

6702

76519 S.F. ROSE

FORM 620

Royal Air Force.

**NOTE BOOK
FOR**

**Workshop & Laboratory
Records.**

T.4771. W. 1865. 175,000 Imp. 5/20. W. & S. Ltd. (7134776).

MULTI-ARMED SPINNERS

SPINNER	ARM NO.	POSITION	LEVEL IN
BRIDGE 10 - 100	01 - 01 (Arm 100)	AGENCY 1000.	CARRIAGE 10
BRIDGE 100	02 - 02 (Arm 100)	AGENCY 1000.	TRUCK 100.
BRIDGE 1000	03 - 03 (Arm 100)	AGENCY 1000.	AGENCY 1000.
BRIDGE 10000	04 - 04 (Arm 100)	AGENCY 1000.	TRUCK 1000.
BRIDGE 100000	05 - 05 (Arm 100)	AGENCY 1000.	AGENCY 10000.
BRIDGE 1000000	06 - 06 (Arm 100)	AGENCY 1000.	TRUCK 10000.
BRIDGE 10000000	07 - 07 (Arm 100)	AGENCY 1000.	AGENCY 100000.
BRIDGE 100000000	08 - 08 (Arm 100)	AGENCY 1000.	TRUCK 100000.
BRIDGE 1000000000	09 - 09 (Arm 100)	AGENCY 1000.	AGENCY 1000000.
BRIDGE 10000000000	10 - 10 (Arm 100)	AGENCY 1000.	TRUCK 1000000.
BRIDGE 100000000000	11 - 11 (Arm 100)	AGENCY 1000.	AGENCY 10000000.
BRIDGE 1000000000000	12 - 12 (Arm 100)	AGENCY 1000.	TRUCK 10000000.
BRIDGE 10000000000000	13 - 13 (Arm 100)	AGENCY 1000.	AGENCY 100000000.
BRIDGE 100000000000000	14 - 14 (Arm 100)	AGENCY 1000.	TRUCK 100000000.
BRIDGE 1000000000000000	15 - 15 (Arm 100)	AGENCY 1000.	AGENCY 1000000000.
BRIDGE 10000000000000000	16 - 16 (Arm 100)	AGENCY 1000.	TRUCK 1000000000.
BRIDGE 100000000000000000	17 - 17 (Arm 100)	AGENCY 1000.	AGENCY 10000000000.
BRIDGE 1000000000000000000	18 - 18 (Arm 100)	AGENCY 1000.	TRUCK 10000000000.
BRIDGE 10000000000000000000	19 - 19 (Arm 100)	AGENCY 1000.	AGENCY 100000000000.
BRIDGE 100000000000000000000	20 - 20 (Arm 100)	AGENCY 1000.	TRUCK 100000000000.
BRIDGE 1000000000000000000000	21 - 21 (Arm 100)	AGENCY 1000.	AGENCY 1000000000000.
BRIDGE 10000000000000000000000	22 - 22 (Arm 100)	AGENCY 1000.	TRUCK 1000000000000.
BRIDGE 100000000000000000000000	23 - 23 (Arm 100)	AGENCY 1000.	AGENCY 10000000000000.
BRIDGE 1000000000000000000000000	24 - 24 (Arm 100)	AGENCY 1000.	TRUCK 10000000000000.
BRIDGE 10000000000000000000000000	25 - 25 (Arm 100)	AGENCY 1000.	AGENCY 100000000000000.
BRIDGE 100000000000000000000000000	26 - 26 (Arm 100)	AGENCY 1000.	TRUCK 100000000000000.
BRIDGE 1000000000000000000000000000	27 - 27 (Arm 100)	AGENCY 1000.	AGENCY 1000000000000000.
BRIDGE 10000000000000000000000000000	28 - 28 (Arm 100)	AGENCY 1000.	TRUCK 1000000000000000.
BRIDGE 100000000000000000000000000000	29 - 29 (Arm 100)	AGENCY 1000.	AGENCY 10000000000000000.
BRIDGE 1000000000000000000000000000000	30 - 30 (Arm 100)	AGENCY 1000.	TRUCK 10000000000000000.
BRIDGE 10000000000000000000000000000000	31 - 31 (Arm 100)	AGENCY 1000.	AGENCY 100000000000000000.
BRIDGE 100000000000000000000000000000000	32 - 32 (Arm 100)	AGENCY 1000.	TRUCK 100000000000000000.
BRIDGE 1000000000000000000000000000000000	33 - 33 (Arm 100)	AGENCY 1000.	AGENCY 1000000000000000000.
BRIDGE 10000000000000000000000000000000000	34 - 34 (Arm 100)	AGENCY 1000.	TRUCK 1000000000000000000.
BRIDGE 100000000000000000000000000000000000	35 - 35 (Arm 100)	AGENCY 1000.	AGENCY 10000000000000000000.
BRIDGE 1000000000000000000000000000000000000	36 - 36 (Arm 100)	AGENCY 1000.	TRUCK 10000000000000000000.
BRIDGE 10000000000000000000000000000000000000	37 - 37 (Arm 100)	AGENCY 1000.	AGENCY 100000000000000000000.
BRIDGE 100000000000000000000000000000000000000	38 - 38 (Arm 100)	AGENCY 1000.	TRUCK 100000000000000000000.
BRIDGE 1000000000000000000000000000000000000000	39 - 39 (Arm 100)	AGENCY 1000.	AGENCY 1000000000000000000000.
BRIDGE 100	40 - 40 (Arm 100)	AGENCY 1000.	TRUCK 1000000000000000000000.

Camouflage

German Upper surface of fuselage a dark olive green, varying in intensity.

Under surface usually light pale blue or lead black.

(wings) Silver and light blue

(tail) all yellow

French Upper and side surfaces similar to our own.

Under surface light blue-grey

(wings) all silver

GERMAN



FRENCH



GERMAN



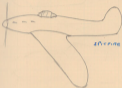
BRITISH





HANSON (20110)

{TWIN ENGINES
TWIN CARRIERS
TWO-TIME SPEED
POSSIBLE



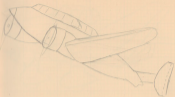
SPRING (20110)

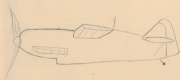
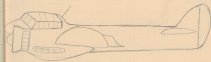
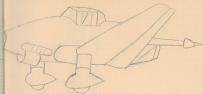


BREDA 82 (20110)

{TWIN ENGINES
TWIN CARRIERS









METEOROLOGY

{ Study and knowledge of the
movement and behavior of
the air.

PHYSICS

(1)

The Atmosphere - The surrounding layer of air 20 miles with the earth as though fixed to the earth's axis. It is a mixture of gases, becoming very rarified at 20 miles high. The mixed gases show no appreciable variation except for water vapor i.e. essentially the residue from frosty drainings etc. Water vapor found in the atmosphere is largely due to evaporation and condensation. The comfortable pressure of vapors by evaporation is dependent on pressure and temperature. Water vapor is lighter than air, if air containing more is lighter than other the air pressure is affected. I.e. is the most important factor in the weather.

Wetness - Means for unit of atmosphere's pressure.
(Pressure would be one of one 4, instead of four 4, gas beyond)

Upper limit of barometer pressure - One millibar is 29 feet (762 mm)

Upper bound of pressure is, part of temperature and upward height
3° for downward feet. (high takes and indicates good
pressure in hot air rising water
with it)

Increase of temp - Increase of temperature with height

Adiabatic - Motion of air without gain or loss of temperature except within itself

WIND, TERRESTRIAL CURRENTS - SURFACES

A wind flow over the earth's surface is not entirely longitudinal due to ascending and descending currents.

Ascending currents - pressure differences

of caused by distribution over an area of land.

1) If distribution is at right angles to wind direction, area of air is forced to flow over uneven protruding ground, or over elevated hills and downward current is produced.

Vertical height of distribution depends on surface relief. If surface is smooth at low height above hills, air will settle within a couple of miles of reaching a north or south or almost stationary and warm air above these masses. This settling may occur most frequently in winter in the great weather unobstructed with an anticyclone.

2) Wind with oblique relation - tendency for ascending velocity in windward and downward velocity toward leeward. Wind at 100 ft. at the windward side, and at 100 ft. on the leeward side. Relation more upward as downward current and the return current due to the lift - a rising of wind at hill summit. Wind velocity is proportional to the slope of the surface with it both then the day anticyclone and the wind speed on the plain at 100 ft. of height with the wind towards the windward. The wind flow over hills becomes generally turbulent and the more abrupt hills are depressions of windward.

3) Wind flow over hills with a slight breeze is more turbulent than in the case of a hill. The air may pass for a considerable distance to leeward causing dangerous flying conditions. An example of a disturbance of the kind is found in the wind currents over the top of Mt. Vesuvius.



4. THERMAL CURRENTS - vertical currents produced by heating of earth surface by sun. In a fine morning, a lake and ground rapidly become heated evenly. If it were then to approach the sun, the air particles which were settling on the ground would be raised and in consequence would be ascending above the surface. If it were then to approach the sun, the air particles which were settling on the ground would be raised and in consequence would be ascending above the surface. If it were then to approach the sun, the air particles which were settling on the ground would be raised and in consequence would be ascending above the surface.

5. MOISTURE CURRENTS - are caused by evaporation which is dependent on nature of surface. Air is raised and in consequence would be ascending above the surface. If it were then to approach the sun, the air particles which were settling on the ground would be raised and in consequence would be ascending above the surface.

6. WIND CURRENTS - in small regions where there are hills, the wind is carried up and down by surface friction. Windy to the downward direction. The upward is the opposite. Windy to the windward direction. Windy to the downward direction. The upward is the opposite. Windy to the windward direction. Windy to the downward direction. The upward is the opposite.

Pressure - Due to weight of air, it is heavier at lower altitudes. Higher altitudes - air has less weight of air above it. Pressure is lower.

Temperature of air - Heat radiated from ground heated by sun's rays. Usually decreases with height.

Velocity due to temperature - This is established and the history is fairly dynamic. If a sample of air is compressed the temperature rises, if expanded the temperature decreases. Dynamical change is important for the great winds. With the formation of clouds and rain. Dynamical cooling is the result of which rising air loses temperature.

Vertical Expansion gradient - In 100 ft. air falls off at rate of 1° for every 100'. General rule. lapse is ascending air is 1° for every 100'.

Temp. Inversion - Occasionally air increases in temperature with height. This does not necessarily commence near the ground.

Base Point - That height at which unobstructed air becomes radiated.

Humidity - Absolute - Actual water vapour content per particle of air. Relative - Defined as ratio of actual amount of water vapour present in a given sample of air to the amount of water vapour the same particle of air would hold if radiated at the same temperature. Maximum of relative humidity - (example - not a dry climate) - air not transparent in evening the dry temperature the air is nearly radiated and fog or mist is probable.

LOCAL WINDS INDEPENDENT OF DEPRESSION FORECASTS

1. ANNEAUX - On clear day air on hills being warmer than air over the valleys at same height, due to air able flow up the valleys to take place of the rising air. Such an effect is called the Anabatic wind.

2. KATHARINE - On clear night ground becomes cooled by radiation to sky and air in contact with ground subsequently becomes cooled. In radiating away air on side of hills, being able to flow down at the same height over the valley, air flows down the slope under gravity causing local wind. The direction of the wind (ANABATIC) is determined by slope of hill and may have no relation to general pressure distribution. Under favorable conditions about noon, wind that of greatest wind, especially if pressure gradient due to augment the influence of the hill.

3. SAND AND SANDWICH. During the day the land surface warms faster than water because water has a greater capacity for heat. Because warm air rises, the air over the land is lighter than air over water and wind blows relatively from the warmer to the cooler air. This is called the sea breeze. The force here is an accumulation of air over land is not possible a compensating volume of air at higher levels must result. In the British Isles the sea breeze may amount to 10-15 mph, and is composed of air of great moisture content. Strength of sea breeze depends on height at 100 ft and is unappreciable at 1000 ft. The water surface is not warm enough to affect air circulation. In the British Isles the development of sea breeze is much more pronounced. It may extend to several thousand feet, reaching a strength of 20 mph, and being a very dry wind, due to the fact of a relatively small amount of air being raised to great heights. At night conditions are reversed, land surface becoming cooler than the sea, the surface wind then blows from land to sea and is great with the wind over the sea being but with a relatively small velocity.

Weather chart (Synoptic chart) made up of observations taken simultaneously which are brought together and shown in the form of symbols on maps.

Isobars - A line drawn on a weather chart which represents the same barometric pressure throughout that line. (To the amount of millibars) these give on a light chart are reduced to mean sea level pressure.

Bay Gullies law. If standing with back to weather barometer pressure is lower on left hand than right - windward of back is to weather barometer.

Wind forecast of air from high to low pressure. Speed of same is dependent on distance between the two different pressures.

Gradient wind. Wind at 1000 feet.

Isobars show direction of wind at 1000 feet in wind follows isobars at that height but at surface surface wind blows towards area of low pressure.

The direction of the surface wind is opposed to that at 1000' due to friction with the earth's surface, the friction adds, pushes it backward. If there was no turbulence in air friction, the wind would blow as a steady current with surface ahead and direction. It is not affected by temperature and relative to a great height in the day than at night.

④ TYPE OF CLOUD

SEAS ^m	HIGH	MEDIUM	LOW	VERTICAL EXTENSION
MEAN WIND LEVEL	40,000'	20,000'	7,000'	30,000'
MEAN WIND LEVEL	20,000'	7,000'	4,000'	1500'
TYPE	CIRRO ALTO CU. ST.	ALTO CU. ALTO ST.	ST. CU. ALTO ST.	CU. CU. CU. ST.

Amount of cloud always indicated in tenths of clear sky as with 8 clouds indicated by 8/10. Sky almost normal but a few changes.

5 Methods of measuring cloud height

1. Altimeter
2. Parallax
3. Barometer
4. Pilot balloon method
5. Stroboscope method
6. Cloudometer
7. Cloud height gauge
8. Cloud height indicator
9. Cloud height indicator
10. Cloud height indicator

3. Stroboscope method at night

Visibility

To classified by a wind figure in letters into figure from 0 to 10. 0 = dense fog.
 1. Thick fog 2. Fog 3. Mist 4. Mist - haze 5. Low visibility.
 6. Moderate visibility 7. V. Moderate visibility 8. Very good visibility.
 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837. 838. 839. 840. 841. 842. 843. 844. 845. 846. 847. 848. 849. 850. 851. 852. 853. 854. 855. 856. 857. 858. 859. 860. 861. 862. 863. 864. 865. 866. 867. 868. 869. 870. 871. 872. 873. 874. 875. 876. 877. 878. 879. 880. 881. 882. 883. 884. 885. 886. 887. 888. 889. 890. 891. 892. 893. 894. 895. 896. 897. 898. 899. 900. 901. 902. 903. 904. 905. 906. 907. 908. 909. 910. 911. 912. 913. 914. 915. 916. 917. 918. 919. 920. 921. 922. 923. 924. 925. 926. 927. 928. 929. 930. 931. 932. 933. 934. 935. 936. 937. 938. 939. 940. 941. 942. 943. 944. 945. 946. 947. 948. 949. 950. 951. 952. 953. 954. 955. 956. 957. 958. 959. 960. 961. 962. 963. 964. 965. 966. 967. 968. 969. 970. 971. 972. 973. 974. 975. 976. 977. 978. 979. 980. 981. 982. 983. 984. 985. 986. 987. 988. 989. 990. 991. 992. 993. 994. 995. 996. 997. 998. 999. 1000.

1. CIRRO (CI) - Piled cloud, actual stream appearance, no shading, mostly white or colour - milky appearance. (Clouds) but with light ends, often at higher level.
2. CIRROSTRATUS (CS) - Thin white veil, does not fill surface of sun or moon, but gives rise to halos. Uniform sheet, very high - above 30000'.
3. CIRROCUMULUS (CC) - In scattered they consist of strands in waves, might cover sun or moon. Uniform layer composed of small white flakes or of very small globular masses, no shading, arranged in groups or lines or ripples usually seen in the sun disc.
4. ALTOCUMULUS (AC) - Layer of large strands in waves at middle height. Smaller elements of regularly arranged layer fairly small and thin, with or without shading.
5. ALTOSTRATUS (AS) - Sheet at middle height - continuous. Striated or fibrous veil, grey or bluish colour. Not thick veil but without dark shading.
6. STRATOCUMULUS (SC) - Layer of clouds in irregular mass below 2000'. Patch in fibrous masses. Smallest of irregularly arranged elements fairly large, often soft and grey, with dark parts. One or two in height as 2000'.
7. FRIGUS (FG) - Straggled cloud - base below 5000'. rain falling.
8. CONVULS (CV) - Piled cloud with flat base at mean height above cloud at 100' at mean height above 5000'. Thick with vertical development. 10000' - 20000'.
9. STRATOCUMULUS (ST) - Straggled cloud. Heavy masses with great vertical development forming mountains or trees, other part lower following. Continues and often spreading out in shape of an oval. 10000' - 20000'.
10. STRATUS (ST) - Thin sheet of low cloud; below 2000 ft. Resembles fog but does not rest on ground. Sometimes is horizontally sheet down to the surface.

The most important element from another point of view.

Causes - Condensation of water vapour in surface layers of atmosphere

1. Falls or dew fall in suspension in the air.
2. Condensation of water vapour and smoke.

Definition of fog - the condensation of atmospheric steam which is held in solution by a substance (usually water) and which would be held in solution if not for the presence of a substance which is called "mist" or "fog" according to whether it is caused by condensed water particles or by solid matter i.e. dust or smoke.

Condensation of water vapour in surface layers is caused by the cooling of air below its dew point, this may be due to - 1) cooling of surface of ground or sea which is communicated to air above it. 2) by lift of air over surface which is colder than itself, or by the mixing of two masses of air with different temperatures and humidities. In first case some ground causes an inversion in ground in lower layers of air which effectively prevents the air from rising freely. But rising due to slight variations may cause the cooling and condensation elsewhere through surface layers. In second case formation of fog the wind will be light in order to allow air to rise ground to become sufficiently cooled. Then wind also to sufficient motion in the air for the cooling to produce condensation. The nature of the ground therefore has a bearing on the likelihood of occurrence of fog.

Dispersion - chiefly in surface and water over the ground, most frequently in calm, clear nights, resulting sometimes internally, especially in the early morning 1-2 hrs after sunrise and sometimes by light winds, at sea they are characteristic of spring and summer, usually formed by the passage of a mass of air from a large land mass or from tropical regions over the sea which, at the source is saturated with heat & light, thence they usually come with some small-scale winds, by radiatingly cooling, fog may form at all seasons due to the lifting of hot land but fog ground large ground areas and surface water in the winter.

11. ATMOSPHERIC CIRCULATION. - Global - global bands of circulation at the (ground level) atmosphere level. (2)

12. AUTOMORPHOUS CIRCULATION. - Both circulate vertically rising in morning (1000 ft) (ground level) back from a mass or low compact layer of atmosphere.

13. PROCTON-COOPER (Sea). - A series of wiggled circles. (1000 ft)

WIND - WIND CURVES - wind near base level of 10,000 ft., near surface 10,000.

WIND AT 10000 FT. - with near upper level of 10,000 ft., near surface level of 10,000 ft.

WIND AT 1000 FT. - with near upper level of 1,000 ft., near lower level close to ground.

Height given here as for theoretical calculation and not a real level, but to the ground level of the land in the region.

In certain cases there may be large departures from the given height, especially as regards 10000, the upper level of which may be 10,000' or more in the tropics but the lower level of which may be as little as 1000' in temperate latitudes, and in polar regions almost as low as the surface.

Relationship between Surface and Wind. - given by J. J. Ballou's law,

was named because first laid down by Prof. J. J. Ballou



1000 ft
Surface
wind



10000 ft
Surface
wind

Height h is very small and is the angle between the surface wind and wind at 10000'. Both curves angle is constant. Close together curves - the steeper the wind in gradient is steeper - in wind close surface line. Speed of wind is proportional to the pressure gradient.

METEOROLOGICAL REPORT — FORM 2830 (REVISED 1967)

Pilot contemplating a cross country flight of more than 100 miles must first fill in a form based from the meteorological report printed in the flight room.

| STAGE | TIME | WINDSPEED | WINDSPEED | | | | | | | |
|-------|------|-----------|-----------|---------|---------|---------|---------|---------|---------|---------|
| | | | 0-100 | 100-200 | 200-300 | 300-400 | 400-500 | 500-600 | 600-700 | 700-800 |
| | | From | Hour 1 | Hour 2 | Hour 3 | Hour 4 | Hour 5 | Hour 6 | Hour 7 | Hour 8 |
| | | | | | | | | | | |
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Remarks: Several microbursts (multi, etc)

NO WEATHER

| Automatic Release of this report | | |
|----------------------------------|--------|-------------|
| STATUS | REASON | RELEASED BY |
| | | |
| | | |
| | | |
| | | |

Issued at at hour. Revised at hour. Rec. issued at at hour. Revised at hour.

Effect rotation of earth has a wind.

(9)

Course of wind: Geostrophical force from high to low pressure. this would mean in a direct line of force from high to low pressure were it not for the rotation of the earth causing friction between land and air. Earth rotates around its axis & today in the northern hemisphere it would be the right, in the S hemisphere to the left - known as geostrophical's right-hand-rule.

Effect of surface pressure increases for

Greater the surface friction the greater will be the deflection of the wind from the direction of the surface - this accounts for deflection being least over the sea.

Surface wind not only differ with direction of surface but in speed as well - this is known as the diurnal variation of wind - caused by surface wind disturbing air at 1000'. 1000' wind gives some of its energy to surface wind therefore surface wind increases in speed. After sunset surface wind speed decreases, 1000' wind increases.

Upper wind direction reverses by day & back during night.

Force & direction = sea breeze.

- Causes - a distinct cause.
1. Directional effect of irregularities over ground.
 2. Perturbations of normal origin, associated with lakes etc.

Differences in force & quality: Fast water increases in speed of wind not lasting for more than a few minutes.

Small changes of wind lasting for many minutes and speed of wind like other normally.

Land and sea breeze: Caused by sea shining on land, air rises from land - air from sea rushes to land. Effect during night. Lake breeze are nothing more than land and sea breeze.

Latitude & atmospheric wind

| Tree
Type | Structure of
crown | Amount of
growth (circumference
at 100 ft
July 1910) | Frequency
of
loss | Amount of
growth (circumference
at 100 ft
July 1910) | Structure
of
crown | Amount of
growth (circumference
at 100 ft
July 1910) |
|--------------|-----------------------|---|-------------------------|---|--------------------------|---|
| | | | | | | |

Note - In order to show amount of growth, measurements taken on several logs in general height of trees and
 all of limbs and branches of tree would be taken, etc. - giving picture of growth and loss. Also very wide measured
 by simply giving tree and height, should give desired to show in following -

Number of trees in stand 100
 Number of trees in stand 50
 Number of trees in stand 20
 Number of trees in stand 10
 Number of trees in stand 5
 Number of trees in stand 2
 Number of trees in stand 1

Ice Anomies

Case 1906

- 1. Equivalent to low forest
- 2. " " " " "
- 3. Midway between pine and spruce
- 4. Equivalent to spruce

Conditions of formation

- 1. Growth depends from old C. cone large
- 2. Foliage is thin or other small shrubs
- 3. Low or low thick shrubs
- 4. The condition of bark, inside usually covered with a frost.

Notes

To avoid ice anomalies keep close of records in winter from -20 to -30, fog, rain etc. and avoid altitudes at which the trees are better at 1000 ft or 1500 ft.

Notes on observations on 1910

Causes of various records

Have the method of selection & measurement of smaller trees by 100
 ft not in use. Use the method by Libby - 100 ft could have been
 used but not practical because long delay in recording.

Discussion



In fact a possible and group relation is a particular geographical
 region. In the way the forest stands (not only at 100 ft) can occur from
 and it, all group relation, neither equal, which in turn are collected from
 and sent to the meteorological station. Below forest vegetation, forest and forest
 relation unchanged weather reports.

| Character symbol | Symbol used on code | Meaning |
|------------------|---------------------|--|
| 1 | - | Blue sky, clear or light stratus |
| 2 | - | Sky partly cloudy |
| 3 | - | Cloudy detached clouds with drizzle |
| 4 | + | Drizzle |
| 5 | - | Light rain without rain falling - a uniform sheet of rain on thin, building and weather improves |
| 6 | ☁ | Very range of visibility less than 1000 yds. |
| 7 | - | Fog |
| 8 | ▲ | Rain |
| 9 | ▼ | Sifting |
| 0 | ☐ | Wide range of visibility 1000 yds up to 2000 yds. |
| 1 | - | Overcast - no information about |
| 2 | + | Raining clouds or rain |
| 3 | - | Squalls |
| 4 | - | Low stratus |
| 5 | ● | Rain |
| 6 | ☼ | Sleet, rain and snow together |
| 7 | ● | Snow |
| 8 | - | Fog |
| 9 | ☁ | Thunder |
| 0 | ☁ | Thunderstorm |
| 1 | - | Light threatening sky |
| 2 | ☁ | Dimmed visibility of distant objects |
| 3 | ☁ | Dark |
| 4 | ☁ | Very dark |
| 5 | ☁ | Very dim, low cloud 100, visibility |
| 6 | ☁ | Very - range visibility 1000 - 2000 yds. |

REGULATIONS, COMPENSATION & DISPOSAL OF PASSENGERS BY A.O.P.

- 1 For flights in Gt Britain
- 2 For flights outside British territorial waters.
 - a. In all flights of over 100 miles from a base - from 200 miles to be carried by each aircraft.

1. Flights in Gt Britain.

Compensation - Pilot carries station has a qualified first-aid certificate on duty, when a flight is contemplated requiring a person 2000 the pilot will be that the route and approximate time of flight. The pilot then prepares and checks it by signing up a ground station when further information is needed from the Pilot's office at the station. Information is obtained from ground station by:-
 (a) The Pilot's office at the station } information is obtained from
 (b) The Pilot's office at the station }
 It is the Pilot's responsibility to get information from 2000 from information posted in the 'control room' on the form the Pilot should give:-

- 1 Ground weather conditions on flight
 - 2 Visibility
 - 3 Cloud height - amount and type
 - 4 Winds at specified heights - usually 5000 and 10000 feet
 - 5 Changing trends and heights at which there is no change of wind in weather.
 - 6 In addition, observations from 2000 at base including no route.
- In other cases the Pilot officer will refer from 2000.

2. Compensation on routes.

1. Airways make periodic observations, usually every 30 miles and when there is a change of from 2000
2. Observations include a 1000 miles of observation (10 miles of the Airways)
3. Observations of cloud amount & type above & below 1000 ft. & any other necessary remarks.

INFORMATION

On return to base from 2300 is handed in to Nat. office by the Navigator. Information there is then placed or telephoned to Group Station which in turn sends it on to Control Station.

The forms at each station are collected & forwarded at the end of each month. If A/C lands at a different base the Nat. office at the landing base informs its own group station and forwards from 2300 to A/C's own base & information there is disposed of as above.

On special flights the Nat. information is usually received by group station.

8. CASUALTY REPORTS DURING OPERATIONAL WARDS.

Procedure as in 'D' but with following exceptions:-

1) For operational flights Group prepares Report and it is transmitted & Sub. return by telephone.

2) To prevent weather information falling into enemy hands the following are omitted from form 2300.

a) Call-sign of base & Squadron etc.

b) Barometric pressure at base & points en route.

c) Weather information collected en route is only written down when returning from scenes of operation or when enemy action has ceased.

d) Barometric pressure at base & at scenes of operation are omitted & necessary by the pilot or must not, in any event be written down.

INFORM

Report is as in 'D' but from 2300 are collected & sent to Group immediately by dispatch rider and not at the end of the month.