ කා ර් ෆ් දබ් ඩි wvúh wka ¾cd, hg ක් ද් ÷ a | ජ් ද
 ෆ් මර් ජ් දබ් ඩි 23 ජ් කොඩ් ^23'02'2011& ෆ් ද < U 02" . ක් ක්
 TBhk ෆ් , a ෆ් ද ෆ් , ෆ් ෆ් (Grand Oriental Hotel) i ú, a
 . ජ කා ෆි ජ් ද වුද ; H . re ම් ත් x | ර් ජ් ර් ; ක් ෆ් ; s ෆ් ද ෆ් . a
 ම් ද ෆ් ; ජ් ෆ් කා ම් ; ජ් ක් , S'



i ú, a. † kafi j d wêl dBFhã
 i ú, a. † kafi j d i xj %OK i y
 wOHdmkđ td l h úi †ka
 k%udKh l r we; sfuu fj í
 wvúh i xy, i y bx. %shk
 udOH fol u Ndú; l r yel s
 whßkai l i a l r ; ſ u
 úFYã ; j hl \$ mDdk fl dgu Y%
 , xl dfõ . † kafÉ ; % msn|
 fkdoekj ; auy ck; dj i y fi
 msn| WkKjy l aol j k mdi , a
 i ſ qorej kab, a l l r . kñka
 i l i a l r we; sfuu fj í wvúh
 Y%, xl d i ú, a. † kafi j d
 wêl dBFhawOHÉ fckrd, ayd
 mDdk úOdhl kš Odí tÉ tí i S
 ku, á B uy; df. awkQdi l ; j h
 hgf; ai ſ l rkq, nhš úfoA'hka

ys. † kafi j d fÉ ; % msn|
 l reKqwe; <; abx. % sudOH fj í
 wvú fndfyduhl amej ; Ko Y%
 , xl dj ; < tu wvj ; j u; a
 mj ; S ful Si h' l reKq
 i e<l š a g . kñkai ú, a. † ka
 fi j d wêl dBFhã i ú, a. † ka
 fi j d i xj %OK i y wOHdmkđ
 td l h úi †kai xy, i y bx. % s
 hk udOH fol u uQđ l r
 . kñka. † kafi j d fÉ ; %
 msn| Y%, xl dfõ m% u fj í
 wvúh -. † kã r~ kñkawdri N
 l r we; '
 fuu wj i a dj g md%, ſfi ka =
 uka %. re wreKÈl m%dkj
 ue; \$ eud i ú, a. † kafi j d

úfoA'hkays. † kafi j d
 fÉ ; % msn| l reKq
 we; <; abx. % sudOH fj í
 wvú fndfyduhl a
 mej ; Ko Y%, xl dj ; <
 tu wvj ; j u; amj ; S
 ful Si h' l reKq
 i e<l š a g . kñkai ú, a
 . † kafi j d wêl dBFhã
 i ú, a. † kafi j d i xj %OK
 i y wOHdmkđ td l h
 úi kai xy, i y bx. % shk
 udOH fol u uQđ l r
 . kñka. † kafi j d
 fÉ ; % msn| Y%, xl dfõ
 m% u fj í wvúh
 -. † kã r~ kñkawdri N
 l r we; '



wud; HxYfhaw; f%l f, d' i wd%
 ti ti amSr; kdhl uy; d' . f ka
 f; dgm< yd . f ka fi j d
 i ud. fi Wm i Ndm; sl u, a
 r; j ; a uy; d' i s, a. f ka fi j d
 wOHÉ ckrd, atÉ ti i S
 ku, á B uy; d' i s, a. f ka
 fi j d wél dBfha ks Odí ka
 . f ka fi j d l %udka fha
 khq f j ká úyy, m; j reka
 fuka mdi e, ai s qi s qhka
 udOHfóSkawe; = wdrdê;
 wuq a kaÚYd, mSi l ao tl úh'

fm'j' 11'26 g fhS ; nli N
 fudfyd; ka. re mhxl r chr; k
 ue; s ud w; ka. f ká r fj í
 wvúh wka %cd, hg ká ÷ al rk

, o w; r fuyS wud; H; ud i h
 woyi aol j nkal hd i áfhai s, a
 . f ka fi j d wél dBfha-i s, a
 . f ka fi j d i xj %Ok i y
 wOHdmk td l h' u. ka
 i xúOdkh l rkq, nk mdi e, a
 i s kaokj ; al s fi j evi gyka
 . f ka fi j d fÉ ; %h m&n|
 f; dr; fe we; <; a-. f ká r
 ff; %di s i Ördj fuku
 . f ká r fj í wvúh o l d, k
 wj YH; dj l aj k nj ; ai s, a
 . f ka fi j d wél dBh úi ka
 wk d. ; mrmq Wfoi d i h
 hq ÷ u fkdmbfy, d bgql rñka
 mj ; k nj ; h' ; j yrg; awoyi a
 ol j nkat; ud mj i d i áfha
 fuj eks l ghq =i u. kaY%

, xl dj g f, dá h; ai u. Wfrka
 Wr . eaug wj i a dj , efnk
 nj ; atu. kakýre wk d. ; fh&u
 Y%, xl dj wdi hdfó . f ka
 fl kbi a dkhl anj g m; al <
 yel snj ; h'

Èi a % d l ymhl u mej ; s
 mdi e, ai s kaokj ; al s fi
 j evi gyka l yd i h i fÉÉcd
 odh; j h i emhú m s dka fi kl d
 m%dký uy; ñh' táj á
 fmf%rd' fl d, k a fmf%rd i y
 ; s l aÈi dk dhl hk uy; j reka
 w. hñkaTj k a f j ; i ure ; k
 mSkeóuo wud; Hj rhd w; ka
 i yúh'

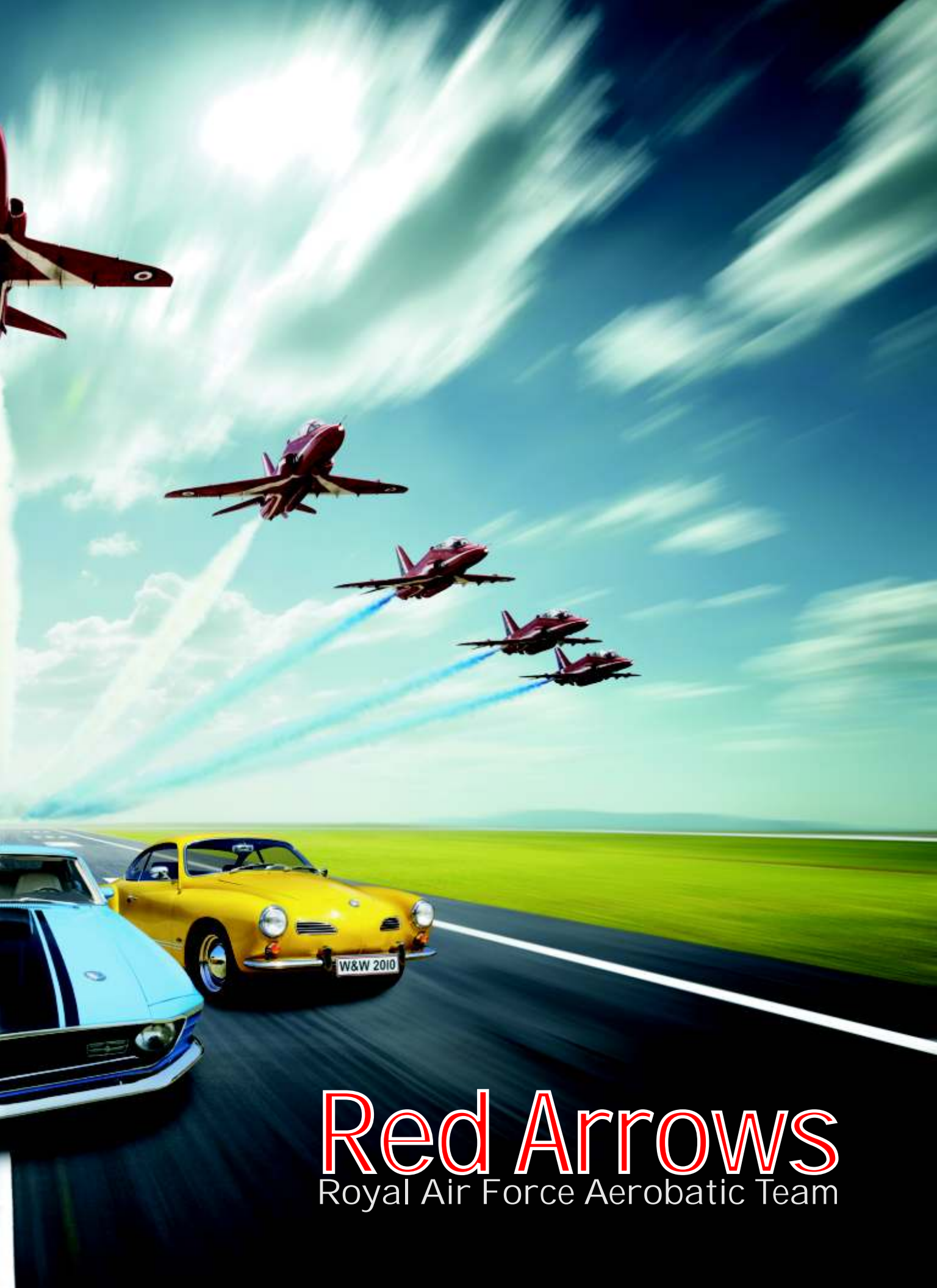




j evi gyfkaúfYđ wj i a d







Red Arrows

Royal Air Force Aerobatic Team



. j kal rKi i xo¼YK
 Ti fi ai h ul hkhkabEßM; a
 l rkq, nk Red Arrows ki
 f, dj i qnß . j kal rKi
 l Kavdhu . j ka r ux. ,
 l , dmfhkao Tng y=kj d
 ýkaw; r mdi , ai i ka
 j eáfokl f. ab, a ß u;
 . j ka r i öj k l , dmfhkao
 kej ; Tj kamsn| j eähul a
 i gyka; eī ug woyi a
 l f<uq

Red Arrows fyj ; ardcl h
 . j kayupdfö ks . j ka
 i xo¼YK l Kavdhu j ¼l
 1964 oßwdri N l r we; s
 w; r mßdk . j kakhuj ka

Red Arrows fyj ; ardcl h
 . j kayupdfö ks . j ka
 i xo¼YK l Kavdhu j ¼l
 1964 oßwdri N l r we; s
 w; r mßdk . j kakhuj ka
 09 fofkl f. kayd i ydh
 i dudöl hka91 fofkl f. ka
 i uká; fö' Tj kf. aks
 , dxPKh ; < we; sEhuka s
 yevh . j kahdkd 9 l ka
 oel fj k w; r th Tj kf. a
 fj <| i , l K o fö' r; =
 i y i ý Tj kf. ardcl h
 j ¼K f, i Ndú; l r we; '
 ; j o "Éclat "ki m%Y kduh
 Red Arrows yswdo¼Y
 mdGh j k w; r thka
 -úYg; j h hkk w%:
 oel fö'

. j kakhuj ka09 fofkl f. ka
 yd i ydh i dudöl hka91
 fofkl f. kai uká; fö'
 Tj kf. aks , dxPKh ; < we; s
 Ehuka syevh . j kahdkd 9
 l ka oel fj k w; r th Tj kf. a
 fj <| i , l K o fö' r; =i y i ý
 Tj kf. ardcl h j ¼K f, i
 Ndú; l r we; ' ; j o "Éclat "ki
 m%Y kduh Red Arrows ys
 wdo¼Y mdGh j k w; r thka
 -úYg; j h hkk w%: oel fö'
 uq al d, fhß fudj ka
 Follang Gnat kue; s. j kahdkd
 07 l ka; u i xo¼YK bEßM; al <
 w; r tu hdkh ñf, kawvqi y
 kv; a j g myi qtl l s hfrdmh
 j gd . j kai xo¼YK 65 l amuk



meje; ùfukawk; #ej Tj ꙑa; u
 i dudōl hꙑai xLHdj 09 ol j d
 jeä l rk , oꙑoaby; l s
 Tj ꙑa. aks Èhuka syevh jeä
 Èhꙑql ꙑug jeä hdkd
 mꙑdkhl awj YH j 0neúks j ¼l
 1979 ꙑ Tj ꙑa Red Arrows BAE
 Hawk kue; shdkh Ndú; hg
 . ; y' Red Arrows fi j k úg
 f, dj mꙑd rgj , a53 l muK
 i xo¼Yk j dr 4000 l g wdi kꙑ
 mꙑdkhl amj ; j d we; sw; r ; u
 yel hꙑj kayd oÈ ; d u. ka
 fmÈ l hkauú; hg m; al ꙑug
 i u; j we; '

rdcl ꙑ . j kayupdfj ys. j ka
 i xo¼Yk l Kavdhi i |yd
 mj ; kꙑkaꙑ> b; sydi hl ꙑ j ¼l
 1920 kawdri N j 0fuu
 b; sydi fham% u j rg Tj ꙑal vꙑd
 Biplane hdkd Ndú; fhkaj ¼l
 1920 oꙑHendon yꙑ W; á dy orÈ
 w; r j ¼l 1938 ꙑ l vꙑd Gladiator
 hdkd ; kꙑl ab; d wdi kꙑfhka
 mhdi r l ꙑu; ai u. . j ka



j ¼l 1950 ꙑ rdcl ꙑ
 . j kayupd fkd 72
 n, weKꙑ Vampires
 j ¼. fha. j kahdkd
 u. ka i xo¼Yk
 l Kavdhul ak¼udK h
 l < w; r fkd 54 j k
 n, weKꙑ th jeä
 Èhꙑql rñkam% u
 j rg yi Ndú; fhka
 (Smoke trails)
 i xo¼Ykhl abÈBm; a
 l ꙑug i u; aúK'



i xo¼Yk l Kavdhul amyꙑꙑug
 Tj ꙑaúí ka; ꙑK h l rk , È'
 kuq afoj k f, dā hꙑ i uh; a
 i u. fuu ; ꙑK h hgm; aúh'
 j ¼l 1950 ꙑ rdcl ꙑ . j kayupd
 fkd 72 n, weKꙑ Vampires
 j ¼. fha. j kahdkd u. ka
 i xo¼Yk l Kavdhul ak¼udK h
 l < w; r fkd 54 j k n, weKꙑ
 th jeä Èhꙑql rñkam% u j rg
 yi Ndú; fhka (Smoke trails)
 i xo¼Ykhl abÈBm; al ꙑug i u; a
 úK' mi j Vampires hdkd bj ; a
 l r Meteors keu; shdkd
 Ndú; hg . ; a kuq a1955 j i f¼ ꙑ



fkd 66 n, weK h u. ka tu
 hdkdj o bj ; d r Hunter
 j ¾. fha hkd Ndú; hg . k&sd
 , È' tai u. u j ¾l 1956 §
 khñ; meyh kai u. hdkdj
 uq' uk&ku l ¾ j ¾K fhka
 wdf, m . k&j k , È' tai u. u
 m%Yfhamej ; si xo¾YK
 j drhl &awk; fej i h kduh
 The Black Arrows kñka
 fj ki al rk , o w; r j ¾l 1958
 § fudj &ka Farnborough . j ka
 i xo¾YK fha § Hunter hdkd 22
 l ai u. kai ý l < wdl ¾l K h
 bÈBm; al &u f, d& j d¾; d
 w; rgo tl úh' fi i h, a fkd
 111 n, weK h u. kai ý l <
 w; r tu j l j dkfõ§u fkd 92
 n, weK h u. ka The Blue
 Diamonds kue; si xo¾YK
 l K&dhul aby; j ¾. fha k&s a
 meye; s Hunter hdkd 16 l &ka
 wdri N l rk , o f&aj ¾l 1961
 §h' kuq abka. j ka khuj ka
 úYd, m&udK hl f. al d, h
 wmf; ahk neúka 1964 j i f¾ §
 yellowjacks kñka k&s ameyeh

l y meyh nj g m; al r . kñka
 tl ai xo¾YK l K&dhul a
 myg&ug rdcl h . j kayu&dj
 ; &K h l rk , È' tfy; al y
 meyh by< wyfi & fmk&u wvq
 neúkar; =j ¾K h Ndú; l &ug
 Tj &ami j ; &K h l rk , È' tu
 ki d i xo¾YK l K&dhfi k&s
 kduho j ¾K h u; fj ki aúh
 hq =neúka Red yd w; § fha; n&l
 Black Arrows ys Arrows hk
 j pk i u. The Red Arrows
 f, i kai xo¾YK l K&dhul ki
 l &ug rdcl h . j kayu&dj
 j e&yr; a; &K h l rk , È'

Red Arrows ysm<uq l K&dh'i
 kdhl hd f, i l ghq =l rk
 , o f&an, >k kdhl
 Lee Jones h' Red Arrows i h
 m%u . j kai xo¾YK h 1965 uehs
 06 j k Èk tx. , ka fha Little
 Rissington y& i ý l rk , o
 w; r i xo¾YK j dr 65 l a
 ì %dkh" m%Yh" b; d, h"
 fko¾, ka h" c&ukh yd
 fn, ðhu hk rgj , i ý
 l &fukami j Britania kñka
 i i udkhl ao Tj &g yñ úh'

j ¾l 1968 § tyskdhl hd Ray
 Hann f, i m; j &w; r Tyq
 úi &amej ; shdkd m&udK h 7
 i g 9 ol j d j e&l rk , o& bka
 wk; fej tu hdkd 9 u. ka
 Èhuka syevh k&rEmK h
 l &u; ai u. u Tj &f. afj <|
 i , l & th úh' Folland Gnat
 hdkdj i xo¾YK j dr 1292 l g
 Ndú; l &fukami qtu
 hdkdj g úY&u §ug Red
 Arrows ; &K h l <y' j ¾l
 1979 kami j Tj &ka BAE Hawk
 j ¾. fha hkd Ndú; l &u
 wdri N l rk , o w; r tu
 hdkd u. ka Tj &ka fi ol j d
 rgj , a50 l muK i xo¾YK
 bÈBm; al &ug i u; j we; '
 Red Arrows ysm&dk
 u&l i a dkh fi j k úg
 Waddington ysm&gd we; sw; r
 1996 mgka Red Arrows
 j i rl g . j kai xo¾YK j dr 9
 l amuK mj ; j kq, nh&s Red
 Arrows . j kai xo¾YK
 l K&dhul i u. i i nk& ùug
 ki . j ka khufj l =wj u
 j Yfhka f& . j ; am&ydr l hdkd



j k Tornado, Harrier i y Jaguar j ekshdkhl m̄hdi r meh (Flying Hours) 1500 l a muK i i m̄K l r ; i h hq fō' Bg wu; rj ; j ; a i ŷi q i 10 l g wdi k k m̄Khl ai < l d ne, ū Red Arrows ysi ūfYā \$ j hhs . j ka khuj l f. ak\$ l d, h j i r 03 l g i ūd j k w; r i Eu j i r l u . j ka khuj ka ; fofkl =fj ki afō' óg wu; rj Red Arrows i |yd w; f%l khuj kō fkdue; s ūu ; j ; a ūfYā ; j hl \$ w; Hdj YH wj i a dj l \$ j j o i ŷi q i fkdue; sm̄pa , fhl g Red Arrows ysi xo%Yk wj i a dj fkd, efí' l i h i wj i a dj l \$ khuj ka09 fokdf. katl awfhl g m̄hdi r l ūg fkdyl sj j fyd; a khuj ka08 fofkl f. ka

bÈBm; al rk úfYā i xo%Ykhl aRed Arrows ūi ka i ŷi l r h s i h i u khuj kaRed 1 i g Red 11 ol j d k i fl frk w; r fuys Red 1 fyj ; akdhl hd yg i xo%Ykh i |yd i yNd. Sūug fkdyl sj 0 ūg tu i xo%Ykh wj , x. = l r h s ; j o i xo%Ykhl a ; < l i ŷi khuj l f. awod< i a dkh l i ŷi fya j l au; fj ki a fkd fō' fuy\$ Red 10 khuj d ud%. h md, kh l rk w; r kr; fej u m̄dk md, l uOH i a dkh i u. f; dr; fej yj udre l r . k s tfuka i xo%Ykh w; r; f\$ PdhrEm . ekū fuka rE. ; l ūi o Tyq w; kai ŷi fō' The Blues kñka yečkfj k Red Arrows ys bxcdfkre n, l dh 85

fofkl f. kai uká; j k w; r bxd fkre l ghq =j , \$ i h i l d%hhkaTj fka ūi ka i ŷi l rkq, nh s Red Arrows i h m̄yKql ghq =j , \$ fl d< meye; swe=ul aNdú; l rk w; r i xo%Yk wj i a dj , \$ muK l ai h i m̄pey r; =we=ul Ndú; l r h s

j%l 2009 uehs13 j k Èk Red Arrows l Kwdhug i ūfYā SÈkhl aj fhai h \$> b; sydi h ; < m%u j rg l dka d khuj Bhl aTj kai u. w; j e, a ne|. ekū fya f j k s weh kñka . j ka khuj ; kka Kirsty Moore h' weh 1998 o s rdch . j kayu d j g tl j we; s w; r 2011 j i r i |yd Red Arrows l Kwdhfuy s Red Five i a dk fhal ghq =l r h s



Red Arrows ysm̄dk uq i a dkh fi j k ūg Waddington ysm̄ygd we; s w; r 1996 mgkaRed Arrows j i r l g . j kai xo%Yk j dr 9 l amuK mj ; j kq, nh s Red Arrows . j kai xo%Yk l Kwdhu i u. i i nkD ūug k i . j ka khufj l =wj u j Yfhkafō. j ; am̄ydr l hdkd j k Tornado Harrier i y Jaguar j ekshdkhl m̄hdi r meh (Flying Hours) 1500 l amuK i i m̄K l r ; i h hq fō'



BAE Hawk hdkh Red Arrows
 oekg i xo%YK i |yd Ndú;
 l rkq, nk . j kahdkh . j ka
 i xo%YK i |ydu úfYd fhkau
 kmoj @hdkdj l aj k w; r th
 m%, Eurofighte Typhoon hdkd
 . khg wh; a fõ' Wmßu fõ. h
 1037 Km /h j k w; r È. 11.5
 m o Wi 4 m o fõ' Rolls –
 Royce Adour Mk 151 j %. fha
 tkõul a fi i |yd Ndú; l rhš
 ; j o C 130 Hercules j %. fha
 hdkhl aw; s%l m%dyk l ghq =
 i |yd fhdod . kš

(Smoke trails) mgl š u i h'
 fokdf. awl %YKhg , l j k
 wfkl ÷ a fya j hš fi i |yd
 Tj kããi , abkøk h Ndú; l rk
 w; r hdk fhamgmi mgj ug
 (Exhaust) ãi , aúš u. kai ŷ
 meye; sŷu , nd . k hš wj YH
 j %K i |yd j %K tl al rk , o
 ãi , aNdú; l rhš Hawk hdk fha
 hõuh l ghq =j , š 30 mm
 j %. fha Cannon wúh /f. k
 hk i a dk fhaŷi i |yd Ndú;
 l rk ãi , agexl s/f. k hk
 w; r . e'ĩ 50 l i ŷ ãi , o
 . e'ĩ 10 ne. š kaj ųr; =i y kš a
 j %K . ekj ųãi , agexl s fi w; r
 fõ' ñks a j l g ŷi mgl š u

i |yd j ehj k bkøk . e'ĩ
 i xLHdj 10 l š fi wkj tl a
 j drhl š i ŷ ŷu ñks a =5 l o
 r; =yd kš aŷu ñks a j ne. kao
 Tj k g bÈBm; al < yel h'
 Red Arrows i h i xo%YK
 l ghq =j , š l š úfgl ; a
 krUkkkg by<kamhdi r
 fkd l š u Tj k ai ; =; j ; aúfYd
 . k dx. hl š ; j o i xo%YK
 bÈBm; al š u i |yd j <dl =
 uŪgu fmd<fõ i g wã 4500 g
 j vd by<ka; š h hq =w; r wã
 2500 g j vd wvqki Tj k a; ,
 i xo%YKhl a (Flat Display)
 bÈBm; al rhš

රතු පිහිටි Red Arrows i h . j kai xo%YK
 w; r; € hdkd u. kaiŷi



úfYá i ýüi l symhl aw; frka
 j ¾l 1980 § Sussex ys i xo¾YK
 j drhl aw; r; fr § Hawk
 hdkdj l akej l rej , l . eà
 úkdY ü we; skuq akhujd
 hdkfhka kremø j bj ; j
 we; ' ; j o 1987 o smyK qii
 w; r; fr § hdkdj l a Lincolnshire
 yskj i l g l vd jeà we; sw; r
 khuj kafofokdu hdkfhka
 bj ; j we; ' bkØK gexl s
 mmreul ka 1988 cks 24 j k
 oko hdkdj l a úkdYj w; r
 khuj ka tu wj i a dföøb Èú
 . , j d f. k we; ' 2007 j i f¾šo
 Tj k f. a hdkd fol l a tl g



fkdyl j hdkfhka Tyqbj ; j
 we; '



Red Arrows i h
 . j kai xo¾YK
 w; r; fr hdkd u. ka
 ýi (Smoke trails)
 mgl í u i h
 fokdf. awdl ¾Ykhg
 , l j k wfkl ÷ a
 fya j hš fi i | yd
 Tj ka ai , abkøkh
 Ndú; l rk w; r
 hdkfhm gmi
 mgj ug (Exhaust)
 ai , a úš u. kai ý
 meye; syu , nd . khš
 wj YH j ¾K i | yd
 j ¾K tl al rk , o
 ai , a Ndú; l rhš



. eà u fya fj ka úkdY j Økuq a
 Óú; ydksi ýü fkdue; '
 uE; l § i ý j úfYá i ý üul a
 f, i Hawk hdkd fol l a myK q
 üi w; r; fr § tl g . eà Red 7
 hdkfhai á ; k kadavid
 Montengro hdkh ki smBÈ
 f. dv nei á j Ø; awfkl a hdkh
 j Ø Red 6 ysi á ; k ka Mike
 Ling yg hdkh md, kh l í ug

Red Arrows úi kaj ¾l 1973
 cks 13 j k ÈK Lisbon ysmej ; s
 i xo¾YKh i | yd oekg i yNd. S
 we; sby < u fmÈ l mBi l a
 650,000 l g wèl mBi l a
 i yNd. Sù we; ' úfYá fhka
 j ¾l 1995 Red Arrows i xo¾YK
 j dr jeäfhka i ý l rk , o
 j ¾l h f, i o 1973 bkØK
 w¾nph fya fj kawj u i xo¾YK
 m¾dKhl ai ý l rk , o l d,
 j l j dkj f, i o i | ykal <
 yel '

f, dj ckmlø; u . j kal rKi
 l Kævdhul aj k Red Arrows
 tod fuka wo; a; u i qnyey
 oÈ; d fya fj ka fmØ d l hka
 ; < i od u; l fha/f|k nj
 . j ka r woyi hš úfYá fhka
 Red Arrows b; sydi fhai g fi
 ol j d úúO j Ø l d, dk r Ems
 fj ki á i j , g Ndckh fj nka
 i Ø¾; l . ukl amèñK we; '
 Tj kawfkl ÷ ai h , , a kgu
 l Èu WodyrKhl aj k fka úúO
 j Ø l d, hkg . e < fmk fj ki á i
 Ti fi a fmÈ l hka fj ; < xj
 ; í u fya fj ks
 wYdkafyÜáf. ●

Helicopter

1903 \$ m<uqi d%: l . j kahdkh ^Fixed Wing) kmoj QrhU
i fydorj re Bg fmr fy, fl dmgrhl akmoUu i |yd w; yod
ne, \$ i yl r tu mh; k wi d%: l j Qki d thkan, j ; al <l s ug
m; j fufi amj i k , \$"

"The Helicopter does, with great labour,
only what the Balloon does without labour "



Jan Bahyl

20 j k Y; j %I h wdri Nfha
i gu wm yg i d%: l
fy, fl dmgr w; yod ne, \$
m<n| j d%; d mj ; \$ bkam<uq
jekk" 1901 \$ i f, dj el hdkq
cd; \$ fhl =j k fEkanhs a f. a
(Jan Bahyl) wNHka r oyk
tkou au. kal hnd; ul l rkq
, enOnks karys j
(Unmanned) l hnd; ul j 0
hdkh ogr 1/2 (0.5m) muK
by< ke. snj hs ; j o fudyqtu
hdkh ; j yrg; aEhKql r 1905
uehsui 05 j k Ek ogr 04
^4m) muK by< kxj d ogr
1500 (1500m) muK yrl a
mhdi r l rj k , os

1906 \$ m%Y cd; \$ i fydorhka
fom<l aj k cdfl da ai y 'ui a
n%. U (Jacques and Lovis
Berguet) ui ka fy, fl dmgr
j, N%l ; , (Rotor Blade) ys
yevh (Shape of aero foils for
Helicopters) m<n| \$%> f, i
m%fhd K mj ; j k , \$' tys
m% M, hl af, i j %I 1907
wf. da a =04 ; ai ema ei n% 29 ; a
w; r EkI \$ nki karys j
l hnd; ul j k hdkhl akmoj d

th . j ka ; l rk , \$' hdkh
uQ \$ j ogr 0.6 (0.6m) muK
by< ke. ukda ll amuK
. j fka/\$; nOnj j d%; d fo'
fuh fudyq. hf rda hdkd wxl 01
(Gyroplane No 01) f, i ki
l rkq, ei h' kuq a fuh
w; \$yhku wi a dj r uh' tki
hdk fhafl dkay; rg nks ka
fhdoj d w, a df. k i aug mj d
i yuh'

1907 j %I fh\$u m%Y cd; \$
nhis \$, al d%nl fhl =j k fmda a
fl dkq (Paul Cornu) ui ka
hdkhl ak%udKh l rk , \$' th
wa 20 l E. kahd a j 0
m% ureoD EYdj kg N%K h j k
N%l ; , fol l ka
(Contra-rotating rotors) yd
wYj n, 24 l (24hp)
tkou kahd a uh' fuh 1907
fkdj ei n% ui 13 j k Ek wa
01 (0.3m) muK by< ke.
; ; mr 20 l amuK l d, hl a
. j fka/|Smej ; Ks fuh
j d%; d. ; m% u i ; H khufj l =
i ys hdkh (First truly free
manned Helicopter flight)
f, i y=kj hs fl dkq. afuu

1907 j %I fh\$u m%Y
cd; \$ nhis \$, a
l d%nl fhl =j k fmda a
fl dkq (Paul Cornu)
ui kahdkhl a
k%udKh l rk , \$'
th wa 20 l E. ka
hd a j 0m% ureoD
EYdj kg N%K h j k
N%l ; , fol l ka
(Contra-rotating
rotors) yd wYj n,
24 l (24hp)
tkou kahd a uh'
fuh 1907 fk dj ei n%
ui 13 j k Ek wa 01
(0.3m) muK by<
ke. ; ; mr 20 l a
muK l d, hl a. j fka
/ |Smej ; Ks



Paul Cornu's Helicopter



Pescara's helicopter

hdkh mhj rj , al ysmhl ka
 ÈhKql r wä 6 ½ l amuK by<
 kexüug i l i d . ; yel sj j ; a
 w; Yhka wi a dj r kuej ul a
 kã d w; yer ouk , Š'

1909 osrei hdkqcd; Š whs ¾
 i fl di d s (Igor Sikosky) úi ka
 o fy, fl dmgrh i |yd wdl D; ka
 bÈBm; al rk , o kuq afuu
 hdkd o nBkaj eä" wvqWYj
 n, hl awe; stkðkai y wi a dj r
 ; ; j hkawèl" f, i mej ; Š
 kã d ; u fy, fl dmgrh m<n|
 m¾fhã K w; yer ouñka
 i fl di d smj i d i áfhanBkawvq
 jeä wYj n, hl awe; stkðka
 i y hdkdfõ i el s a kmoüug
 nBkawvqf, dayo" kmqK ; dj fhka
 hq a j 0l d¾ñl Ys mBka, efñk
 f; l a; u m¾fhã K k; r l rk
 nj hš

1912 Š rei hdkqcd; Š fndBi a
 hdfro o (Boris Yure'ev) o 1917-
 1920 w; r l d, fhŠ Ti fU% hdkq
 cd; Š i äj ka fmÜfrdi s
 (Slephen Petroczy) o k¾udK
 bÈBm; al < kuý tj d o
 wi d¾: l úh'

1920 Š wdckãkd cd; Š rE, a
 meg¾i ami d drd (Raul Pateras
 Pescara) úi ka

1. pl Š i a dh\$ dj (Rotational
 Stability of the Rotor Disk)
2. i u wl d Š (Coaxial);
3. m% úreoD ÈYdj kg N%K h
 j k N%l ; , (Contra-
 rotating rotors);
4. hq , mhdm; a. j kahdkd
 N%l j , ti j j ys fj ki aüi
 (Increase and decrease of
 the lift produced by
 advancing and retracting
 blades);
5. . j kahdkhky smd¾l ul
 p, -k (Lateral movements of
 the aero plane);
6. i j hx N%K h (Auto
 rotating);

m<n| uq O¾u bÈBm; al rk
 Š' ; jo mi d drd úi katkðu
 l Šdúrys j k wji a dj l Š
 wdr l d dl dj f. dvni k
 wdl drh m<n| jo úi a r l rk

, Š' fuu uq O¾u Wmfhda S
 l r. kñka 1924 ckj dB ui Š
 mi d drd úi kãkmoj kq, enl
 hdkh (Pescara's helicopter No
 03) úkdã 10l amuK mhdi r
 l < nj g j d¾; d fõ'

1924 ; < j d¾; d . ; j k
 wfkl ÷ amhi eBhka

1. m%Y cd; Š bÜksTi Ñka
 (Etinne Oehmichen) wfm% a
 ui 14 j k ok ógr 360
 '360m) mhdi r l rüh'
2. wfm% aui 18 j k ÈK mi d drd
 úi ka ógr 736 (736m) l a
 úkdã 4 ; ; a 1l amehg
 l f, ógr 13 fõ. fhka ógr
 2l a (2m) Wi ka. ukal rüh'
3. uehsui 4 j k ÈK TÉuka
 Tyf. afoj k fy, fl dmgrh
 úkdã 14 l a; <Š ógr 1692 l a
 ógr 15 l a Wi ka Odj kh
 l rüh' ; jo Tyql só l l
 (1Km) j ghl a (Closed
 Circuit) úkdã 07kai y ; ; a
 40 l kai i m¾K l rk , È'



wj i ka Cj kd dj ud fj kfj ka / l . kka

Crossroads hkqms ; ai udc
fi j d wdh; khl s fuu wdh; kh
i ; =. nvd i xl %K h W; #d hk
; ri i Eu fohl u yd 'kEu
fohl awe; ' fuu i h' u øj H
Woõ m; k 'kEu wfhl ø heuu
i |yd i ðdk' i fl dg we; ' udi
l ymhl g fmr uuo fydxfl dx
ysmyá Crossroads wdh; khg
. h w; r tu i xl %K fhys
j gmødj ud yg b; d yre mpey
i j Ndj hl abi s h' fuh merKs
Kai-tak . j kaf; dgq< nj
tfl fkyu uf. au; l hg
ke. Ks wo th Hong Kong ys
wka %cd; d . j kf; dgq< f, i

kül rKh ü we; '
i ; H f, i gu, ud fuysj rl a
fkdj l ñ j rl u meñK
we; f; ñ' . j kam: wxl 13 ys
fcÜ . j kahdkd f. dvni á j d
we; f; ñ' wä 600 l amrd úi rekq
fl dgqj egqKq; fej . j k foi g
úy\$ we; ' wj i kayerj u we; f; a
wyi i rk ; Ügqkj di
i xl %K hg uol aTí fnks
"i dmhg Tí fnka fu; kka
yefrkK" hkfj kaúYd,
mi q ul b; d meyeE<s; eõ, si y
l y fl dgj , kaol j d we; ' th
l ÷ Yl r j gl rf. k we; ' th
j kdys Kai-tak f, i y÷kj hš

l d<. Khg wem; sfoúj re
Tj kf. aTj kf. aúí s #e
fi , a i' t<ol j oš wmsyfol u
urKhg hg; ahka %t<j kfKda
fj uq th j kdys; ka j l weñKl
rEl vhl ajekh'
kuq afl fi afydaoj i skaaj i
. j kahdkd f. dvni á j ñkauyd
i d. rfha f. dvnei á üug ; ri
w{ dkfhda fkdüuq

Kai-tak wj g wyi meyeE<s
wj i a dj , \$. j kahdkd f. dv
nei á üu b; d wdYj dockl
w; ðel ñl aúh' kef. kyßkayud
tk i qÖ l el Efrñka. j kam:

wxl 13 fj ; keUre fj hš fl dgq
 j egKq; ſej bĒBmi kaĒi j k
 úg wm . j khdkh yrj df. k
 wj q ab; d mĕōi fukayei rúug
 j . n, d. ; uq fuh yBhdI drj
 i ſ fkdj kfyd; amy; kaj Quyd
 i d. rfhamyKúg yel h'
 i Eu . j kaj drhl ſu . j ka
 khufj l =Hong Kong ys
 f. dvni á k úg wei j , uk
 nĕkd ſma hI awe; ' fuu
 i j Ndj h uu i hōyi aj ; dj l a
 udf. ai yh . j kakhuj ka
 ; <kaael we; f; n' th ugo
 tu wdl drfhkau oefkKkg
 úh'

Kai-tak ys l Kdgq h i j Ndj h
 fuhg yd; mi kau fj ki a
 wNſhda d; ul wj i a dj l ſ
 i fĕōamĕkav; j h l j fkdyl s
 ; ri' mĕ, h' jei sweo ye, ſ; a
 i u. mĕ HĒ ; dj yk fō' l ÷
 Yd r j g fl dge; ſ fl dgqj egKq
 ; ſ h w=re j <dl ǎ j gl r. kS
 wl Kqi er i u. yd; mi
 tá df, dá j ; u th j BKaj r
 fmKſfkdfmkShhš fl dákau
 . j kahdkfhaYí oh mj d
 i j hxl ſh ; j l á fj ysy~
 i yd rj hš fuj ekswj i a dj l a
 . j kakhuj df. am<mĕeod
 l dĕhYf; j h i y i a dfkdĒ;
 mĕ dj ká du ch. ; yel sl reKq
 j k w; r ke; fyd; amy;
 mĕhd; fhaú, ſ á k uy i hr
 Tnj úhrefj kaì , s kqkh; h'
 1998 cĕsui , Kai-tak fj ;
 udf. awj i ka. j ka. uk fhš
 ; nŕw; r fndfyduhl a
 wj i a dj , ſ . j kahdkh

f. dvnei á ùu udf. ai ydh . j ka
 khuj dg Ndr l rñ' fuu
 wNſhda d; ul f. dvnei á ùu
 Tj yq; d l eue; f; kaNdr
 . khš kuq a fuh Hong Kong
 fj ; udf. awj i ka. j ka. uk
 j k ká d th ud Ndr. ; j hq j
 we; '

tĒk ud yd i á i ydh . j ka
 khuj d ; reK fhl ſ Tyqud yd
 l ſō Tyql j rodj ; aHong Kong
 fj ; . j kahdkhl af. dvni á j d
 ke; snj hš fuh udf. afmr
 ; ſKh yd . efgkkl ſ fudyf. a
 wkdl. ; wj i a d ke; sl ſu ug
 l < fkdyl á l ſ ; j ; aj i r
 . Kkdj l a. ; j Ql < Tyf. a
 i yhkawmĕ g Hong Kong ys
 i mĕ g f. dvnei á ùu . ek ; ; =
 úui Ql < Tyqkre; a r j kq
 kh; h' wj g i h, a kau ug
 úreoDj ke. ſ ákkg úh'
 j D; a h kmK; dj h i < l d
 "mq d Tn Hong Kong ys f. dv
 ni á j kK" hehsud Tyg oekij
 ykñ'

l d<. Kh fmr úi a r l < mĒĒ
 oreKqúh' ; reK khuj d
 hdkfhamd, kh w; g . ; a o th
 Tyg th Tyg yei rúh
 fkdyl s úh' j yd Tyg
 bj ; úug i kal < ud hdkfha
 md, kh ud w; g . ; n' l Kdgj
 w; r; f ud hdkfhamd, kh
 fl dgqj egKq; ſej wNhi ka
 yei rúug Tyg Ndr l f<n'
 Tyqth b; d wmĕj g bgq f<h'
 fndhx 747 j eksúYd, . j ka
 hdkdj l ab; d i ſefj ka



tĒk ud yd i á i ydh
 . j kakhuj d
 ; reK fhl ſ Tyqud yd
 l ſō Tyql j rodj ; a
 Hong Kong fj ; . j ka
 hdkhl af. dvni á j d
 ke; snj hš fuh udf. a
 fmr ; ſKh yd
 . efgkkl ſ fudyf. a
 wkdl. ; wj i a d ke; s
 l ſu ug l <
 fkdyl á l ſ ; j ; aj i r
 . Kkdj l a. ; j Ql <
 Tyf. ai yhkawmĕ g
 Hong Kong ys i mĕ g
 f. dvnei á ùu . ek ; ; =
 úui Ql < Tyqkre; a r
 j kqkh; h' wj g
 i h, a kau ug úreoDj
 ke. ſ ákkg úh'



fi !uHj f. dvnei á ùug ; ri'
 Tyqi u; l =úh' fmr mĒĒ
 Tyf. afokf; ys j ŕwmĕ
 l dka h ud yáñ' fuh udf. a
 Hong Kong fj ; j ŕwj i ka. j ka
 . ufkawu; l fkdj k
 pu; á drckl w; ŕel ſl aúh'
 th i odwkij urKh tl l ſ
 ud fuh , hK fudfyd; j k úg
 Tyqwo l mš dkj rfhl j we; s
 nj udf. ayeŕúh' fuj ka
 w; ŕel ſ Tyqo wo w; ſĕk nj g
 i el ke; '

l mš dkat , fudachj ¾Ok ●



mdi, a

. ʃ káfi ʒ d i udc

. ʃ kafi ʒ d i udc hkqfudkj do@

Y%, xl d i ú, a. ʃ kafi ʒ d
wêl dBfhai ú, a. ʃ kafi ʒ d
i xj ¼OK i y wOHdmkđ tđ l h
ú i kai ʒ l rkq, nk mDdk
l d¼hhka03 l s

- 1 . ʃ ká r i Ördj k¼udK h
i y Wi i a fm< mdi , a f j ;
fkđñ, fha f nod ye l u
- 2 . ʃ ká r f j í wvúh
mj ; ʒ d f. k hdu
- 3 Èj hfkaWi i a fm< mdi , a
fl kđ l r. kñka
i i uka ¼ meje; úu i y
. ʃ kafi ʒ d i udc msyggju

i ú, a. ʃ kafi ʒ d i xj ¼OK i y
wOHdmkđ tđ l fha u q a
l d¼hhka fol u b; d i d¼: l j
l ¼nd; ul j k neúkawm fi
j i r wdri Nfhmgka Èj hfka
Wi i a fm< mdi , a fl kđ l r
. kñkamj ; ʒ k i i uka ¼
ud, dj i y . ʃ kafi ʒ d i udc
msyggju fi j evi gyk wdri N
l rk , o w; r tho fmr l drKd
fol fuka w; si d¼: l f, i
l ¼nd; ul f j ñkamj ; S fuyS
wm wmf. auQ d i e<i u f, i
. ; amq a , u Èi a ¼ d fha
mq a , u wOHdmk l <dmfha
mj ; k Wi i a fm< mdi , a23 yu

. ʃ kafi ʒ d i udc msyggj d
wj i kh'

j i r 30 l hðDh wj i kh" i ú, a
. ʃ kafi ʒ d wêl dBh j k wm
fyj ; ai ú, a. ʃ kafi ʒ d
wêl dBh ki rdcH wdh; kh i h
j . l ú wdri N fl dg we; ' ta
hðDh wj i kaj Qfudfydf; a
w; s re ckðem; s ukamejei Q
f, i wm wmf. ajev fl dgi
wdri N l f ul s ukð j i r 30 l
l Bre hðDh wj i kj we; s
fyhka. ʃ kafi ʒ dj ki f, dđ
Ndl dj i u. wm i i nkD úh
hq =neúks mi q h l , dmfha
oel ʒ Qf, i i ú, a. ʃ kafi ʒ d
ú. Kkh i d¼: l j wj i ka
l rñkawm tai |yd ux. , mhj r
; enfj uq oekar fÜ ck; dj
oek ʒ ; al f ug i ʒ i u l d, hhs

; j ; awhq l kawmf. ai ú, a. ʃ ka
fi ʒ d wOHÉ fckrd, a tÉ ti
i S ku, á B ue; s eid mj i k
wkoug ck; dj oek ʒ ; al f ug
fyd|u ud¼. h mdi f, aorej d
oek ʒ ; al f uhs ukð bkmi q
orej d kn|j u foudmhka
oek ʒ ; al f u fya f j ks . fe
fÉ ; ¼ha fuka wdi hdkq
l <dmfha. ʃ kafi ʒ d fÉ ; ¼hao
w; del s i mB m¼Khl =j Q
t; ukaf. awoyi g i j k¼kawm

. ʃ kafi ʒ d i udchl g i ʒ i u
i a dkh f, i mdi , f; dard . ; uq
wOHdmk wud; HxYh o tai |yd
ykawkuqe; sfhkawm ; j ; j ; a
Yl a u; aúuq oekawm . ʃ ka
fi ʒ d fÉ ; ¼ mskn| oek u . ug
i i fm¼ K h l f i l ¼ K ; kd
wj i kh' oekawe; af; akj erÉ
oek u tayryd i i fm¼ K h
l f uhs

tyswdri Nh j ; ukai ú, a. ʃ ka
fi ʒ d wud; H . re mhxl r
chr; k ue; s ukaf. ab, a sul g
wk ʒ mq a , u wOHdmk
l <dmfhkawdri N l rk , o w; r
tysi d¼: l ; ʒ h ui l a; ri fl á
l d, hl awe; < ; msyggj Q. ʃ ka
fi ʒ d i udc 23 kameyeÉ, h'

tmuKl afkdj tl S. ʃ kafi ʒ d
i udc u. kaf i j k úg; aúúO
bi ò . Kkdj l ai xúOdkh fl dg
we; sw; r wdl D; d . ʃ kahdkd
k¼udK ; rÖ" rpkd" Ñ; % l Ò l
i y m¼K Ñpdrd; ul ; rÖ Bg
koi k h' fujeksi d¼: l ; ʒ hl g
m; ʒ we; s. ʃ kafi ʒ d i udc
ÉB. ekúu i |yd úfYd
wj i a dj l af, i . ʃ ka. ʃ ka
f; dgm< keröfi wj i a dj l a
fuka tys Tj kai |yd úfYd
tl Èk j evuq j l a, ndSugo

i ú, a. † kafi † d wud; H . re
 mhxl r chr; † ue; † eka; † K h
 l r we; ' th wk d. ; . † kafi † d
 i udchka;Ñ; a ffo%hh
 j %Okhg fuka Tj † f. a
 yel † dj kaj %Okhgo uyÕ=
 w; † e, l aj kqwe; '

mdi , ai si † kafuu kj . † kafi † d
 i udc i xl , mh i |yd oeä
 l eue; a l aol † k w; r Tj † f. a
 woyi aj , † atanj j vd fyd‡ka
 meyeË, sfõ'

fuy\$ wmf. awru‡ j k‡ka. † ka
 fË ; † ha/l † dj kg i h' fokd
 fhduql † u fkdj k nj ki
 meyeË, sf, i u i |yka l < hq † h'
 ukoh; ai h' fokd . eg‡ l a
 . k‡d ; ek fuh j k neúks
 kuq añkawoyi aj k‡ka. † ka
 fË ; † ha/l † dj kai |yd
 wj i a dj kafkdue; snj o fkdfo'
 wj YH; dj h fuka yel † dj kawe; s
 whg f; † ekkl a fi yryd új r
 j k nj oekaoekawm fj ;
 , efnk m% pdr Ti fi ameyeË, h'
 m‡dk fl dgu . † ka fË ; † h
 wdY% j wË; . i okõ fj ; . , d
 fkd. h oekµ fi yryd fydah'i
 ; rul g . , d hdu fya † j kameK
 ke. Swe; s. eg‡ rdYhl aú i |d
 . ekúgo ud%. h i l i j kqoel ú
 wmf. an, dfmdfrd; a † h' c, pr
 . † kahdkd m‡n| meK ke. Swe; s
 . eg‡ fi i |yd l Eu koi † l i †
 mq a , u Èi a % d fhà mq a , u
 wOHdmk l <dmfhkawdri N l rk
 , o fuu . † kafi † d i udc
 i xl , mh Èj h‡ m‡rd j Hdma
 l rñkaoekµ fnod ye l u wmf. a
 wru‡ h'

ආචාර්ය ජාතික පාසල් ශ්‍රී ලංකා සමාජය



පුස්තකාල දික්වීමේ
 පුස්තකාල අධ්‍යක්ෂ ජනරාල්

ආචාර්යවරු මධ්‍ය මහා විද්‍යාලයේ ශ්‍රී ලංකා සමාජය



පුස්තකාල දික්වීමේ
 පුස්තකාල අධ්‍යක්ෂ ජනරාල්

මධ්‍යම කලාප ආදර්ශ මහා විද්‍යාලයේ ශ්‍රී ලංකා සමාජය



පුස්තකාල දික්වීමේ
 පුස්තකාල අධ්‍යක්ෂ ජනරාල්

ශාන්ත ආන්ධ්‍ය විද්‍යාලයේ මහා ශ්‍රී ලංකා සමාජය



පුස්තකාල දික්වීමේ
 පුස්තකාල අධ්‍යක්ෂ ජනරාල්

fkdkej ; Kq úYj h

Lkavdl wl d h i e < l + l <
xwl d h i j dhl a úp, H
'i j dèkj fj ki j k w. h f, i o
y wl d h mrdhl a úp, H 'xys
w. h u; fj ki j k w. h & f, i
o ye f k f j k nj wm i eu ok & kd
l drKhl s 20 j k i hj fi a l yj 0
uyd m f h d j k we, nÜ
whkã ghkg wkj wm i h''
fokdu l d, h keue; si j dhl a
úp, H wkj fj ki ùug Ndckh
fö' Olbers's Paradox f. ka
mi q h fl dgi wj i kal f < ata
. ek Tng hul ai s ßug l d, h
, nd foñk s

i s kk Tn > k j k d k a rhl a
< i gf. k i ák nj' Tng
i Eu ÈYdfj ka fmfkk fha
l e l a fyda úYd, . i l a fõ' kuq a
Tn i ák f k a h i i ßdj l fl dgq
j 0 j k d k a rhl fõ' t f i k i
T, n % g wkj wmg i Eu
ÈYdj l k a ; rej l a f m f k a k i
tu ; refj kai Eu ; eku
wdf < d d u ; a ùug k i wm úYj h
m B ñ ; úh h q = fõ' Tng meye È < s
úh h q f ; a w m t l u ; ek l
l erl efj ñ katl u
m % k d j , h l g u y k f o k n j h '
i ene ú k u úYj h m B ñ ; o h k k
h k k g o e k g ; drl d úoHd { j re
, nd s we ; s m s s f k i k s È s
úYj h (Observable universe)

m B ñ ; nj h' t f i k i k s È s
úYj h l e l o h k k ú. y l ruq
fi m < n j h i b Ö h l a m % u f h k a
, nd fok f k a f, d a m ; , úoHd
m % k d l f h l = j k t â. d we, ka
f m d a ú i k a 1848 s h' Tyqm j i k
wk d u g úYj h w k k a j Y f h k a
m e r K s f k d f ö' k u q a b ; d ý r
w ; s f h a o j i l t h w d r i N
j k k g w e ; ' w E ; k a m y á ; r e j ,
i g t k w d f, d d h ; j u ; a
m D Ó ú h l r d m e ñ K f k d u e ; '
t k s d l d, h w d m i á g f. d i a
úYj h k s È K h l r k j d g j v d
úYj f h a j h i j e ä n j f y f ; u
l f ö h' f i w k j j % ; u d k h j k
ú g f. d v k e. S w e ; s k s È s
úYj h h k m o k u l r d m e ñ K
w e ; ' t a w k j T, n % i f. a f, d d
w i ' u ; j d o h ì E h h s ; j ý r g ; a
ú i a r l s f i s w E ; ; d r e l d j ,
w d f, d d h m D Ó ú h l r d
m e ñ K f i s r l a ú i a d m k h g
, l f ö' t f y h k a j % K d j , f h a
o D Y H l , d m f h a t j d f k d m y g h s
f i i h' l d r K d w k j f i j k
ú g T, n % i f. a ú i x j d o h g t f r y s
m % , u ; b E B m ; a ù y u d r h '
f u y s i j y k a l < h q = m D d k
l d r K h k i úYj k H d h
úoHd f ö s f. k t k q, n k i u y r
ú. y l s i ; j ; a m % k r d Y h l g
u q m r ñ k a t l a m % k h l g

muKI ams; fe i mhk nj h'
tki d ká È; úYj h muKI a
wrh wdf, dd j %l i, hK 14
l kai ukú; mBñ; úYj hl a
nj jgyd . ; hq h' ke; fyd; a
úYj h i ui a hl aj Yfhka
yeoÉ fi § th wkka j Qi a dhs
fkdj k fj ki j k úYj hl aúh
hq h'

i a dhsfkdfö ki' úYj h
wkj d%hfhkaú fj ki aúh
hq h'

"uyfKk s fi i h"
i xi d drfhdawe; fj ñka
ke; fj ñkayd mej f; ñka
È Ká j fj ki aúug Ndckh
fö' "

wj qey 2600 l g muK fmr wm
uyd f, dö; #d ný mhdk ka
foYkd l < o j %; udk ngyr
úoHd{ hdg th jegyShkafka
1922 muK j k úgh'
kõfgdkhdka %hg wkj
i a dhsúYj hl a. ek woyi a
i |ykaj j o 1922 § rei hdkq
. Ks { fhl =j 0
wef, l á eka% mÉudka
(Alexander Pictchmann) úi ka
úYj h m% drKh j k nj
mej i h' tu l d, fh§u ; dri d
úoHd{ hka ukodl §Ksj,
j %Kdj , ka, nd . ek§ug mgka
. eKk s túg Tj §g fmkS. h
l drKh ki' tj d i Eu tl l u
j %Kdj , fhar; =ÉYdj g fyj ; a
; rx. wdhdh j eä ÉYdj g

úí a dmkh ù we; snj h' 1929 §
m% u j rg táúkayn, aúí ka
ukodl §Ksfol l m%ö. tj dfha
ýrg wkf, duj i udkand; § j k
nj mej i h'

Velocity between two galaxies distance between them

fuh yn, f. ak§ h
(Hubble law) j Yfhkay=kj k
w; r mi j tamsn | j fi dh
n, uq fuu rl a úí a dmkh
úí a r j kafkaN!; § úoHd
khuhkaj k fvdma %
wdj rK fhyh' (Doppler effect)
wm

l B i hq ukodl §Khg (The Milkyway Galaxy)

wdi k kfhamyá ukodl §Ksj , g
l v d rl a úí a dmkh l o ýBka
myá ukodl §Ksj , g j v d jeä
rl a úí a dmkh l o mj ; § fuh
by; i i nk0; dj h u. kaukdj
meyerE<s fö' fi wkj yn, a
meyerE, sl < wkoug úYj h
fkdkaj ; Stá dl drj m% drKh
j k nj meyeoxs fö' úYj kHdh
úoHdfö hi m% s #l a ; j ; a
. egz i updhl g fya =úh
yel h' tki d b; d mfri á i' úh
hq =l drKh ki' oekg fi dh
. ; am% drKh i |yd l á hi uOH
, È h fkdmygk nj h' j erÈ
f, i wm mDÓúh fydawm
ukodl §K h úYj fhaueo
j Yfhka fkdí e<l h hq h'
m% drKh i |yd i r, j i dfmÉ

kHdh Ndú; l < yel h'
ukodl §Kstl fkl g i dfmÉ j
. ; al < tl fkl df. kawE; afj h'
k0 k úYj kHdh úoHdfö§ fuh
úYúh m% drKh fyj ; a
Cosmic Expansion f, i y=kj h'

fuf, i tl katl mh. eg fm<
k. k ; dri d úoHd{ hdg , nd
. kkd ká È K yd ks ukhka
Ti fi ab; d j eo. ; au; j do úYj h
fl frysBÉBm; al rh s tkí
úYj fhamej e; u ol k Tyqts
wdri Nh yd úkdYh . ek i s §ug
mgka. kh s

w; \$ fhai g úYj fhawdri Nh
fl frysbÈBm; aj QkHdhka
mDdk j Yfhka; kl s

- 1 i a dj r ; ; j j doh
- 2 fodā k khuh
- 3 uyd msm̄pei kHdh

fi i h' kHdhka mmd; d
f, i tkī bfī yg . ekfuka
my< j QkHdhk afkdfō' th
j ¾; udkfhab; d i g l mg
foāmd, { fhl =b; d fyd |
i e<i qul kack; dj uq d l r
ck; dj f. u l fkkaBx. d ; uka
ch. ykh l rkkd fukš
; drl d úoHd{ hdo ; ud yufō
we; sÚYd, m%k i updhk f. a
l fkkaBx. d j vd i d¾: l
kHdhkabÈBm; al rhš kuq a
wj i dkfha fmr j Qm%k
i updhgu yi j kkg i y fō'
fi kī d j ¾; udkh j k úg
úYj fhawdri Nh msn|j uyd
msm̄pei kHdhg j vd uq a; ek \$
we; f; a; ud yufō we; sm%k
i updfhkal ymhl g fyda
m&s fe , nd \$fukš

mB. Kl h fydarEmj dykh
bÈBfhaj dā j k l vd orej d
; ud l eu; sūrfl =i ák

*ekgi sÑ; Nghl akeröug
mgka. khš Tyqtu Ñ; Náh óg
fmr l ymj rl u kerUj do úh
yel h' kuq aTyqfyda th ol k
fj k; al j rēka fyda Ñ; Náh
wj i dkfhai g wdmī ā g
keröug W; ā dy fkd l rhš
úfgl th udki d j Yfhka
mBys. h Wku; a l fhl f. a
j evl hehs Tng l , mkd úh
yel h' kuq aÑ; Náfha
; Wi ckl wj i a dj l a Tng
u. ye l . fha kī th keröug
Ñ; Náh wdmī ā g . ekšug
W; ā dy l rkqwe; ' ta
wdl drfhka u m% drKh j k
úYj fhō üāfhda o¾Ykhl a Tng
, eī hehs i s k k' üāfhda
o¾Yk fha Tng úYj h m% drKh
j k nj oel h yel h' th kj ; d
wdmī ā g Odj kh l rk k' tūg
Tng ukodl \$stl fkl d foi g
p, kh j k nj yd , xj k nj
oel h yel h' úYj fhauOH
, È hl afkdue; sneúka
ukodl \$si h, ā tl a, È hl g
muKl a<x j kqoel h yel h'
kuq afndfyda úg ukodl \$s
w; r yr YS>fhkawvū tl u;
tl jefgkqoel h yel h'
úYj fhauOH , È hl afkdue; s
neúka ukodl \$si h, ā tl a

, È hl g muKl a<x j kqoel h
fkdyel ' kuq afndfyda úg
ukodl \$sw; r yr YS>fhkawvū
tl u; tl jefgkqoel h yel h'
; j yrg; ami mī g Odj kh
l fī \$ Yl ā h yd mod¾: h b; d
by< Wl k; j ; ; j hl g
i i mS/kh ù hkqoel h yel h'
tfi kī fuu m% drKh úYj h
wdri N j fha fuu b; d by<
; ; j hkawe; si a dkfha úh
hq h' kē k ; drl d úoHd{ hka
th uyd msm̄pei j doh
(The Big Bang) f, i y=kj ; s

j i r 30 l g wēl l d, hl a
"bang" Yī ofhkamā; j Qwm
rgg uyd msm̄peul ahkk
meyerē<sl r . ekš b; d myi h'
kuq au; l ; nd . ; hq =
l drKh kī úYj fhauyd msm̄reu
fj k; amsm̄reul g i udk fkd l <
hq h' ukō tysuOH , È hl a
fyda th l hnd; ul j k tl a
, È hl afkdue; sneúks uki
wj q al rj k úl hg Tn we; <; a
ù yudrh' tks d th ukdj
úoHd; ul kj Kk a oel . ; hq h'
bÈBfhš uyd msm̄pei j doh i u.
úYj h ; rKh l fūg
n, dfmdfrd; ā =fj ñ'
pkj, ñkj x. ●



i ú, a. ꞑ ka fi ꞑ h hkqwfma
 rfÜ tl am% dyk udOHhl ꞑ
 wfmarfÜ . ꞑ ka fi ꞑ h oekg
 f, dđ fhaoyj k i a dkh; a
 wdi hd uyoũmfhkam% u
 i a dkh; a, nd . ekũ fmrĒ.
 f, dđ fhaug wegh j k
 , xl dj g uy; awNũdkhl ꞑ 1964
 ꞑ muK wm rfÜ i ú, a. ꞑ ka
 fi ꞑ h werö we; ' i ú, a. ꞑ ka
 fi ꞑ h faj %; udk wud; Hj rhd
 j křkamd%, řfi ka =uka %. re
 mhxl r chr; k ue; ř uđhř

m% ufhka űkř kamřEöug
 W; á dy f. k we; ř; ab; d wE;
 w; ř fhřh' fudj řamsydgq
 hq , ; u fow; g i úl r
 l =fy, aj , i g mek mhřEöug
 W; á dy f. k we; ' t fy; a
 oekg . ꞑ kahdkfhaw; ř h
 f, i mřřf. k we; ř; a
 rdj Kdf. ao~qfudKrhřř bka
 mi q, řkdfvda vdũkř űi řka
 . ꞑ kahdkd wdl D; swe| we; ; a
 th Tyg i d%: l j ku l řug
 fkdyl súh' rhű i fyđřhka
 tu wNsmřh i d%: l l rřka
 f, dj m% u j rg . ꞑ kahdkhl a
 mhđi r l rüug yel řdj , eř
 we; ' tu wE; w; ř fhařkř řa
 . ; aj Ehu i d%: l j řharřű
 i fyđřhka kř dfj kř rhű
 i fyđřhkf. a. ꞑ kahdkfhka
 mi qũũO udĒ, řha. ꞑ kahdkd
 wo j k úg i yũ we; ' rhű
 i fyđřhkf. a. ꞑ kahdkfhka
 mi ql ř l řfhkargj , argj , a
 w; r . ꞑ ka. ukamgka. ekřř
 bkami qrg wNHka rfhd
 . ꞑ ka. ukd . ukh mgka
 . ekřř

j %; udk fhaY%, xl dřö i ú, a
 . ꞑ ka fi ꞑ h f, dđ fhařj k; a
 rgj , b; d mř, ř ù we; '
 fuhg mřdk fya ꞑ j křka
 i j Ndj fi !křřhřř . ꞑ ka

f; dgř<l ahkqrgl
 fi !křřhfhamřdk f; dgř<l ř
 rg ; <g meřřKk řndfyda
 j HdmdBl hka fuka
 wdfhdřl hka f, dj i řĒ ř
 fuka l d%hĒ u m% dyk
 udOHhl aj k . ꞑ ka fi ꞑ dj
 nyq j řhdod . kř w. kř rg
 muKl ai řud j 0. ꞑ ka fi ꞑ dj
 w. kř řkamg; g f. k hdug
 j %; udk ckđem; ř udf. a
 kdhl ; j h ; řKhl r we; s
 w; r tyswřri Nh f, i u; a ,
 . ꞑ ka f; dgř< bĒl ř u oel űh
 yel ř' ři Bh ni r: j , kai ř
 l rk m% dyk fi j h b; d
 bl űkřkařö. j ; j l řug . ꞑ ka
 fi j h Ndũ; fl ř%

tmuKl řařkdj úũO W; á j
 j , ř fudj řař. ayeł řdj
 mřřYkhl l řug mhj r f. k
 we; ' fudj řaři řkamj ; j kq
 , nk úũO . ꞑ kai řořYk yd
 mřřYk u. řařm% d l wj Odkh
 řhduql r . kř
 wm mdi f, ka, nk wOHdmkh
 fuka fudj řgo wOHdmkh

, nd ř rgg j evodhl . ꞑ ka
 křuřj l =i ys l ř u . ꞑ ka
 mdi f, awNsmřhřř řfuka rg
 ; < we; řj k . egř l dř ; ; j
 wvmK l řug . ꞑ kayuřdj
 řhdod . kř
 rg wNHka r . ꞑ ka fi j h
 kř d wm rgg úřoř űkuh
 . , d tkřkawřmařkř řař. a
 oĒ ; dj h kř řfj kř
 i xpřl hka; u Y%, xl d . uk
 w. kd . ukl al r . ekřug
 l eu; ř' thg fyđ|u ud%. h
 j křřa. ꞑ ka fi j hřř
 kř řt<řhkařeo yef, k
 . xÖd řmd<j g l vd j eřgkřřa
 i ř fi ř řmdgl ařuks th
 by< wyi g řmřkkřřa; j ; a

w, xl řřj ; ař, i gh' i xpřl hka
 jeä . Kkl aY%, xl dj g meřřKũ
 ; j ; ařya ř l ř
 tmuKl ařkdj NdKl
 m% dykhgo i ú, a. ꞑ ka fi j dj
 řhdod . kř Y%, xl d i ú, a. ꞑ ka
 fi j h i ; ř we; řhdkd u. řař. a
 myi j i |yd o m% dykh l äkř
 l ř u i |ydo řhdod . kř
 DA úřřx. i mřa9-c

i ú, a . ꞑ ka fi j h

. ꞑ ka fi ꞑ h

i ú, a. ꞑ ka fi ꞑ h hkqt l a
i a dkhl i g fj k; ai a dkhl g
u. Smꞑ dykh fyda NdKaw
mꞑ dykh l rk myi qud OHhl a
fö' fuu i ú, a. ꞑ ka fi ꞑ dj
weuBl dfö rhú i fyðorhka
úi kawdri N l rk , ' fuh
oekgu; ab; d by< uÜgul
mj ; S wmf. a fuu w; \$
uq kañ; a kf. aW; i dyfhka
i ú, a. ꞑ ka fi ꞑ h wdri N ù we; s
fuu . ꞑ ka fi ꞑ d i a dk b; d
YS-fhkaj Hdma ù we; ' foj k
cd; Hka r . ꞑ ka fi; dgq<
u; a , kawerfUK ; j ; a fhdd
mhj ri \$. ꞑ ka fi; dgq<l ahkq
rgl i xj ¼OkfhamDdk
fodrgg l \$ wm w; \$ uq ka
ñ; a kardj K . ꞑ ka; dÉ K
fi ꞑ ho Ndú; l r we; ' fuu

. ꞑ ka hkd w; r i ¼h n, fhka
l ¼dl rk . ꞑ ka hkd do j dhq
. ꞑ ka hkd do fi w; r mDdk
; ekl a. kkd . ꞑ ka hkd fö'
fuu . ꞑ ka hkd kj ; j k ; ek
wm fmdy kul kay=kj hš tk'i
. ꞑ ka fi; dgq< hk kduhš
fuu fi; dr; ¼e wkj; neÉ úg
wmg fmkShkafkD fuu . ꞑ ka
fi ꞑ h b; du by< uÜgul
nj hš fuu . ꞑ ka hkd . ꞑ kg
heúuo . ꞑ fkai g wmi q
meñKuo l d, mBÉfpohl awkj
i ý l rkq, nhš fuys. uka
. kkd fi j l fi úl dj kD
u. hdg j vd fydl fufyj ri a
bgql rhš fuu i ú, a. ꞑ ka
fi ꞑ h cd; Hka r uÜgfukD
b; d ckmlh ; ekl a. kS fuu

. ꞑ ka fi ꞑ h wd¼Ol h w; kawm
rgg fndfydamfhdkkj ; a fö'
mgra kawm rg keröug
meñFKk úfoðl i xpdri hka
fuu i ú, a. ꞑ ka fi ꞑ h u. ka
b; du myi qj kawm Y%, xl dj
fj ; meñFKhš wm rfgka
úfoðl rgj , al rd hdug i ák
ñki ka fuu . ꞑ ka fi ꞑ dj
u. ka. uka. khš . ꞑ kka. uka
. kkd u. Smꞑ dykh yd NdKaw
mꞑ dykh yer ; eme, a fi ꞑ ho
fuu. kai ý l rkq, nhš fuh
. ꞑ kamꞑ dykfha; j ; ai qfYl s
l vbul a fö' weuBl d tl á ; a
ckmoh fuhg uq \$ úh'

. j kã r

I hj dj ákd ; Hd. Èkd . ek&ug fukk Tng; awj i a dj l á''''''''

- 1' f, dj úYd, ; u u. S. j kahdkh y÷kj k&k
- 2' i ú, a. j kafi j d mk; md%, fi ka fõ i i u; j ðokh l j od o@
- 3' uyyj uÜgfi i g by<ku myá . j kaf; dgq< w; Bkaf; j k i a dkh yñ j k
. j kaf; dgq< ki l rk&k
- 4' Y%, xl d kôyi a. j fkai j l < yel sl ðnd dri i 03 l ai | ykal rk&k
- 5' Stealth ; dË Kh fhod . kñkakmoj d we; s. j kahdkh y÷kj k&k



by; i |yka. egz j , g ms&s fe , ðd" Tnf. aku" , mkh i 'oykal r"
; eme, am; l w, j d wm fj ; , eî ug i , i j k&k'

. j kã r f; j k l , dmfha ch. ðyl hka

tafi kdr; k
21/B
my<ui á ek&k
n, kf. dv

; úk&srdukdh
n; , j ; a
W!rj
frdgU ^ud; r yryd&

fl atÉ ; B÷ i | rej ka
; B÷ kj i
l j q avdr m%ú wi <
l j q avdr
; Ku, á,

i hz úui s

-. j kã r ~ ff; ðdi d h

i ú, a. j kafi j d wêl dBh
fkð' 04" yk&ñáh ndr" fl d<U 02

ÿrl : k 0112 - 350088
0112 - 304639

-. j kã r ~ ff; ðdi d i Ördj i | yd
, ms' rpkd" k&udK yd . j kal fl a ð
wdY% j Tn ok&d f; dr; fe i y
PdhdrEm wm fj ; fhduql r Tnf. a
k&udKYs Sodhl ; j h , nd Èh yel h'

. j kã r . egz j , g ms&s fe tj d ch. ðkh l < ch. ðyl \$ ch. ðyl dj kayg
; Hd. m&dkh kjre okhl o&i j l f ug khñ; w; r bo&fh&stams&n |
oekij o&ug n, dfmdfrd; a =fj uq



AMERICAN COLLEGE OF HIGHER EDUCATION, DEHIWELA, SIGNS MOU WITH GCAC, CHINA, OPENING THE DOOR TO A GOLDEN OPPORTUNITY FOR OUR YOUTH IN THE FIELD OF CIVIL AVIATION ENGINEERING & CABIN CREW FLIGHT SERVICES.

A very significant event in the history of Aviation studies in Sri Lanka took place on the 4th of July 2011 when a MOU was formally signed between the American College of Higher Education, Dehiwela and the Guangzhou Civil Aviation College of China.

Ms Sylvia Li Director of Foreign Affairs of the Guangzhou Civil Aviation College and Mrs. Sherryn Yaseen Mangalagama, CEO of the American College of Higher Education were the signatories for their respective Institutes. The "Top Level" delegation from the GCAC consisted of Mrs. Sylvia Li, Director Foreign Affairs, Mr Lian Zhisheng, Dean of the Faculty of Aviation Engineering and Ms Angela Xiaoming, Dean of the Faculty of Cabin Crew Training.

Mrs Sherryn Yaseen, CEO of ACHE, addressing the well attended gathering, which included students from some of the leading schools in the Country, emphasized the importance of the alliance with GCAC for the future Career prospects of Sri Lankan students, also outlined the leading role played by the ACHE in providing quality International education to our Youth, particularly in the USA, over a period of more than 17 years of excellence in Education in this Country, with current transfers amounting to more than 1500 students.

Ms Sylvia Li in her address stated that the GCAC is eagerly awaiting the arrival of the 1st batch of students from ACHE in September this year

and expressed her hope that the "state of the art" facilities available at GCAC, which are unequalled anywhere in the World, will enable our students to excel in their chosen fields of Aviation Engineering & Flight Services.

Mr Rohana Nanayakkara, Program Manager ACHE, spoke of the "Treasures" that had come to Sri Lanka over thousands of years and this time the most valuable of all "Treasures" that of Education has been delivered to the Youth of our Country ensuring a bright future for them.

The significance of the event is that with this agreement, study programs in Civil Aviation leading to well recognized & highly paid



careers come within the reach of the average Sri Lankan student – both boys and girls.

A Career which brings very good pay and the “perks” that are associated with the airline trade, Aircraft Maintenance Engineers are in great demand across the World as Airlines expand their operating networks & the Aircraft numbers increase dramatically.

Now, Thanks to the MOU signed between Guangzhou Civil Aviation College & the American College of Higher Education, Sri Lanka, our Youth have the “Golden Opportunity” of achieving their dreams of a career as an

Aircraft Maintenance Engineer, Cabin Crew, Avionics Maintenance Engineering, etc. The Guangzhou Civil Aviation College is owned by the Government of the Peoples Republic of China and is administered by the Civil Aviation Authority of China (CAAC) thus ensuring World wide acceptance & recognition of its certificates & qualifications. Located in the Southern City of Guangzhou GCAC presently boasts of two campuses housing 8000 students in its state-of-the Art facilities and is the “Training Provider of Choice” for many major International Airlines of the World, such as Cathay Pacific, Singapore Airlines, China Southern Airlines, etc, in

specific areas of importance in the Airline Maintenance Industry.

The significant feature of GCAC is that this University is totally dedicated to Civil Aviation programs only, covering Aircraft Maintenance, Avionics, Engine Overhaul, Electronic Information & Telecommunication Engineering, Aircraft Structural Repair, Cabin Crew Training, just to name a few.

Training facilities include more than 27 aircraft of various types including fighter aircraft for hands on maintenance training, two McDonnell Douglas MD 82 commercial

civil aircraft with airworthiness certificates, along with more than a hundred aircraft engines of various types including Jet, Turbo Prop, Piston Engines. Four Aircraft Cabin Simulators for Airbus A320,two Boeing B737 and Boeing B747 "Jumbo" Aircraft, each costing more than USD 750,000/= are available for Cabin Crew training.

The laboratories, lecture Halls, the training methods & aids are all of "cutting edge technology" which very few Institutions even in the Western World can boast of. Consisting of modern Auditoriums, restaurants and facilities for various recreation and sports activities, each Campus is a mini City by itself, with shops, offices, Hotels for visiting VIPs & even its own Police Station. Students have the advantage of "hands on" training during the study program, followed by

practical experience on maintenance of Airline aircraft on "Industry training". China Southern Airlines, who has close & major connections to GCAC provides the facility of actual "line maintenance" for the successful graduates of this program.

The most significant factor of this program is the very reasonable and affordable cost of this course of study, which places it within reach of the average Sri Lankan student.

The first year of the program will be conducted in Sri Lanka by the ACHE where a thorough grounding of the Theory & Basics of Aircraft Maintenance will be taught, as stipulated by the GCAC. The second year of study will be implemented in China at the GCAC Campus, where the Diploma program will be completed.

The lectures at ACHE are

conducted by some of the highest qualified Academics in the field of Aviation, counting vast experience in the Industry covering all areas of critical importance, which includes both Civil & Military Aircraft.

The American College of Higher Education, Sri Lanka, by its tie-up with the Guangzhou Civil Aviation College, China has opened a "Golden Pathway" for our Youth and already, the first batch consisting of both Girls & Boys have completed their training at the ACHE Campus and are scheduled to transfer to China in September this year . Further details & for registrations, which are now on for the next batch, please contact

Mr. Rohana Nanayakkara,
Program Manager on
077 293 2995.





November's Dubai Airshow
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Generation Aviation
Professionals

Dubai Air Show



wēfō. § ohKqfj ñkamj ; k j ; ukaf, dā h oekaoekai udkH m¼Yk rgd
 j , kaneyerj i úfYd Sj Om¼Yk f, dā h fj ; boßm; al ſ ug hyyi & fō' bka
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. j kahdkhl . ukal f u ; nd
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STEALTH



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I rñkaku j d we; sF 22
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i | yd Jamie Foxx, Jessica Biel,
Jhon Lucas i y Sam Shepard
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 Tj kfaw; ka kujej Kqwfkl a
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 knks tu khurys . j ka
 hdkh moj kq, nkafkal D; Wj
 i dok , o npeu; amrs Kl
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 fuu khuj d yUd hñkawehj
 hg; al r . ekug mñ; k orhs
 fuj eks hpuh yd i yi Kq
 i ýüi rdYhl aj gd fuu
 Ñ; Wgh úl dYkh fõ.

fuu Ñ; Wgh 2005 j i f%
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H-A-W-X

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fl ; ri w. fkø@ tj ka. † ka
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fok wdl drh ñka fmkkij
fl f¾'

War fighter hk mB. KI I \$vdj
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j kfkka Recon Advanced War
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. † kahdkh l †l hdg f; drd
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i enÉ mÿdrI . † kahdkd
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 mB. Kl l †dfö fhfok

mpa , hdg úfug yel swhßka
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 j , go uyk foñka; u . † ka
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 H.A.W.X mB. Kl l †dj i u; †ö'
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 . kñkamB. Kl l †dj
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i Å; kdu, a ●

