

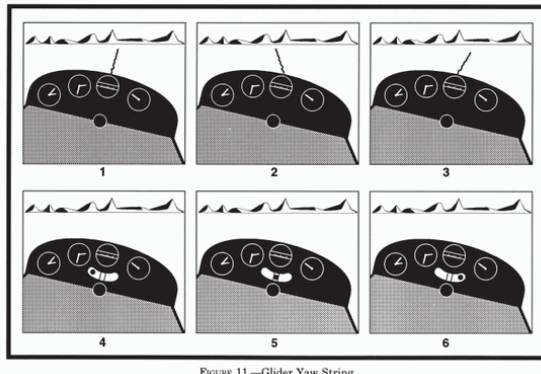
(A81) 滑翔機飛航原理

最近更新日期：無；更新題號：無

原始題號:0015843 題組:1 難易度:易

- (B) 1. (參照圖1)下列哪一個偏扭條與傾斜儀指示向右側滑轉彎？
(如圖A81_fig1)
(A)3及6。 (B)2及6。 (C)2及4。

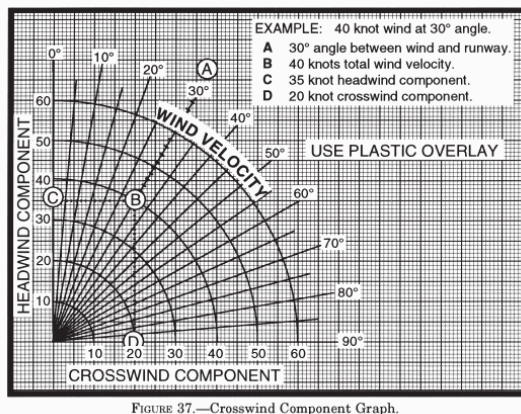
題目圖：



原始題號:0015844 題組:1 難易度:中

- (A) 2. (參照圖2)如塔台報告風向速為220/30，則18跑道落地的頂頭風向量為？
(如圖A81_fig2)
(A)19哩。 (B)23哩。 (C)30哩。

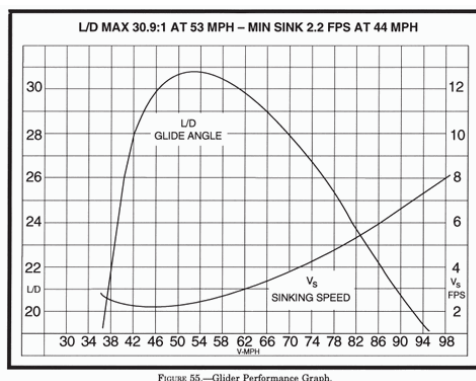
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原始題號:0015845 題組:1 難易度:中

- (B) 3. (參照圖3)在靜風狀況下，滑翔機以53哩/時空速下降1哩，則其下降率為？
(如圖A81_fig3)
(A)144呎。 (B)171呎。 (C)211呎。

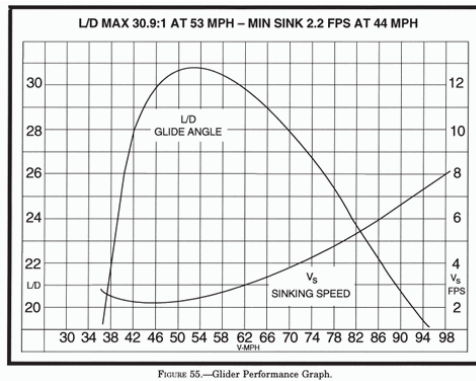
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原始題號:0015846 題組:2 難易度:中

- (B) 4. (參照圖3)在靜風狀況下，滑翔機須獲得每秒5呎下降率的空速為何?
(如圖A81_fig3)
(A)75 MPH。 (B)79 MPH。 (C)84 MPH。

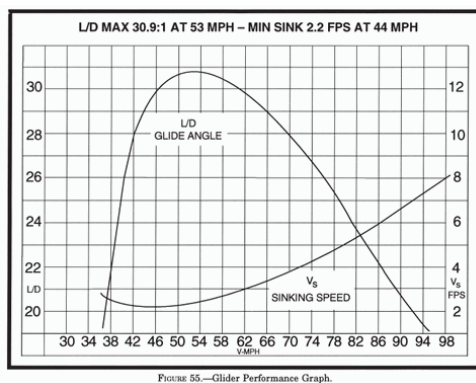
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原始題號:0015847 題組:3 難易度:中

- (C) 5. (參照圖3)在靜風狀況下，滑翔機以最低下降空速下降1哩，則其下降率為?
(如圖A81_fig3)
(A)132 呎。 (B)170呎。 (C)180呎。

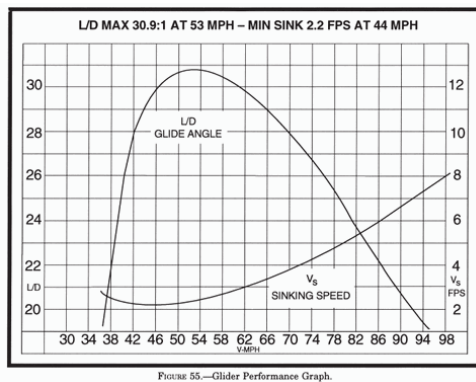
題目圖：



原始題號:0015848 題組:4 難易度:中

- (B) 6. (參照圖3)在靜風狀況下，滑翔機下降1,000呎獲得最大降滑距離之空速為何?"
(如圖A81_fig3)
(A)44 MPH。 (B)53 MPH。 (C)83 MPH。

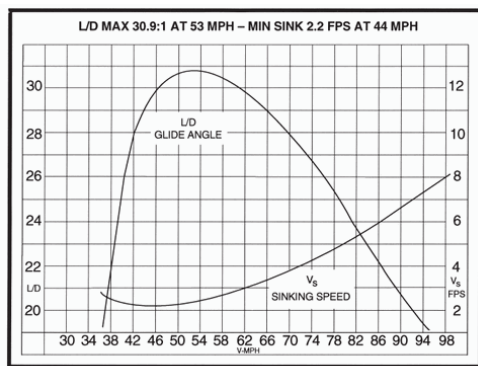
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原始題號:0015849 題組:5 難易度:中

- (C) 7. (參照圖3)在靜風狀況下，滑翔機在68哩/時的概略升/降比為何?
(如圖A81_fig3)
(A)10:5:1。 (B)21:7:1。 (C)28:5:1。

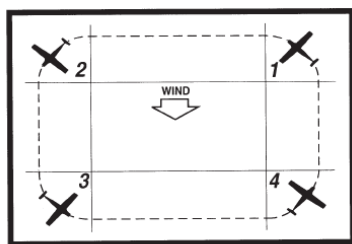
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原始題號:0015850 題組:1 難易度:易

- (A) 8. (參照圖4)在飛四方形航線時，航空器何時應轉彎小於90??
(如圖A81_fig4)
(A)在第1與第4轉角。(B)在第1與第2轉角。(C)在第2與第4轉角。

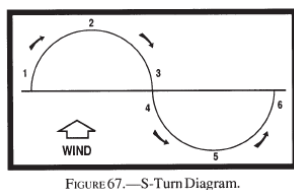
題目圖：



原始題號:0015851 題組:1 難易度:易

- (B) 9. (參照圖5)練習S形轉彎時，需持續順著路做小半圈轉彎，在通過路中心線或參考線時完成，這種情形最可能發生於哪一個轉彎
(如圖A81_fig5)
(A)1-2-3，因為在最後一次轉彎期間，轉彎坡度減小太快。(B)4-5-6，因為在早期轉彎期間，轉彎坡度增加太快。(C)4-5-6，因為在最後一次轉彎期間，轉彎坡度增加太慢。

題目圖：



原始題號:0015852 題組:1 難易度:易

- (B) 10. (參照圖6)在C點到D點間的水平橫槓代表
(如圖A81_fig6)
(A)最終裝載因子。(B)正向限制裝載因子。(C)正常作業空速範圍。

題目圖：

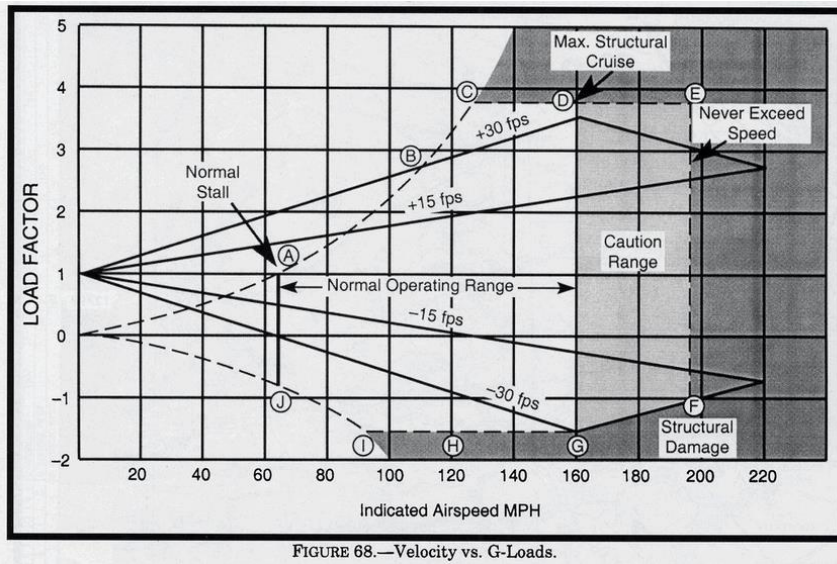


FIGURE 68.—Velocity vs. G-Loads.

原始題號:0015853 題組:2 難易度:易

- (A) 11. (參照圖6)在E點到F點間的垂直線代表空速表的_____ (如圖A81_fig6)
(A)黃色弧線的上限。 (B)綠色弧線的上限。 (C)藍色輻射線。

題目圖：

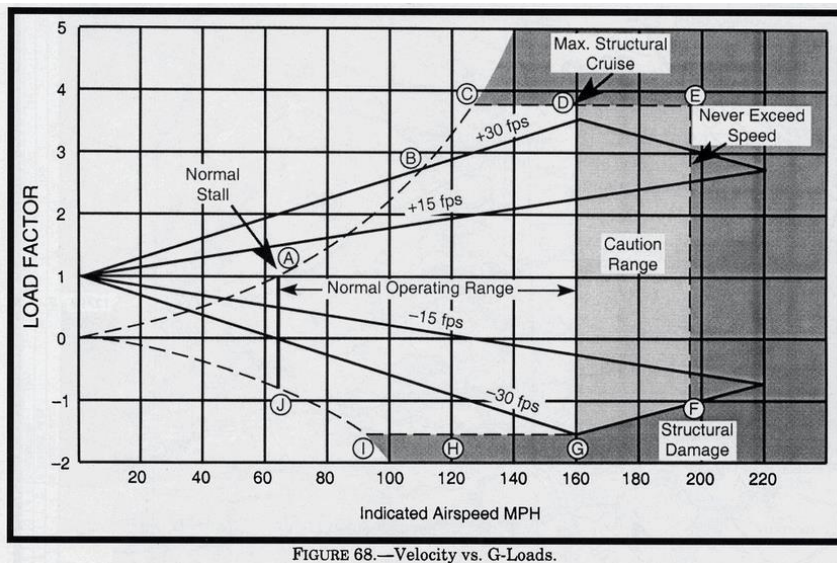


FIGURE 68.—Velocity vs. G-Loads.

原始題號:0015854 題組:0 難易度:易

- (C) 12. 列舉航空器運動四個基本動作
(A)動力、俯仰、傾斜、及配平。 (B)推力、升力、轉彎、及滑翔。 (C)平直飛行、轉彎、爬升、與下滑。

原始題號:0015855 題組:0 難易度:易

- (B) 13. 翼型失速時，攻角將如何
(A)如重心前移，則攻角增加。 (B)不論總重為何，均維持不變。 (C)總重增加時，攻角改變。

原始題號:0015856 題組:0 難易度:易

- (A) 14. 造成每次失速的直接原因為
(A)攻角超量。 (B)密度高度超量。 (C)垂直上升率超量。

原始題號:0015857 題組:0 難易度:易

- (A) 15. 起飛性能最關鍵的狀況為大載重、高高度、高溫度，及_____的綜合結果。
(A)不利之風向 (B)跑道週邊的障礙物 (C)動力系

原始題號:0015858 題組:0 難易度:易

(B) 16. 何為絕對高度?

(A)直接讀自高度表之高度。(B)航空器距離地表之垂直距離。(C)標準海平面以上之高度。

原始題號:0015859 題組:0 難易度:易

(B) 17. 何為密度高度?

(A)標準海平面以上之高度。(B)修正非標準溫度後之壓力高度。(C)直接讀自高度表之高度。

原始題號:0015860 題組:0 難易度:易

(A) 18. 密度高度，影響航空器落地性能，定義為

(A)壓力高度與大氣溫度。(B)逆風與落地重量。(C)溼度與煞車磨擦係數。

原始題號:0015861 題組:0 難易度:易

(B) 19. 相較於低密度高度，高密度高度如何及為何影響螺旋槳效率?

(A)因螺旋槳摩擦阻力減小，故效率增加。(B)因螺旋槳在高密度高度所產生的力較低密度高度少，故效率降低。(C)因螺旋槳在較稀薄空氣中需增加動力，故效率降低。

原始題號:0015862 題組:0 難易度:易

(B) 20. 高溼度對航空器性能有何影響?

(A)會提升性能。(B)會降低性能。(C)無影響。

原始題號:0015863 題組:0 難易度:易

(A) 21. 海平面的標準溫度與壓力值為何?

(A)"15°C，29.92" Hg。"(B)59°C，1013.2毫米巴。(C)59°F，29.92毫米巴。

原始題號:0015864 題組:0 難易度:易

(B) 22. 高密度高度對航空器性能有何影響?

(A)增加航空器性能。(B)減少爬升性能。(C)增加起飛性能。

原始題號:0015865 題組:0 難易度:中

(C) 23. 哪種混合大氣狀況會降低航空器起飛與爬升性能?

(A)低溫、低相對溼度、及低密度高度。(B)高溫、低相對溼度、及低密度高度。(C)高溫、高相對溼度、及高密度高度。

原始題號:0015866 題組:0 難易度:易

(B) 24. 上坡面跑道對航空器起飛性能有何影響?

(A)增加起飛速度。(B)增加起飛距離。(C)減少起飛距離。

原始題號:0015867 題組:0 難易度:易

(B) 25. 何種因素將會使一特定機場密度高度增加?

(A)大氣壓力上升。(B)周圍溫度上升。(C)相對溼度減低。

原始題號:0015868 題組:0 難易度:易

(A) 26. 最佳滑翔速度就是在給予一定的____時，可以滑翔最遠距離。

(A)高度。(B)燃料。(C)阻力。

原始題號:0015869 題組:0 難易度:中

(B) 27. 關於地面效應，飛行員必須注意什麼？

(A)翼尖渦流變大造成離場與到場航空器的機尾亂流問題 (B)誘導阻力變小，故在減速點之任何額外空速將造成浮動。(C)全失速落地時使用水平安定面上升的量，要比無地面效應的全失速落地量少。

原始題號:0015870 題組:0 難易度:易

(B) 28. 一架航空器具有穩定特性，則

(A)難以失速。(B)較易控制。(C)不會旋轉。

原始題號:0015871 題組:0 難易度:易

(A) 29. 哪四種力作用於航空器機身以獲得平衡？

(A)非加速飛行期間。(B)航空器加速時。(C)當航空器停放於地面時。

原始題號:0015872 題組:0 難易度:易

(B) 30. 如航空器有穩定天性，則將

(A)不易失速。(B)較易控制。(C)不會進入螺旋。

原始題號:0015873 題組:0 難易度:易

(A) 31. 控制航空器縱軸穩定因素為何？

(A)重心位置相對於升力中心。(B)水平安定面、方向舵及舵平調整片之效能。(C)推力與升力對重力與阻力之關係。

原始題號:0015874 題組:0 難易度:易

(C) 32. 改變機翼的壓力中心將影響航空器的

(A)升/阻比。(B)升力的量。(C)氣動力平衡與操控力。

原始題號:0015875 題組:0 難易度:易

(B) 33. 減低動力且未調整飛操時，造成機鼻下沉原因(T型尾翼除外)為何？

(A)推力與阻力減少時，重心向前位移。(B)自航空器螺旋槳作用在水平安定面的下洗氣流減小，且水平安定面的效能也減少。(C)推力減至低於重力時，升力同時亦減少且機翼已無能力支撐重力。

原始題號:0015876 題組:0 難易度:易

(B) 34. 航空器裝載時中心到達後重心限制線，則飛行員飛行時將遭遇一個不力的特性為

(A)較長的起飛滾行距離。(B)難以自失速狀況改出。(C)在較正常空速高的空速失速。

原始題號:0015877 題組:0 難易度:易

(A) 35. 航空器載重時將重心置於最後限制位置，將使航空器

(A)在所有空速皆較不穩定。(B)低速時較不穩定，但高速時較穩定。(C)高速時較不穩定，但低速時較穩定。

原始題號:0015878 題組:0 難易度:易

(A) 36. 使航空器轉彎的力為何？

(A)水平升力向量。(B)垂直升力向量。(C)離心力。

原始題號:0015879 題組:0 難易度:易

(A) 37. 進場至失速期間，增加負載因素將使航空器

(A)較高速時失速。(B)有螺旋的趨勢。(C)較難以控制。

原始題號:0015880 題組:0 難易度:易

(C) 38. 航空器飛行中的四個飛行基本原理為何？

(A)航空器動力、俯仰角、傾斜角及配平。(B)啟動、滑行、起飛及落地。(C)平直飛行、轉彎、爬升及下降。

原始題號:0015881 題組:0 難易度:易

(B) 39. 如緊急狀況須實施順風落地，則飛行員應預期較快速的

(A)落地空速，較長的滾行距離，及在整個落地滾行權成有較佳的操控性。(B)落地地速，較短的滾行距離，及可能在所望之落地點後方延後落地。(C)落地地速，較短的滾行距離，及可能在所望之落地點前方提早落地。

原始題號:0015882 題組:0 難易度:易

(C) 40. 高度上升時，航空器於特訂構型失速的指示空速將隨

(A)真空速減低而減低。(B)真空速增加而減低。(C)不管高度變化，均維持不變。

原始題號:0015883 題組:0 難易度:易

(C) 41. 為使機身失速，必須將機身置於何種飛行狀態？

(A)單翼低的部分失速。(B)大角度俯衝螺旋。(C)失速。

原始題號:0015884 題組:0 難易度:易

(C) 42. 在向左旋轉期間，哪一個機翼失速？

(A)兩翼均失速。(B)兩翼均不失速。(C)僅左翼失速。

原始題號:0015885 題組:0 難易度:易

(C) 43. 攻角在機翼失速角時則

(A)增加，如果重心前移時。(B)隨淨重增加而改變。(C)不論淨重是否改變，均維持不變。

原始題號:0015886 題組:0 難易度:易

(C) 44. 進場落地期間襟翼的主要功能 之一是

(A)在不增加空速狀況下減少下降角。(B)允許在較高的指示空速下落地。(C)在不增加空速狀況下增加下降角。

原始題號:0015887 題組:0 難易度:易

(A) 45. 襟翼之目的為何？

(A)在不增加空速狀況下，讓飛行員能以更大角度進場落地。(B)減輕飛行員在飛操系統上的持續壓力。(C)減少機翼區域使升力產生變化。

原始題號:0015888 題組:0 難易度:易

(B) 46. 地面效應最可能產生何種問題？

(A)落地期間突然接觸地面。(B)在到達建議起飛空速前已離地。(C)即使空速足以實施正常起飛，仍無法使之離地。

原始題號:0015889 題組:0 難易度:易

(A) 47. 何謂地面效應？

(A)航空器機翼氣流場作用於地表的結果。(B)改變氣流場增加機翼誘導阻力的結果。(C)機翼被干擾的氣流場不再支持航空器飛行的結果。

原始題號:0015890 題組:0 難易度:易

(A) 48. 進場落地期間，因地面效應所造成的機身漂浮現象是可以理解的，當

(A)高度低於翼展長度時。(B)高度為翼展長度兩倍時。(C)高於正常的攻角。

原始題號:0015891 題組:0 難易度:易

(B) 49. 飛行員對地面效應應注意事項為何?

(A)離到場航空器的翼尖渦流增加，造成機尾亂流問題。(B)誘導阻力減少，因此減速時任何額外空速均可認為是漂浮。(C)實施無地面效應的全失速落地，較全失速落地時需要較少量向上的水平安定面量。

原始題號:0015892 題組:0 難易度:易

(C) 50. 翼尖渦流僅在航空器_____時發生。

(A)高空速操作 (B)大載重 (C)產生升力

原始題號:0015893 題組:0 難易度:易

(C) 51. 最大的渦流強度發生在航空器_____時。

(A)小載重、機身表面不潔及空速大 (B)大載重、機身表面不潔及空速大 (C)大載重、機身表面清潔及空速小

原始題號:0015894 題組:0 難易度:易

(A) 52. 大型航空器產生之翼尖渦流將

(A)下沉至航空器下方形成亂流。(B)上升進入航線。(C)上升至跑道起飛或下滑道間。

原始題號:0015895 題組:0 難易度:易

(A) 53. 落地期間需要極注意避免機尾亂流的風為

(A)弱前側風。(B)弱後側風。(C)強頂頭風。

原始題號:0015896 題組:0 難易度:易

(A) 54. 在大型航空器落地後落地的小型航空器，飛行員應保持在_____以避免機尾亂流。

(A)大型航空器進場下滑道上方，並且落在大型航空器落地點前方。(B)大型航空器進場下滑道下方，並且落在大型航空器落地點後方。(C)大型航空器進場下滑道上方，並且落在大型航空器落地點後方。

原始題號:0015897 題組:0 難易度:易

(B) 55. 在使用一大型航空器起飛後之跑道離場，飛行員應將航空器_____以避免機尾亂流。

(A)飛在大型航空器起飛航道下方，並選擇順風起飛。(B)飛在大型航空器起飛航道上，並選擇逆風起飛。(C)飛在大型航空器起飛航道下方，並選擇逆風起飛。

原始題號:0015898 題組:0 難易度:中

(A) 56. 空中拖航淨重700磅重滑翔機的最低許可拖索張力強度須為多少?

(A)560 磅。(B)700磅。(C)"1,000 磅。"

原始題號:0015899 題組:0 難易度:中

(B) 57. "空中拖航淨重1,040磅重滑翔機的最低許可拖索張力強度須為多少?"

(A)502 磅。(B)832 磅。(C)"1,040 磅。"

原始題號:0015900 題組:0 難易度:易

(B) 58. 使用大於滑翔機最大許可作業重量兩倍的拖索時，經核准的安全鏈必須裝置於何處?

(A)僅在拖索繫在滑翔翼的位置。(B)在拖索繫在滑翔翼的位置以及拖索繫在拖曳航空器的位置。(C)僅在拖索繫在拖曳航空器的位置。

原始題號:0015901 題組:0 難易度:中

(C) 59. 空中拖航700磅重的滑翔機時，用來安全鏈結繩索兩端的拖索張力強度須為多少？
(A)850磅。 (B)"1, 040 磅。" (C)"1, 450 磅。"

原始題號:0015902 題組:0 難易度:易

(C) 60. 何種力提供使滑翔機能在空中向前移動？
(A)升力。 (B)向心力。 (C)重力。

原始題號:0015903 題組:0 難易度:易

(B) 61. 為獲得最大地面距離，應使用空速為
(A)最低控制空速 (B)最佳升/阻空速。 (C)最低下降空速。

原始題號:0015904 題組:0 難易度:易

(B) 62. 陣風與亂流對滑翔機空速改變的負載因子有何作用？
(A)空速增加時負載因子減少。 (B)空速增加時負載因子增加。 (C)空速減少時負載因子增加。

原始題號:0015905 題組:0 難易度:中

(B) 63. 如滑翔機的升/組比為23:1，則飄降10哩可非多遠距離？
(A)"2, 400呎。" (B)"2, 600 呎。" (C)"4, 300 呎。"

原始題號:0015906 題組:0 難易度:中

(B) 64. "水上航空器在9哩內消失2, 000呎，則此架航空器的最佳飄降比概略為"
(A)24:1. (B)27:1. (C)30:1.

原始題號:0015907 題組:0 難易度:中

(A) 65. "水上航空器最佳飄降比為30:1，試問消失2, 000呎高度可飄降多少哩？"
(A)10 哩。 (B)15 哩。 (C)21哩。

原始題號:0015908 題組:0 難易度:易

(C) 66. 有關滑翔機之翼剖面，下列敘述何者為真？
(A)上下弧面相同 (B)上半弧面較下半弧面小 (C)上半弧面較下半弧面大

原始題號:0015909 題組:0 難易度:易

(B) 67. 假設滑翔機其姿態保持固定，有關減速板及襟翼的效應，下列敘述何者為真：收起襟翼
(A)會減少滑翔機之失速速度 (B)或放減速板，會增加滑翔機之下降率 (C)或放減速板，會減少滑翔機之下降率

原始題號:0015910 題組:0 難易度:易

(A) 68. 如果攻角增加至臨界值，則機翼所產生之昇力將無法支持滑翔機之重量
(A)無論空速及姿態為何 (B)除非空速維持在失速速度以上 (C)除飛姿態維持在中性水平或以上

原始題號:0015911 題組:0 難易度:易

(B) 69. 飛行中的滑翔機是依靠什麼力量轉彎？
(A)昇力的垂直分量 (B)昇力的水平分量 (C)方向舵上的作用力

原始題號:0015912 題組:0 難易度:易

(B) 70. 兩滑翔機之機翼參數如下

A滑翔機

翼展 = 51呎

平均翼弦長 = 4 呎

B滑翔機

翼展 = 48呎

平均翼弦長 = 3.5呎

請計算兩滑翔機之展弦比，且比較兩滑翔機在低速飛行時的性能

(A)A滑翔機之展弦比為13.7，較B滑翔機會產生較小之昇力及較大之阻力 (B)B滑翔機之展弦比為13.7，較A滑翔機會產生較大之昇力及較小之阻力 (C)B滑翔機之展弦比為12.7 較A滑翔機會產生較小之昇力及較大之阻力

原始題號:0015913 題組:0 難易度:中

(B) 71. 兩滑翔機之機翼參數如下

A滑翔機

翼展 = 48呎

平均翼弦長 = 4.5 呎

B滑翔機

翼展 = 54呎

平均翼弦長 = 3.7呎

請計算兩滑翔機之展弦比，且比較兩滑翔機在低速飛行時的性能

(A)A滑翔機之展弦比為10.6，較B滑翔機會產生較大之昇力及較小之阻力 (B)B滑翔機之展弦比為14.5，較A滑翔機會產生較大之昇力及較小之阻力 (C)B滑翔機之展弦比為10.6 較A滑翔機會產生較小之昇力及較大之阻力

原始題號:0015914 題組:0 難易度:易

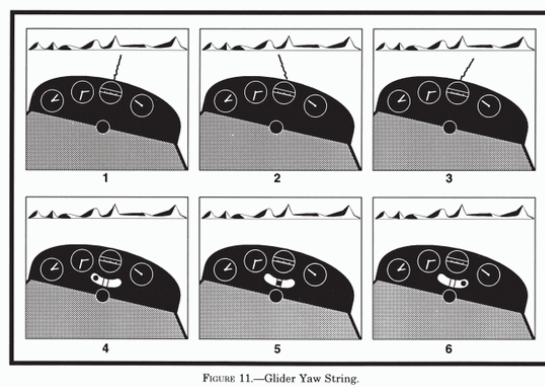
(C) 72. 滑翔機之最大昇阻比會

(A)隨重量不同而改變 (B)維持不變，無論空速如何改變 (C)維持不變，與重量無關

原始題號:0015843 題組:1 難易度:易

(B) 73. (Refer to figure 1.) Which yaw string and inclinometer illustrations indicate a slipping right turn?(如圖A81_fig1)
(A)3 and 6. (B)2 and 6. (C)2 and 4.

題目圖：



原始題號:0015844 題組:1 難易度:中

- (A) 74. (Refer to Figure 2.) What is the headwind component for a landing on Runway 18 if the tower reports the wind as 220° at 30 knots?(如圖A81_fig2)
 (A)19 knots. (B)23 knots. (C)30 knots.

題目圖：

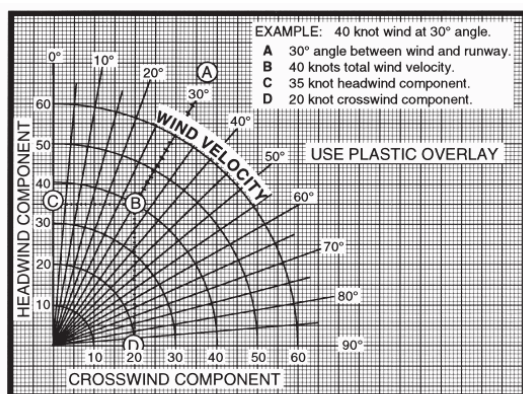


FIGURE 37.—Crosswind Component Graph.

原始題號:0015845 題組:1 難易度:中

- (B) 75. (Refer to figure 3.) How many feet will the glider sink in 1 statute mile at 53 MPH in still air?(如圖A81_fig3)
 (A)144 feet. (B)171 feet. (C)211 feet.

題目圖：

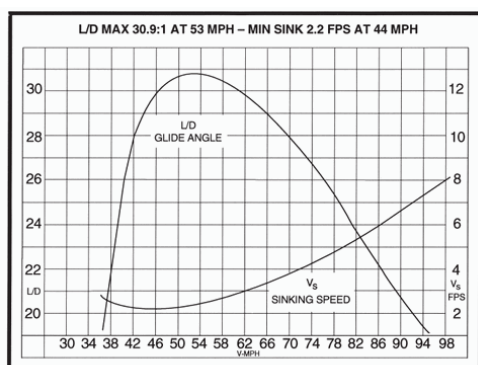


FIGURE 55.—Glider Performance Graph.

原始題號:0015846 題組:2 難易度:中

- (B) 76. (Refer to figure 3.) At what speed will the glider attain a sink rate of 5 feet per second in still air?(如圖A81_fig3)
 (A)75 MPH. (B)79 MPH. (C)84 MPH.

題目圖：

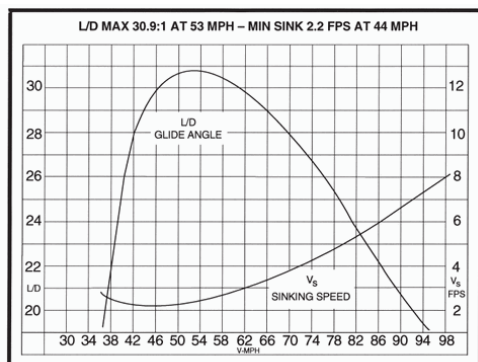
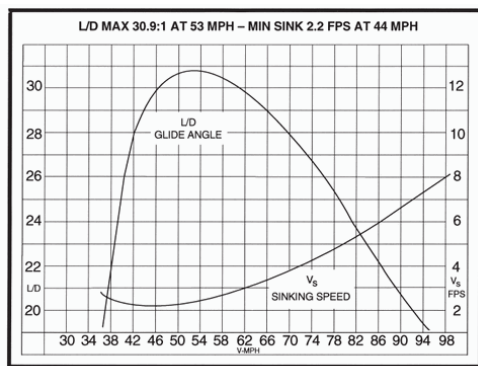


FIGURE 55.—Glider Performance Graph.

原始題號:0015847 題組:3 難易度:中

- (C) 77. (Refer to figure 3.) How many feet will the glider descend at minimum sink speed for 1 statute mile in still air?(如圖A81_fig3)
 (A)132 feet. (B)170 feet. (C)180 feet.

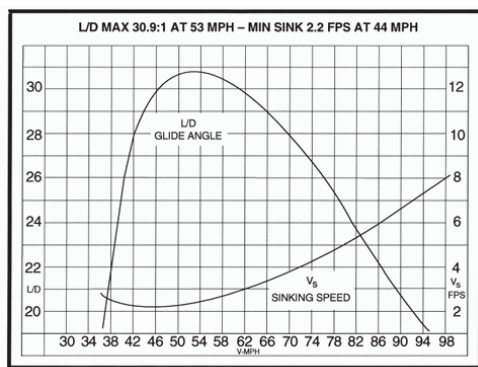
題目圖：



原始題號:0015848 題組:4 難易度:中

- (B) 78. (Refer to figure 3.) At what speed will the glider gain the most distance while descending 1,000 feet in still air?"(如圖A81_fig3)
 (A)44 MPH. (B)53 MPH. (C)83 MPH.

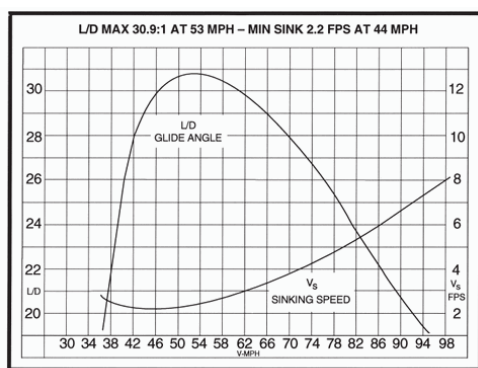
題目圖：



原始題號:0015849 題組:5 難易度:中

- (C) 79. (Refer to figure 3.) What approximate lift/drag ratio will the glider attain at 68 MPH in still air?(如圖A81_fig3)
 (A)10:5:1. (B)21:7:1. (C)28:5:1.

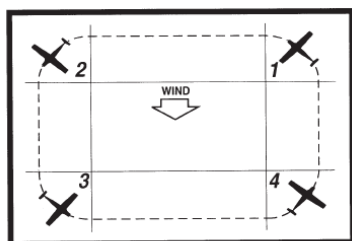
題目圖：



原始題號:0015850 題組:1 難易度:易

- (A) 80. (Refer to Figure 4.) In flying the rectangular course, when would the aircraft be turned less than 90°?"(如圖A81_fig4)
 (A)Corners 1 and 4. (B)Corners 1 and 2. (C)Corners 2 and 4.

題目圖：



原始題號:0015851 題組:1 難易度:易

- (B) 81. (Refer to Figure 5.) While practicing S-turns, a consistently smaller half-circle is made on one side of the road than on the other, and this turn is not completed before crossing the road or reference line. this would most likely occur in turn."(如圖A81_fig5)
- (A)1-2-3 because the bank is decreased too rapidly during the latter part of the turn. (B)4-5-6 because the bank is increased too rapidly during the early part of the turn. (C)4-5-6 because the bank is increased too slowly during the latter part of the turn.

題目圖：

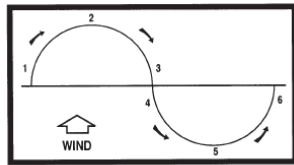


FIGURE 67.—S-Turn Diagram.

原始題號:0015852 題組:1 難易度:易

- (B) 82. (Refer to Figure 6.) The horizontal dashed line from point C to point E represents the(如圖A81_fig6)
- (A)ultimate load factor. (B)positive limit load factor. (C)airspeed range for normal operations.

題目圖：

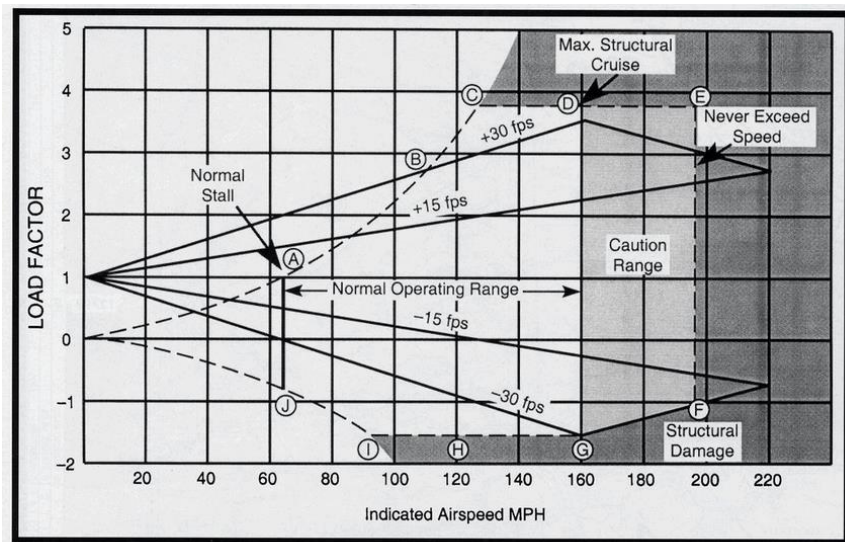
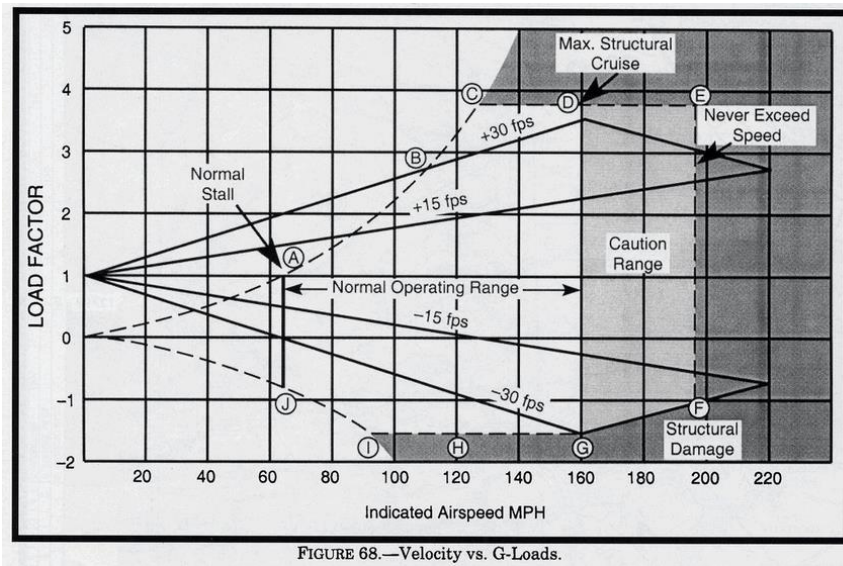


FIGURE 68.—Velocity vs. G-Loads.

原始題號:0015853 題組:2 難易度:易

- (A) 83. (Refer to Figure 6.) The vertical dashed line from point E to point F represented on the airspeed indicator by the(如圖A81_fig6)
- (A)upper limit of the yellow arc. (B)upper limit of the green arc. (C)blue radial line.



原始題號:0015854 題組:0 難易度:易

- (C) 84. Name the four fundamentals involved in maneuvering an aircraft.
 (A)"Power, pitch, bank, and trim." (B)"Thrust, lift, turns, and glides."
 (C)"Straight-and level flight, turns, climbs, and descents."

原始題號:0015855 題組:0 難易度:易

- (B) 85. The angle of attack at which an airfoil stalls will
 (A)increase if the CG is moved forward. (B)remain the same regardless of gross weight.
 (C)change with an increase in gross weight.

原始題號:0015856 題組:0 難易度:易

- (A) 86. The direct cause of every stall is excessive
 (A)angle of attack. (B)density altitude. (C)upward vertical velocity.

原始題號:0015857 題組:0 難易度:易

- (A) 87. "The most critical conditions of takeoff performance are the result of some combination of high gross weight, altitude, temperature, and"
 (A)unfavorable wind. (B)obstacles surrounding the runway. (C)powerplant systems.

原始題號:0015858 題組:0 難易度:易

- (B) 88. What is absolute altitude?
 (A)The altitude read directly from the altimeter. (B)The Vertical distance of the aircraft above the surface. (C)The height above the standard datum plane.

原始題號:0015859 題組:0 難易度:易

- (B) 89. What is density altitude?
 (A)The height above the standard datum plane. (B)The pressure altitude corrected for nonstandard temperature. (C)The altitude read directly from the altimeter.

原始題號:0015860 題組:0 難易度:易

- (A) 90. "Density altitude, and its effect on landing performance, is defined by"
 (A)pressure altitude and ambient temperature. (B)headwind and landing weight.
 (C)humidity and braking friction forces.

原始題號:0015861 題組:0 難易度:易

- (B) 91. "What effect does high density altitude, as compared to low density altitude, have on propeller efficiency and why?"
(A)Efficiency is increased due to less friction on the propeller blades.
(B)Efficiency is reduced because the propeller exerts less force at high density altitudes than at low density altitudes. (C)Efficiency is reduced due to the increased force of the propeller in the thinner air.

原始題號:0015862 題組:0 難易度:易

- (B) 92. "What effect, if any, does high humidity have on aircraft performance?"
(A)It increases performance. (B)It decreases performance. (C)It has no effect on performance.

原始題號:0015863 題組:0 難易度:易

- (A) 93. What are the standard temperature and pressure values for sea level?
(A)"15°C and 29.92" Hg." (B)59°C and 1013.2 millibars. (C)59°F and 29.92 millibars.

原始題號:0015864 題組:0 難易度:易

- (B) 94. What effect does high density altitude have on aircraft performance?
(A)It increases engine performance. (B)It reduces climb performance. (C)It increase takeoff performance.

原始題號:0015865 題組:0 難易度:中

- (C) 95. Which combination of atmospheric conditions will reduce aircraft takeoff and climb performance?
(A)"Low temperature, low relative humidity, and low density altitude." (B)"High temperature, low relative humidity, and low density altitude." (C)"High temperature, High relative humidity, and High density altitude."

原始題號:0015866 題組:0 難易度:易

- (B) 96. What effect does an uphill runway slope have on takeoff performance?
(A)Increases takeoff speed. (B)Increases takeoff distance. (C)Decreases takeoff distance.

原始題號:0015867 題組:0 難易度:易

- (B) 97. Which factor would tend to increase the density altitude at a given airport?
(A)An increase in barometric pressure. (B)An increase in ambient temperature. (C)A decrease in relative humidity.

原始題號:0015868 題組:0 難易度:易

- (A) 98. The best speed to use for a glide is one that will result in the greatest glide distance for a given amount of
(A)altitude. (B)fuel. (C)drag.

原始題號:0015869 題組:0 難易度:中

- (B) 99. What must a pilot be aware of as a result of ground effect?
(A)Wingtip vortices increase creating wake turbulence problems for arriving and departing aircraft. (B)"Induced drag decreases; therefore, any excess speed at the point of flare may cause considerable floating." (C)A full stall landing will require less up elevator deflection than would a full stall when done free of ground effect.

原始題號:0015870 題組:0 難易度:易

- (B) 100. An airplane said to be inherently stable will
(A)be difficult to stall. (B)require less effort to control. (C)not spin.

原始題號:0015871 題組:0 難易度:易

- (A) 101. When are the four forces that act on an airplane in equilibrium?
(A)During unaccelerated flight. (B)When the aircraft is accelerating. (C)When the aircraft is at rest on the ground.

原始題號:0015872 題組:0 難易度:易

- (B) 102. An airplane said to be inherently stable will
(A)be difficult to stall. (B)require less effort to control. (C)not spin.

原始題號:0015873 題組:0 難易度:易

- (A) 103. What determines the longitudinal stability of an airplane?
(A)The location of the CG with respect to the center of lift. (B)"The effectiveness of the horizontal stabilizer, rudder, and rudder trim tab." (C)The relationship of thrust and lift to weight and drag.

原始題號:0015874 題組:0 難易度:易

- (C) 104. Changes in the center of pressure of a wing affect the aircraft's
(A)lift/drag ratio. (B)lifting capacity. (C)aerodynamic balance and controllability.

原始題號:0015875 題組:0 難易度:易

- (B) 105. What causes an airplane (except a T-tail) to pitch nosedown when power is reduced and controls are not adjusted?
(A)The CG shifts forward when thrust and drag are reduced. (B)The downwash on the elevators from the propeller slipstream is reduced and elevator effectiveness is reduced. (C)"When thrust is reduced to less than weight, lift is also reduced and the wings can no longer support the weight."

原始題號:0015876 題組:0 難易度:易

- (B) 106. An airplane has been loaded in such a manner that the CG is located aft of the aft CG limit. One undesirable flight characteristic a pilot might experience with this airplane would be
(A)a longer takeoff run. (B)difficulty in recovering from a stalled condition. (C)stalling at higher-than-normal airspeed.

原始題號:0015877 題組:0 難易度:易

- (A)¹⁰⁷ Loading an airplane to the most aft CG will cause the airplane to be
(A)less stable at all speeds. (B)"less stable at slow speeds, but more stable at high speeds." (C)"less stable at high speeds, but more stable at low speeds."

原始題號:0015878 題組:0 難易度:易

- (A)¹⁰⁸ What force makes an airplane turn?
(A)The horizontal component of lift. (B)The vertical component of lift.
(C)Centrifugal force.

原始題號:0015879 題組:0 難易度:易

- (A)¹⁰⁹ "During an approach to a stall, an increased load factor will cause the aircraft to"
(A)stall at a higher airspeed. (B)have a tendency to spin. (C)be more difficult to control.

原始題號:0015880 題組:0 難易度:易

- (C)¹¹⁰ Select the four flight fundamentals involved in maneuvering an aircraft.
(A)"Aircraft power, pitch, bank, and trim." (B)"Starting, taxiing, takeoff, and landing." (C)"Straight-and level flight, turns, climbs, and descents."

原始題號:0015881 題組:0 難易度:易

- (B)¹¹¹ "If an emergency situation requires a downwind landing, pilots should expect a faster"
(A)"airspeed at touchdown, a longer ground roll, and better control throughout the landing roll." (B)"groundspeed at touchdown, a longer ground roll, and the likelihood of overshooting the desired touchdown point." (C)"groundspeed at touchdown, a shorter ground roll, and the likelihood of undershooting the desired touchdown point."

原始題號:0015882 題組:0 難易度:易

- (C)¹¹² "As altitude increases, the indicated airspeed at which a given airplane stalls in a particular configuration will"
(A)decrease as the true airspeed decreases. (B)decrease as the true airspeed increases. (C)remain the same regardless of altitude.

原始題號:0015883 題組:0 難易度:易

- (C)¹¹³ In what flight condition must an aircraft be placed in order to spin?
(A)Partially stalled with one wing low. (B)In a steep diving spiral. (C)Stalled.

原始題號:0015884 題組:0 難易度:易

- (C)¹¹⁴ "During a spin to the left, which wing(s) is/are stalled?"
(A)Both wings are stalled. (B)Neither wing is stalled. (C)Only the left wing is stalled.

原始題號:0015885 題組:0 難易度:易

- (C) 115. The angle of attack at which an airfoil stalls will
(A)increase if the CG is moved forward. (B)change with an increase in gross weight
(C)remain the same regardless of gross weight.

原始題號:0015886 題組:0 難易度:易

- (C) 116. One of the main functions of flaps during approach and landing is to
(A)decrease the angle of descent without increasing the airspeed. (B)permit
a touchdown at a higher indicated airspeed. (C)Increase the angle of descent
without increasing the airspeed.

原始題號:0015887 題組:0 難易度:易

- (A) 117. What is one purpose of wing flaps?
(A)To enable the pilot to make steeper approaches to a landing without increasing
the airspeed. (B)To relieve the pilot of maintaining continuous pressure on the
controls. (C)To decrease wing area to vary the lift.

原始題號:0015888 題組:0 難易度:易

- (B) 118. Ground effect is most likely to result in which problem?
(A)Setting to the surface abruptly during landing. (B)Becoming airborne before
reaching recommended takeoff speed. (C)Inability to get airborne even though
airspeed is sufficient for normal takeoff needs.

原始題號:0015889 題組:0 難易度:易

- (A) 119. What is ground effect?
(A)The result of the interference of the surface of the Earth with the airflow
patterns about an airplane. (B)The result of an alteration in airflow patterns
increasing induced drag about the wings of an airplane. (C)The result of the
disruption of the airflow patterns about the wings will no longer support the
airplane in flight.

原始題號:0015890 題組:0 難易度:易

- (A) 120. Floating caused by the phenomenon of ground effect will be most realized during
an approach to land when at
(A)less than the length of the wingspan above the surface. (B)twice the length
of the wingspan above the surface. (C)a higher-than-normal angle of attack.

原始題號:0015891 題組:0 難易度:易

- (B) 121. What must a pilot be aware of as a result of ground effect?
(A)Wingtip vortices increase creating wake turbulence problems for arriving and
departing aircraft. (B)"Induced drag decreases; therefore, any excess speed at
the point of flare may cause considerable floating." (C)A full stall landing
will require less up elevator deflection than would a full stall when done free
of ground effect.

原始題號:0015892 題組:0 難易度:易

- (C) 122. Wingtip vortices are created only when an aircraft is
(A)operating at high airspeeds. (B)heavily loaded. (C)developing lift.

原始題號:0015893 題組:0 難易度:易

- (C) 123. The greatest vortex strength occurs when the generating aircraft is
(A)"light, dirty, and fast." (B)"heavy, dirty, and fast." (C)"heavy, clean, and slow."

原始題號:0015894 題組:0 難易度:易

- (A) 124. Wingtip vortices created by large aircraft tend to
(A)sink below the aircraft generating turbulence. (B)rise into the traffic pattern. (C)rise into the takeoff or landing path of a crossing runway.

原始題號:0015895 題組:0 難易度:易

- (A) 125. The wind condition that requires maximum caution when avoiding wake turbulence on landing is a
(A)"light, quartering, headwind." (B)"light, quartering tailwind." (C)strong headwind.

原始題號:0015896 題組:0 難易度:易

- (A) 126. "When landing behind a large aircraft, the pilot should avoid wake turbulence by staying "
(A)above the large aircraft's final approach path and landing beyond the large aircraft's touchdown point. (B)below the large aircraft's final approach path and landing before the large aircraft's touchdown point. (C)above the large aircraft's final approach path and landing before the large aircraft's touchdown point.

原始題號:0015897 題組:0 難易度:易

- (B) 127. "When departing behind a heavy aircraft, the pilot should avoid wake turbulence by maneuvering the aircraft"
(A)below and downwind from the heavy aircraft. (B)above and upwind from the heavy aircraft. (C)below and upwind from the heavy aircraft.

原始題號:0015898 題組:0 難易度:中

- (A) 128. The minimum allowable strength of a towline used for an aerotow of a glider having a certificated gross weight of 700 pounds is
(A)560 pounds. (B)700 pounds. (C)"1,000 pounds."

原始題號:0015899 題組:0 難易度:中

- (B) 129. "The minimum allowable strength of a towline used for an aerotow of a glider having a certificated gross weight of 1,040 pounds is"
(A)502 pounds. (B)832 pounds. (C)"1,040 pounds."

原始題號:0015900 題組:0 難易度:易

- (B) 130. "When using a towline having a breaking strength more than twice the maximum certificated operating weight of the glider, an approved safety link must be installed at what point(s)?"
(A)Only the point where the towline is attached to the glider. (B)The point where the towline is attached to the glider and the point of attachment of the towline to the towplane. (C)Only the point where the towline is attached to the towplane.

原始題號:0015901 題組:0 難易度:中

- (C) 131. "For the aerotow of a glider that weighs 700 pounds, which towrope tensile strength would require the use of safety links at each end of the rope?"
(A)850 pounds. (B)"1,040 pounds." (C)"1,450 pounds."

原始題號:0015902 題組:0 難易度:易

- (C) 132. What force provides the forward motion necessary to move a glider through the air?
(A)Lift. (B)Centripetal force. (C)Gravity.

原始題號:0015903 題組:0 難易度:易

- (B) 133. "To obtain maximum distance over the ground, the airspeed to use is the"
(A)minimum control speed. (B)best lift/drag speed. (C)minimum sink speed.

原始題號:0015904 題組:0 難易度:易

- (B) 134. What effect would gusts and turbulence have on the load factor of a glider with changes in airspeed?
(A)Load factor decreases as airspeed increases. (B)Load factor increases as airspeed increases. (C)Load factor increases as airspeed increases.

原始題號:0015905 題組:0 難易度:中

- (B) 135. How many feet will a glider sink in 10 nautical miles if its lift/drag ratio is 23:1?
(A)"2,400 feet." (B)"2,600 feet." (C)"4,300 feet."

原始題號:0015906 題組:0 難易度:中

- (B) 136. "A sailplane has lost 2,000 feet in 9 nautical miles. The best glide ratio for this sailplane is approximately"
(A)24:1. (B)27:1. (C)30:1.

原始題號:0015907 題組:0 難易度:中

- (A) 137. "A sailplane has a best glide ratio of 30:1. How many nautical miles will the glider travel while losing 2,000 feet?"
(A)10 nautical miles. (B)15 nautical miles. (C)21 nautical miles.

原始題號:0015908 題組:0 難易度:易

- (C) 138. Which is true regarding wing camber of a glider's airfoil? The camber is
(A)the same on both the upper and lower wing surface. (B)less on the upper wing surface than it is on the lower wing surface. (C)greater on the upper wing surface than it is on the lower wing surface.

原始題號:0015909 題組:0 難易度:易

- (B) 139. With regard to the effects of spoilers and wing flaps, which is true if the glider's pitch attitude is held constant when such devices are being operated? (Disregard negative flap angles above neutral position.) Retracting flaps (A)will reduce the glider's stall speed. (B)or extending spoilers will increase the glider's rate of descent. (C)or extending spoilers will decrease the glider's rate of descent.

原始題號:0015910 題組:0 難易度:易

- (A) 140. If the angle of attack is increased beyond the critical angle of attack, the wing will no longer produce sufficient lift to support the weight of the glider (A)regardless of airspeed or pitch attitude. (B)unless the airspeed is greater than the normal stall speed. (C)unless the pitch attitude is on or below the natural horizon.

原始題號:0015911 題組:0 難易度:易

- (B) 141. What force causes the glider to turn in flight?
(A)Vertical component of lift. (B)Horizontal component of lift. (C)Positive yawing movement of the rudder.

原始題號:0015912 題組:0 難易度:易

- (B) 142. Glider A
Wingspan = 51 ft
Average wing chord = 4 ft
Glider B
Wingspan = 48 ft
Average wing chord = 3.5 ft
Determine the correct aspect ratio and its effect on performance at low speeds.
(A)Glider A has aspect ratio of 13.7, and will generate less lift with greater drag than glider B. (B)Glider B has an aspect ratio of 13.7, and will generate greater lift with less drag than glider A. (C)Glider B has an aspect ratio of 12.7, and will generate less lift with greater drag than glider A.

原始題號:0015913 題組:0 難易度:中

(B)¹⁴³. Glider A

Wingspan = 48 ft

Average wing chord = 4.5 ft

Glider B

Wingspan = 54 ft

Average wing chord = 3.7 ft

Determine the correct aspect ratio and its effect on performance at low speeds.

(A)Glider A has aspect ratio of 10.6, and will generate greater lift with less drag than will glider B. (B)Glider B has an aspect ratio of 14.5 , and will generate greater lift with less drag than will glider A. (C)Glider B has an aspect ratio of 10.6, and will generate less lift with greater drag than will glider A.

原始題號:0015914 題組:0 難易度:易

(C)¹⁴⁴. The best L/D ratio of a glider is a value that

(A)varies depending upon the weight being carried. (B)remains constant regardless of airspeed changes. (C) remains constant and is independent of the weight being carried.