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FTT/Lt Col Howe/28031

16 Feb 1962

Aerospace Research Pilot Course Support

FTO (Col Tice)

1. I am very concerned about the position this Center is taking with respect to the support it will give to the Aerospace Research Pilot School. AFR 53-19 "USAF Aerospace Research Pilot School" assigned to AFSC the responsibility for operation and supervision of the Aerospace Research Pilot School. AFSC Supplement to this regulation assigns to AFFTC responsibility only for the operation of the School, the supervision responsibility is not delegated further by Hq AFSC. More on this point and its impact on management responsibility will be discussed further within this memorandum.

2. Our expressed concept of the future AFFTC mission role is very aptly described by the term "Spaceport, U.S.A.". The AFFTC is now just embarking on this new role in its operation of the Aerospace Research Pilot Course. Your point in yesterday's briefing that interest in the course has mushroomed beyond anything expected is very true. I attribute this mushrooming to the keen interest in manned space operation that exists both within USAF and Hq AFSC circles. I personally have observed this interest. No dimming of this interest was displayed during my recent visit to Washington when immediate funding and manpower requirements for the Aerospace Course were submitted. Air Force is going after the manned space mission roles, and an active in-being Aerospace Research Pilot Course is visible, tangible proof to an interested American public that an Air Force mission capability for this role is now in existence. I feel that you as DCS/O for AFFTC must take a firm, positive stand that this Course will be supported to the fullest extent by this Center, even at the expense of present mission roles. This Course should be treated in accordance with the priority AFSC has attached to it and not in accordance with the thoughts and desires expressed locally. If Hq AFSC felt as strongly about our other present mission efforts as it feels about the School, I am certain their support for these other efforts would be forthcoming in a much more bountiful manner.

3. I had the opportunity to discuss at some length with Colonel Ben W. Hunsaker, Director of Resources, Deputy Chief of Staff, Plans at Hq AFSC, his feelings on the subject "Recovery Control Center". He

expressed the following:

a. There will be an RCC.

b. The RCC and the Aerospace Research Pilot School should be complementary functions co-existing at the same base.

c. Maximum joint utilization of support facilities by both activities should be employed wherever possible.

d. Space vehicle recovery is the present role for an RCC, but space vehicle launch will be a natural follow-on.

e. AFFTC is in a most favorable position to be selected as the RCC site both for recovery and future launch. Col Hunsaker would push it for its selection over Holloman.

f. AFFTC should take definite action to get its house in order now so that it will be ready for this manned space role when final selection of a site will be made.

I asked specifically about item f. The inference here is that all mission effort not directly in support of the future role of manned space vehicle testing should be programmed out of AFFTC. This, unfortunately, is directed toward such items as our track and parachute test facilities. Concentration should be made on continuing our Category II testing capability, especially for the B-70 and TFX and prepare ourselves for this testing of manned spacecraft. Concurrently we should develop and expand our RCC and Aerospace Research Pilot School capability. The transfer of these non-mission elements out of AFFTC will make the task of securing needed manpower and funding support for the remaining mission elements a much easier task.

4. I must express my personal conviction and that of my staff, that there now exists within AFFTC a great deal of built-in, self-generated headwind with respect to getting behind the Aerospace Research Pilot School and giving it forceful, vigorous Center support. Frankly, a point in being is computer support for the School. In our early planning stages, we were advised that computer support could be provided by the Directorate of Flight Test. This was expressed by memorandum to me. The contemplated future support of the School by FTF was used as additional justification for securing a new Pace analog computer which is included in the AFFTC 2nd quarter Financial Plan. It now comes to light that FTF cannot provide this support because this computer, as well as the present analog computer will be required 16 hours/day for Dyna-Soar support. This has caused us to reprogram within the School for

an additional analog computer which is included in our FY 1963 $6.6 million package. We are unable, however, to do anything about our immediate analog computer support requirement. We must have access to an analog computer to tie in to our interim static space simulator. The need is immediate and will last through June 1963 at which time we should have our static space simulator. FTF can provide this support with their GEDA analog computer. We understand the new Pace analog computer will be in place at AFFTC somewhere within the mid part of this calendar year. We question very strongly the expressed position that FTF cannot possible give us GEDA computer support both prior and subsequent to the time the Pace computer is in operation. Our indications are that this is possible if the effort were made to do so. A further factor bearing on this is that Holloman can tentatively give us this support with present manpower. As you know, General Branch will not even consider this Holloman support, FTF should fully justify to the satisfaction of everyone within this Center their expressed position on non-availability of GEDA computer support to the School. In General Branch's presentation on School support to AFSC this next week, he should be fully briefed on this point, because it will certainly come under question.

5. I was considerably surprised at the idea expressed at Thursday's briefing of not accepting HQ USAF funding augmentation of $500,000 for F-104 rocket engine modification because of the implication that the $6.6 million FY 1963 funds reprogramming for the School might have to be borne most heavily by AFFTC. It was pointed out in Paragraph 1 above that supervision responsibility for the School is assigned by regulation to Hq AFSC and this responsibility has not been redelegated to this Center. Funding as well as manpower support are considered areas of supervision responsibility. With respect to the School, these areas, therefore, are primarily a concern of Hq AFSC. In my discussion of this problem at Hq AFSC, I feel this fact is clearly understood. Colonel William R. Clough, Director of Manpower and Organization, Hq AFSC recognized this responsibility as it pertains to manpower. Major General R. J. Friedman, Deputy Chief of Staff, Comptroller, Hq AFSC is certainly aware of this responsibility and so reflected it when he asked Hq USAF for

funding support for the School. If Hq AFSC asks this Center to reprogram its funding within FY 1963 to support this School, it is only because this Center's programs are vulnerable to reprogramming action, and not because the Center is considered to have supervision responsibility for the School.

6. In conclusion, speaking as Commandant of the Aerospace Research Pilot School, I feel I must make the following recommendations to you as your considered course of action with respect to support of the School:

a. AFFTC is vitally interested in the Aerospace Research Pilot School and will take definite, positive steps wherever possible to prosecute the mission of the School in keeping with the expressed desires and direction of Hq AFSC especially as it pertains to the Aerospace Research Pilot Course.

b. This Center will look to Hq AFSC for the fulfillment of its areas of supervision responsibility.

c. The Aerospace Research Pilot School will be considered as a USAF school located at Edwards AFB for which the AFFTC has operation responsibility only. The School is not to be considered an integral organization within the AFFTC. Operation of the School will be in the interest of the Air Force and AFSC and not in the interest of AFFTC alone.

ROBERT M. HOWE, Lt Colonel, USAF
Commandant

Memo for Record:

Subject: Expansion of Aerospace Research
Pilots School

1. Currently, there is staff action at the DCS/Plans level, USAF, to increase annual output of the AFPS to provide a pool of qualified astronauts to fill not only USAF needs but to satisfy NASA and other agency requirements as well. This action is of a crash nature purportedly as a result of Chief of Staff questioning as to why the Air Force space had been occupied primarily by Navy troops to date. Lt Gen Burchinal is crewchief on the project with Brig. Gen Page heading up a Military Man in Space panel. The primary purpose of this panel for the past 10 days has been to plan for control of space through control of technician and pilot skills required for operation of manned space vehicles.

2. On 28 May, I entered in the activities at a meeting in the Pentagon in which Lt Col Howe and his people made a presentation on the maximum number of students that could be graduated from the AFPS in the 1962-1966 time period.

PANEL ATTENDEES, 28 MAY MEETING

Col.	John Lee	AFXPD
Col.	Jack Tueller	AFOOP
Col.	L. H. Lyman	AFXPD
Col.	H. W. Massengale	AFPTR
Col.	J. S. Dingy	AFPTR
Col.	J. F. Anderson	AFPDP-1
Col.	Clay Tice	AFTTC/TTO
Col.	K. Mantz	AFSC/SCP
L/C	R. Howe	AFTTC/TTT
Maj	R. Cullen	AFSC/SCPT
Capt	P. Beale	AFTTC/TTT

This study was not based on astronaut requirements but on a feasible build-up rate based on resources, lead-times for facilities and equipment, and required personnel actions. This maximum program builds from the 8 students entering in June 1962, to a special course of 10 (NASA) in September 1962, to 16 in 1963. These astronaut students would be in addition to the normal test pilot output.

In 1964 the Test Pilot and Astronaut courses would be combined and output increased to two classes of 32 each per year with a further expansion to two classes of 48 each per year by the end of 1965. Despite the fact that resource cost of such an expansion would be approximately $20 million, 45 additional A/C and over 300 manpower spaces, we were informed that we weren't thinking big enough if we were providing only 272 astronauts for the AF by 1966. I pointed out that we would not be producing 272 astronauts because starting in 1964 (or late 63), a substantial number of graduates would be required to meet aircraft test requirements. Col Lee stated that he could

not foresee any requirement for aircraft test pilots after the next year or two and that the total school effort should be devoted to astronaut production. This opportunity was worth the trip and I interrupted the proceedings for 15 minutes with a blackboard briefing of the center mission, work in progress, firm future work load and then into a discussion of a realistic plan calling for integration of support facilities and equipment, for both school and aero-space test, into a central facility to be called the Recovery Center. There was no more comment on deletion of test pilot training.

Col Lee's instructions to the AFSC group, following additional discussion, were to prepare a plan (a) for a course involving the minimum number of students required to maintain a state-of-the-art status; (b) for the production of astronauts to meet the Panel's requirement list as follows below; and (c) for the maximum output possible.

REQUIREMENTS	1963	1964	1965	1966
Military Orbital Developments	15	15	15	15
Dyna-Soar	3	3	6	12
621A	5	5	5	5
Manned Hypersonic Test Vehicle	5	-	-	-
Orion	-	-	-	5
Hq USAF (Staff)	4	-	-	-
Hq AFSC (Staff)	4	-	-	-
Hq SAC (Staff)	2	-	-	-
Hq ATC (Staff)	2	-	-	-
Hq ADC (Staff)	2	-	-	-
AMPS	3	6	9	12
Mercury	-	-	-	7
Gemini	10	-	-	-
Apollo	10	-	-	-
3/man Space Vehicle	10	-	-	-
	72	23	35	57
plus Attrition	3	3	3	3
plus Test Pilots	24	24	24	24
plus NASO/Industry	8	8	8	8
	107	58	61	72

I admitted the requirement for qualified astronautical engineers in other than cockpit positions, particularly in systems engineering, support systems engineering, recovery and command control, and similar activities but questioned whether we could support the deletion of limited technological resources by using these people for staff purposes or for assignment to projects that would not become firm programs.

3. Following this meeting, the AFFTC contingent decided that the MWP 922A-9060 calling for a class of 8 in '62, 8 in '63, 12 in '64, 15 in '65 and 30 in '66 met the minimal USAF astronaut requirement and that our expansion

proposal building to 96 per year in 1966 was the maximum. The total USAF requirement was probably somewhere in-between but was certainly not the requirement as stated by the panel as per previous paragraph. This requirement could be determined only by further study. A meeting with M/Gen Ritland, Col Zovatter, Col Rudemberg, Col Kolm (Plans), Col Mantz and the AFFTC people was held on the morning of 31 May to obtain an AFSC position. Guidance was provided as follows:

a. USAF must recognize obligation to support MOP 9RRA-9060 and provide resources for June class.

b. If USAF wants a special 10-student NASA course in September, the AFFTC requirements as forwarded by B/Gen Branch, and indorsed by Gen Schriever must be acknowledged and provided for by USAF, and that a decision on the class must be made immediately.

c. AFSC must be given the responsibility for determining the overall national requirement for astronauts and be given a minimum of 90-days for the completion of such a study.

(Gen Ritland stated that he believed DCAS should be the focal point in AFSC for this study.)

4. The USAF panel met again on Thursday afternoon and agreed to our position with the one exception that they proposed to include their stated requirements (per par 2 above) in their briefing to Lt Gen Burchinal. This briefing is tentatively scheduled for 4 June with subsequent presentation to Gen Lemay on 5 or 6 June.

CLAY TIGE, JR.
Colonel, USAF
Deputy Chief of Staff/Plans & Operations

25 May 1962

Resources Required to Increase Training Capability of USAF Aerospace Research Pilot School

AFSC (SCP)
Andrews AFB
Wash 25, D. C.

1. The following information is submitted in answer to your message, SCP-22-5-8, dated 22 May 1962. The ability of the AFFTC and the USAF Aerospace Research Pilot School to prepare and present an adequate course of instruction for an additional class in the Aerospace Research Pilot Course starting in September 1962 will be dependent on three major actions:

a. Firm direction and support from the Air Staff by 1 June 1962.

b. Immediate Hq USAF and Hq AFSC action to provide the previously requested money and manpower documented in Engineering Service Project 922A-9060.

c. Support at all Command levels to provide the additional resources detailed in the attachment by the dates specified.

2. Delay in any of the above actions will seriously jeopardize our ability to present an adequate course and may well result in embarrassment to the Air Force.

3. The resources required as presented in Attachment 1 have been determined solely on the assumed requirement for an additional class in September. No effort has been made to predict changes in the long term planning figures; such action would be meaningless until more definitive guidance is provided on the size and frequency of future classes. More definitive requirements for the future will be forwarded upon the receipt of additional guidance.

IRVING L. BRANCH
Brigadier General, USAF
Commander

1 Atch
Resources Requirements

ETT Info Copy

ATTACHMENT #1
Resources Requirements

A. Aircraft

Type	Pre. Recognized Requirement	Present Assigned	Additional Required	Total Required	Date Required
F-104A or C	6*	6	3	9	1 Jul 62
F-104B or D	2	2	3	5	1 Jul 62
F-106A	1	1	0	1	--
F-106B	1	0	1	2	1 Aug 62
TOTALS	10	9	7	17	

The additional requirements were determined on the basis that the same flying program will be provided for the September class that is planned for the 18 June class. Since both classes will be in session at the same time, the peak flying hour requirement will be more than doubled. It is essential that the 1 July delivery date be met in order to accomplish required instrumentation of the aircraft prior to the class starting date.

B. Funds

1. Simulator $150,000

The program scheduled on the Interim Static Simulator for the 18 June class will tax the simulator to the maximum in both availability and reliability. Any major breakdown in equipment or temporary loss of personnel would prevent completion of the minimum acceptable program for that class alone. It is therefore infeasible to plan to double the work load on this equipment. As a result it will be necessary to contract for this simulator program. Preliminary inquiries to North American Aviation in Los Angeles indicate they can provide this program at approximately the cost stated above. A total of 19 training hours per student will be provided.

2. NADC Centrifuge (Johnsville, Penn) $90,000

Rental of this facility for two weeks will be necessary for the September class. The cost figure is based on an estimated $45,000 per week rental fee. Each student will receive 6 hours centrifuge training.

* Three of these aircraft are undergoing a Class V modification and will not be available for use in the school until mid CY-63.

atch #1

3. Space Simulator (Chance-Vought) $90,000

Rental of this facility for two weeks will be necessary for the September class. The cost figure is based on an estimated $45,000 per week rental fee. Each student will receive 6 hours simulator training.

4. Pressure Suits $50,000

Ten AP22S-2 full pressure suits will be required. Adequate protection is mandatory during the high altitude (80-90,000 feet) portion of the flying training program. This suit is the only one available that provides the required protection and still affords sufficient mobility to accomplish the necessary flight maneuvers.

5. Aircraft Instrumentation $255,000

Three of the additional F-104 aircraft must be specially instruemnted to meet the requirements of the flying curriculum. Average instrumentation equipment costs are $55,000 per aircraft. Contractor installation costs are approximately $30,000 per aircraft.

6. Travel Funds $70,000

A significant portion of the training program is conducted at locations other than AFPTC. Commercial air travel to these locations will be necessary to meet the training program schedule.

7. Personal Equipment $5,000

These funds will be needed to provide the required initial issue personnel equipment items and necessary replacement of unserviceable items for the 10 new students.

8. Office Equipment/Supplies $10,000

These funds are necessary to purchase office equipment and supplies for the additional students, staff members and support personnel.

9. All funds must be made available as soon as possible so immediate procurement action can be undertaken.

10. Summary

Item	Present Unfunded	Additional Requirement
Simulator Rental	-	$150,000
NADC Centrifuge	$90,000	90,000
Space Simulator	90,000	90,000
Pressure Suits	-	50,000
Aircraft Instrumentation	90,000	255,000
Travel Funds	35,000	70,000
Personal Equipment	32,400	5,000
Office Equipment/Supplies	16,100	10,000
F-106 Mod (Variable Stab)	1,000,000	-----
Miscellaneous	186,000	-----
	$1,539,500	$720,000

c. Manpower

1. Aircraft Maintenance 63

These spaces must be filled with qualified, experienced personnel by the date specified in the summary; otherwise it will not be possible to utilize the additional aircraft as required. The manpower spaces required for aircraft maintenance are allocated automatically when the aircraft inventory is changed; however, these allocations apparently do not reflect recognition of the fact that special purpose test or test training aircraft require more maintenance manhours per flying hour than similar tactical aircraft. The flying program consequently demands more maintenance effort than can be provided within the authorized manning structure. Support of the proposed program on a similar basis will be absolutely unacceptable. A manning mix of approximately 50% military and 50% civilian is desirable.

2. Aircraft Instrumentation 2

Two spaces are required to maintain the additional instrumented aircraft on a continuing basis. The five previously requested spaces must be provided immediately.

3. School Staff 5

Three of these positions are needed to support direct instructional requirements and these positions must be filled by select officers at the earliest possible moment. The complex nature of the academic, simulator and flying instruction demands skills that can only be obtained on a name request basis. The other two spaces are needed to support the planning and coordinating requirements generated by the new course. This function was previously accomplished primarily by the instructional staff during the period between classes, but will not be possible in this instance because of the class starting 18 June.

4. Simulator Support 4

The simulator support area is the most critical area in the entire program. Three different simulators have been constructed in-house at AFFTC and are used in the training program. This has been accomplished without any manpower augmentation but at considerable expense to other important flight test work. Immediate allocation of manpower spaces and assignment of qualified personnel to provide adequate support in this function is absolutely essential.

5. Procurement 1

The additional funds required to support this program will be handled by AFFTC procurement. The additional procurement action will require one additional procurement specialist.

6. Personal Equipment 1

One additional personnel equipment specialist will be required to service the increased number of pressure suits.

7. Summary

Area	Unfilled Prev. Requirement	Date Required	Additional Requirement	Date Required
Aircraft Maintenance	?	Immed.	63	1 Aug 62
Aircraft Instrumentation	5	"	2	1 Jul 62
School Staff	12	"	5	15 Jun 62
Simulator Support	3	"	4	1 Jul 62
Procurement	0		1	1 Jul 62
Personal Equipment	0		1	1 Sep 62
TOTALS	20+		76	

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FTT/Capt Neale/27081

26 Feb 1962

Present Status of Training Equipment

FTO (Col Wittrock)

1. The following information is submitted to clarify the current status of training equipment needed for the Aerospace Research Pilot Course scheduled to start on 14 May 1962. Two basic areas of AFFTC in-house effort (simulators and aircraft instrumentation) are currently in progress and each will be discussed separately.

2. Simulators.

a. Interim static simulator.

(1) F-106 Cockpit Rehabilitation: FTEMF's effort is completed. This included cutting access doors to equipment bays, installing a blower system, wheels, catwalk, tow bar, various covers for removed equipment, and a good general rehabilitation. The cockpit is currently at FTECS for installation and checkout of the seat and canopy, both of which are operated by a 28V DC system. FTECS has rehabilitated the canopy and seat, and plans to have both installed and operational by 28 February 1962. On 28 February the cockpit will be moved to Bldg. 1408 adjacent to the GEDA analog computer for commencement of work by FTFER. This work will entail:

(a) Installing instruments and black boxes.

1. All required instruments and black boxes were ordered by FTECS supply on 5 January 1962. At present, approximately 45 of the 75 items have been received and issued to Lt Davis in FTFER. Follow-up action initiated by FTECS on 24 January revealed the depot had canceled anumber of items due to lack of justification. However, this has been cleared and the canceled requisitions, most of which have a high priority, are now back in effect. Further, an aggressive follow-up system has been established and the remaining parts should be on hand by the time needed. Hughes Aircraft has sent blueprints of 4 separate types of side arm controllers. We plan to have a duplicate set of each type made by FTEMF. Workload requirements for this effort have not yet been determined. One set will be for the ballistic

AFFTC FORM 13 JAN 59	NAME AND OFFICE SYMBOL OF ORIGINATOR	PHONE NR	DATE	TYPIST INITIALS
	Capt Neale FTTS	27081	26 Feb 62	

control simulator and the other for this simulator.

2. The effort required by FTFER installing the instruments will be relatively routine, but could be greatly facilitated by the presence of an F-106 instrumentation specialist. The specialist would be invaluable in helping to identify wiring, since the instruments will work off the standard A/C wiring system, in trouble shooting and in actual installation of the instruments. A capability for this task has been identified in the A&E Communications Shop, FTELM-4. Further coordination with FTELM will establish workload requirements in this area.

(b) Steps required to mate the GEDA analog to the cockpit.

1. Connect a separate power source to drive the instruments. Necessary power source is on hand.

2. Connect analog leads to the individual instruments through a common "patchboard". Some materiel may be required for this effort, however, no problems in procuring the materiel is anticipated.

(c) Checkout and programming: After the above are completed checkout of the mated equipment using different computer programs will be required. FTFER has all information needed for programming and also when the completed simulator must be ready for student use. The first date actually programmed for student use is 4 June, however, it should be realized that a rather extensive checkout effort using the proposed computer programs in the completed simulator will be required prior to that time.

b. Ballistic control simulator.

(1) Present status: FTEMF is building the entire simulator. Blueprints, donated by Boeing and NASA, for the complete simulator have been on hand and in FTEMF's possession since December. FTEMF prepared a materiels list and at least 85% of the required materiel was obtained from the Rocket Site which is now in Base Supply. Most of the remaining materiel is on order with no difficulty expected in obtaining. On 26 January, Captain Scott (FTT) and 3 representatives from FTEMF visited Ames to observe their simulator and to discuss construction problems with the Ames personnel that had actually built theirs. This trip was very informative and FTEMF personnel now see no reason why they

cannot construct a much improved version of the Ames simulator. Extensive improvements will be made through use of better, lightweight materiels without changing the basic design.

(a) Steps to be taken:

1. Much of the work on this simulator is being conducted concurrently. There are 4 basic elements in the structure, 3 of which are currently under construction. The 4 basic elements are as follows:

a. Structural frame. Completed.

b. Pedestal mount - materiel on hand - almost entirely welding effort. Can be accomplished in a few days. Will build two, one 4' high and the other 13' high. Have started work on the 4' mount. No problems.

c. Air bearing - requires mating an 8" diameter steel ball to a pad. Mostly machine shop effort. Will require a rather extensive manpower effort due to extreme close tolerances required. Will be a real challenge to this shop's capabilities. All materiel and tools are on hand. Machining has started. Estimate completion on 30 March 1962.

d. Reaction control system - only portions of this system are available but details have been finalized. Items required are as follows:

(1) Air bearing air source - compressed nitrogen which is readily available in quantity at Unconventional Fuel Storage. Arrangements have been made for its use.

(2) Large capacity storage tanks for nitrogen. This equipment is currently located at the Rocket Site and will be available when needed.

(3) Pressure regulators (3) to vary the thrust of the reaction nozzles - currently on order.

(4) Valves - one for each nozzle - 6 valves required. Know what we want and are trying to locate a source. Have several promising leads. May be able to locate in AF stock. If not,

can be procured for a total cost of $600.

(5) Reaction nozzles - can be made by FTEMF in varying sizes from steel tubing. No problems anticipated.

(6) Tubing for the system - will be determined during final construction. No expected problems.

(7) High pressure air storage bottles - (Reaction nozzle supply) - these will be F-106 high pressure (5000 psi) pneumatic spheres. Two are on hand and ten on order. No expected problems.

2. Schedule: FTEMF has an up-to-date detailed schedule listing milestones necessary to meet the School's requirements. FTEMF assisted the School in determining this schedule and meeting it will only be contingent on manhour availability. The schedule completion date prior to checkout operations is approximately 15 April.

3. Location: The simulator will be constructed in the FTEMF shop then moved permanently to Bldg. 1210 for final checkout and student use. Arrangements have been made for its permanent location.

4. Other: This simulator will be maintained by FTE in the School hangar. In all probability this will be a full time job for one man while the simulator is in operation. How much effort will be required in development work by FTE while the simulator is not in use is undetermined. However, this will be a manpower requirement and will be planned for.

c. Orbital rendezvous simulator: This item is not mentioned in the ESP since it was just recently donated to the School by NASA (Edwards). It is an unsophisticated piece of equipment but very effective as a trainer. A general description of its basic elements is:

(1) Chair with sidearm controller.

(2) Two projectors with screen.

(3) Analog computer.

It will occupy a very limited space (approximately 3' x 12'), operate

off the GEDA and will be located adjacent to the interim static simulator in Bldg. 1408. FTFER personnel have examined it and see no problems in assembly, maintenance, or operation. Although considerable coordination between FTFER, FTT, and NASA has been completed on this simulator no detailed breakdown on the development program will be attempted at this time. Since the first actual student training in this simulator is not scheduled until 13 November 1962 no detailed development planning has been accomplished. The simulator is available at any time, completely disassembled, but with all parts on hand. NASA personnel may assist FTFER in assembly and programming if the need exists, however, further coordination will be required. An estimate of time required to assemble is approximately one week. This estimate was determined by discussion with FTFER and NASA personnel.

3. Aircraft Instrumentation: Currently the School plans to have only 3 F-104's instrumented for the May class, 2 fully instrumented and one partially. The status of this AFFTC effort is as follows:

A/C (Model & SN)	STATUS
F-104A 762	Completed - partial instrumentation only.
F-104A 750	Presently being fully instrumented. Work has been in progress by FTFSI for approximately 2 weeks. Estimated completion date - 1 May 1962.
F-104B 721	Full instrumentation was almost completed prior to being sent to TCTO early in February. It will require approximately 3 weeks additional effort to complete after return from TCTO on 20 Mar 1962, and therefore, should be ready for use when needed.

4. In summary, it appears all required equipment dependent on AFFTC in-house effort can be ready for use when needed unless some unforeseen difficulties arise.

5. Due to the AFFTC staff meeting on 15 February 1962 with Commanders of 3 letter organizations directly involved in support of this program, some clarification of the Center's policy on the project's priority may be necessary. The School understands that the priority still applies to all Center in-house effort but without major reprogramming of manpower

positions or Center funds. If this interpretation is correct, request that all interested organizations be informed by your office of this policy so as to preclude future misunderstandings.

ROBERT M. HOWE, Lt Colonel, USAF
Commandant

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FTT/Maj Buchanan/27081

2 Mar 1962

Minimum Support Requirements for Conducting Class II, Aerospace Research Pilot Course

FTO (Col Tice)

1. The following requirements are established as those necessary for conducting the minimum acceptable course, starting approximately 14 May 1962. Justification for each item will be given in an oral briefing. Requirements are based on a class of 8 students.

a. Flying training.

(1) Maintenance support for 5 F-104 and one F-106/F-102 aircraft.

(2) Instrumentation of three F-104's.

(a) F-104A 762 - completed.

(b) F-104A 750 - presently being instrumented.

(c) F-104B 721 - instrumentation nearly completed. Aircraft is now at TCTO and will require about three weeks work to complete instrumentation.

(3) Full pressure suits (8). Cost $60,000. (FY 62 funds)

b. Simulator training.

(1) Interim static (F-106 cockpit) - approximately $4,000 required for instrumentation. (FY 62 funds)

(2) Ballistic control simulator - approximately $5,000 required for valves, nozzles, and plumbing. (FY 62 funds)

(3) Orbital rendezvous simulator - approximately $2,000 required to replace items furnished by NASA. (FY 63 funds)

(4) Chance-Vought simulator - rental fee will be approximately $45,000. (FY 63 funds)

Buchanan 2 Mar

FTTS PCJ 2 Mar

AFFTC FORM JAN 59 13	NAME AND OFFICE SYMBOL OF ORIGINATOR	PHONE NR	DATE	TYPIST INITIALS
				dwc

(5) Johnsville centrifuge - rental fee will be $45,000. (FY 63 funds)

(6) Computer support will be required from FTF for the interim static and orbital rendezvous simulators.

c. Academic training.

(1) Training aids - celestial sphere, variable type orbit planes, etc. - approximately $1,000. (FY 62 funds)

d. TDY funds (based on commercial transportation) (FY 63 funds)

(1) Combined trip (Johnsville, Wright-Patterson, Patrick) $4,800.

(2) Brooks AFB (Bioastronautics training) $3,000.

(3) Dallas (Chance-Vought simulator) $2,000.

(4) Observatory (Astronomy) $150.

(5) Contractor field trip $2,500.

2. The summation of the required funds are presented below:

	FY 62	FY 63
a. Flying training	$60,000	
b. Simulator training	9,000	$92,000
c. Academic training	1,000	
d. TDY		12,450
TOTAL	$70,000	$104,450

3. Savings in funds could be realized by using military transportation on the TDY trips. This saving would amount to approximately $6,000.

4. Manpower savings could be realized by reducing the number of students. Reducing the number of students by two would reduce the aircraft requirement by one. Reducing the student strength would reduce

the FTF workload (computers) only slightly because the same computer set-ups would be required independent of the number of students.

5. It should be emphasized that the FY 63 funds cited above for the May class must be AFFTC "in-ceiling" funds rather than "over-ceiling" funds which will be requested to support the ESP. Tentative arrangements and scheduling must be completed for the Johnsville and Chance-Vought training within the next several weeks, so the status of this FY 63 funding requirement must be determined now.

ROBERT M. HOWE, Lt Colonel, USAF
Commandant

30 March 1962

MEMO FOR RECORD

Reference: Memo, Minimum Support Required for Conducting Class II, Aerospace Research Pilot Course, dated 2 March 1962.

1. On 26 March 1962 Colonel Tice, FTO, advised me of the status of the required items outlined in the referenced memorandum. The following is a report that he gave me on each of these items.

a. Instrumentation of 3 F-104A's (Paragraph 1 a(2)) - FTF has reported that the 3 F-104's will be instrumented in time for the checkout of the instrumentation and use of the aircraft for the class starting date 14 May 1962.

b. Full Pressure Suits (Paragraph 1 a (3)) - Aerospace Medical Center located at Brooks AFB will be asked to divert their delivery of some or all of the 4 suits to be delivered to them from the manufacturer David Clark Company, in July. Lt Colonel Burt Rowen, FTFEB, will be asked by FTO to assist in this matter and will contact Brooks to make necessary arrangements. FTT will be advised of further arrangements that will bemade.

c. Orbital Rendezvous Simulator (Paragraph 1 b(3)) and Computer Support (Paragraph 1 b(6)) - Funding for the orbital rendezvous simulator should not present a problem within AFFTC. $10,000 required for remainder of FY 62 will be available. Computer support for both the orbital rendezvous and interim static simulators is presently under negotiation by FTO. FTT will make a presentation to Colonel Tice on Wednesday, 28 March 1962, and present the proposal to provide FTT with the required simulator support for the aforementioned simulators. Colonel Tice, in turn, will present this proposal of simulator support to General Branch. A decision will be rendered on the simulator by General Branch, detailing support FTF will provide to FTT.

d. Rental Fee for Chance-Vought Simulator and Johnsville Centrifuge - $90,000 will be earmarked for this use subject to General Branch's OK. Colonel Tice will present this question for resolution to General Branch on Friday when the simulator support presentation is made.

2. After Colonel Tice concluded his report he asked that FTT determine the latest date that could be used for resolution of the FTF computer support problem and not necessitate slipping the school starting date of 14 May. 11 April 1962 is the date that has been determined. By that time, the computer support problem must be fully resolved and a definite course of action with firmly established project completion dates established.

ROBERT M. HOWE
Lt Colonel, USAF
Commandant